Welcome everyone to grand Rams.

We have two sets of speakers today with two quite different topics, so our first presentation is going to be focused on tissue donation and the rapid autopsy program that’s developing. And and we welcome Harry Sanchez, who’s an assistant professor of pathology. And as well as Marcella Destasio, who is an instructor in pathology. Doctor Sanchez is currently developing the Yale or Doctor Sanchez and doctor this size there.
Currently developing the Yale Tissue Donation Program, which we hope will enhance both basic and translational research at the school. When fully launched, the program will enable patients with late stage cancer to consent to donate tissue for research, as well as the component that is about rather rapid autopsy, where patients will be able to donate tissue in the context of a rapid autopsy program or a warm autopsy program so the tissue can be taken and used.
for a variety of different purposes in my experience, many, many different labs and it’s one of the big advantages of this somewhat difficult to approach. So without further ado, I’m gonna ask Harry this morning I’m gonna share my screen and hopefully you can see that. Yeah, you just need to be in presentation mode be in presentation mode that you go.
OK, well thank you. Thank you very much.

Doctor Weiner for the introduction and thank you very much for having us.

As you said, we'd like to talk to you about the rapid autopsy program, which is really technologically new about the approach, but it is a way to get patients involved in the basic science aspect of clinical research, and it's a way to coordinate our existing resources so that we can get. You know, sort of address the problem of getting high quality and sufficient quantity of tissue. And so our objective said today are
to talk to you a little bit about this approach and its advantages for patients and clinical researchers. And we do feel they were advantages for both.

To talk to you a little bit about rapid autopsy programs that already exist. And finally, to ask for your input and to ask for your participation, so that we're still putting this together. Those of you with thoughts on how we could do this better. We'd love to hear them, and so sorry to do that. And we'll just. We'll go with that.
The outline I'd like to put the problem sort of in context, and talk about the problem of sort of human tissue for research from the patient and research scientist perspective, and then talk to a little bit about how I think the rapid autopsy approach addresses some of those things. It’s it’s not a solution for everything, but I think it is a very useful addition to what’s already in place. So problems for patients in the general public or, you know, sort of the subheading why you might not want if you are a patient to participate in clinical research.
And I think this goes back to the problem that has been since the beginning of sort of. Sort of formal medical research once people realized physicians in the 1300s that it was hard to study function without understanding form, people started studying anatomy, and at the very beginning it was a small enough enterprise that only the most marginal people executed. Criminals were what was needed but as interest spread success became, you know,
sort of more universal and the approach became adopted. The supply of bodies for a study was far short of the legitimate demand, and so it created this sort of underground network of supply and people resorted to grave robbery, and when that wasn’t enough, eventually in Edinburgh murder to come by tissue and that led to the Anatomy Act of 1832 and the reason that I include this is that I think the Anatomy Act which addressed this problem beautifully states the problem. Basically, you can’t know the causes and nature
of disease without studying tissue,

but the supply of tissue is insufficient and that can drive people to do very ill advised things,

and that’s not a problem that went away in the 1800s.

So on the left here you can see this is an image from the Tuskegee syphilis experiments,

which are rather the study that started in 1932 and went on for the next 40 years,

and on the right is the front cover from the immortal life of Henrietta, Lex.
She was a woman in her early 30s who developed cervical cancer, went to Johns Hopkins for treatment and tissue from her cervical cancer was used to create a very successful cell line. The heel of cells, but that was done completely without her knowledge or her consent. And so while all of these things may have had. Good intentions behind them and developed some results. The result is that human. Sort of tissue for use of medical research has this sort of checkered
and sort of fraud.

Past that, I think generates the sort of suspicion that still with us today.

Even when we try to do things as a profession that are for the public good. No, there are still plenty of people who want to participate in research and do and do and and. I'd like to say that I'm going to talk mostly about participating in the earliest phases of sort of basic science research, and that is something that's very difficult to do as a patient or just a member of the general public.
Research is extraordinarily expensive. I think you know the average NIH award is something on the order of half $1,000,000. And it's not the sort of thing that most of us can put a dent in individually, but you can't really foster. You can, however, donate tissue. The problem with tissue donation as it currently exists is one of coordination so that people do occasionally come to us and say that their next of kin would like to donate.
their body to the medical school.

Or for research, and the problem is that it’s sometimes hard on short notice to put together somebody who will receive that really generous gift.

So yeah, I’m going to turn this over here to Marco, or, rather to Marcello.

So you know if you wanna study human disease, you have a few options.
You need cells of some kind and you need tools to study them with and so there are a few model systems out there. Actually, I shouldn’t say a few. There are many many model systems out there, including cell culture and models, surgical specimens and standard hospital autopsies, all of which are fairly readily available but have their own limitations. Certain tissue sources, like cell culture, are an incomplete system. The tissue is not intact and the cells are grown in media that may...
Have you know, may have a lot of factors in it, but they are not embedded in their natural environment, so it makes it difficult to model.

You know non solar cell autonomous functions. Animal models of course have have contributed tremendously to our understanding of biology, but there are cross species. Differences and I'll just highlight a couple of them here.

RB Newton Mice developed pituitary adenomas as opposed to retinoblastoma. essentially a lead from any type of mutation in a mouse,
produces sarcomas as opposed to the the often you know, mucosal carcinoma is typical of, you know, the human patient would leave from any and in terms of metastasis, you know there are models that produce metastases? In miles, but spontaneous metastases are much more rare in mice than they are in human. So if you want to study human, it's best to actually look at human tissue. Ohh yeah, next slide.

So with human tissue we have a few options.
but there is limited availability of certain tissues, and the tissue that is available must be retained and examined by a pathologist for diagnostic purposes before it can be released for research. I’m a neuropathologist my research is in central nervous system diseases and of course brain tissue is extremely precious and surgically. Surgical removal is minimal as possible to minimize morbidity. So we have very limited access to that kind of tissue. And then there are standard
hospital autopsies which, while there is ample tissue available and often, you know, consent is given the the. Status of the tissue is often the problem here, so with longer postmortem intervals there’s degradation that occurs and also you know the the standard autopsy service on the hospital you know accepts. Patients from a wide variety of sources, some of which are better documented than others, and so you know one thing that the rapid autopsy program aims to do is to recruit.
You know donors who are well known to clinical services and their you know, clinical researchers here at Yale.

So just to quickly highlight a couple of effects of postmortem interval, if you look at these Histology images here on the right side, this was a nice study where they used surgical specimens and then basically just let them sit around for a few hours and see what happened to the tissue and you can see that as the postmortem interval changes.

I just want you to appreciate that.
there are changes from an immediately resected specimen on the far left to the.

and essentially what's happening there. There's breakdown of membrane integrity.

Proteins are denaturing, and you're basically losing the histologic structure.

The histone morphology of the tissue which can be limiting for our understanding of microscopic anatomy.

In that case there's also molecular changes that occur. There's a lot of rhetoric around RNA.

And post mortem interval is related to RNA. I can attest to the fact that grant reviewers
NOTE Confidence: 0.849801515
00:12:01.197 --> 00:12:03.549 get very very touchy when it comes to RNA.
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00:12:03.550 --> 00:12:06.006 I think it's actually a little bit overblown.
NOTE Confidence: 0.849801515
00:12:06.010 --> 00:12:08.374 The total quantity of RNA actually
NOTE Confidence: 0.849801515
00:12:08.374 --> 00:12:09.950 doesn’t decrease that much,
NOTE Confidence: 0.849801515
00:12:09.950 --> 00:12:11.525 but there’s actually more insidious
NOTE Confidence: 0.849801515
00:12:11.525 --> 00:12:12.910 problem when it comes to setting
NOTE Confidence: 0.849801515
00:12:12.910 --> 00:12:14.570 RNA and postmortem tissue,
NOTE Confidence: 0.849801515
00:12:14.570 --> 00:12:16.890 which is that certain RNA’s
NOTE Confidence: 0.849801515
00:12:16.890 --> 00:12:20.190 actually decrease or increase right?
NOTE Confidence: 0.849801515
00:12:20.190 --> 00:12:22.926 Because transcription,
NOTE Confidence: 0.849801515
00:12:22.926 --> 00:12:24.795 you know your your tissues don’t necessarily
NOTE Confidence: 0.849801515
00:12:24.795 --> 00:12:27.165 know that your brain is stopped function.
NOTE Confidence: 0.849801515
00:12:27.165 --> 00:12:29.057 Functioning or that your heart
NOTE Confidence: 0.849801515
00:12:29.057 --> 00:12:30.971 has stopped beating immediately,
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00:12:30.971 so certain transcripts
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actually increase after death,
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and certain transcripts decrease after death,
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and so that can lead to substantial
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unquantifiable bias in your study,
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which I think is actually a more significant
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problem than total RNA integrity.
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And then for the next slide there
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are also effects on proteins.
NOTE Confidence: 0.849801515
This was a nice study that was done
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on cerebral spinal fluid and looking
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at the effect of protein aggregation.
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Actually in the CSF.
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Overtime after death.
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And so again,
NOTE Confidence: 0.849801515
these are basically deviations
NOTE Confidence: 0.849801515
from the normal Physiology of life
that are occurring and therefore less representative of the state of your system during life. So these are all effects that we would like to minimize. With the rapid autopsy program. Another limitation.

With currently available tissue is just in sampling surgical specimens. For example, you know we have to. As I mentioned, we have to minimize morbidity. So in the central nervous system, you know that you can only take so much. So this picture just shows a composite
FMRI image of eloquent cortex.

In other words, brain that you still need in your head, and so therefore is inaccessible to interested researchers, and so. Of course this stuff is extremely valuable. For understanding the tumor environment, but we are unable to study it using standard surgical specimens. And that's important. It's important to have a wide breadth of of tissue to study both in space and in time, because we need to understand tumor heterogeneity within the tumor.
There are multiple clones within a tumor, some of which give rise to metastasis. There’s evolution we see molecular evolution. We see phenotypic evolution in tumors. Within the primary tumor and we also see a selection for certain features in metastasis. So access to all of this tissue from multiple sites. Multiple regions of the tumors. Is all essential for understanding the complete pathobiology of tumor. Genesis and metastasis formation. So so thank you. So what
I’d like to talk to you about next is just some of the mechanics of what rapid autopsies actually are. And how they differ from a standard autopsy and then the short answer is that rapid autopsies are not technically autopsies. They are anatomic gifts, so an autopsy is a diagnostic procedure performed on the remains of, you know, a decedent and. Permission can only be given by the next of kin. The legal next of kin. I cannot legally give permission in life for my own autopsy. That permission doesn’t survive my death,
however. I can give and this is by virtue of some universal anatomic gift act and legislation that’s been adopted by most states in this country. I can in life give permission for an anatomical gift of part or all of my body for the purposes of transplantation, therapy or research, and this is from the Connecticut statute and the important thing about this statute which governs organ donation, is that this permission survives my death. And cannot be. Sort of rescinded or modified.
by my next of Kent, so it’s a durable gift and it can be made not only for as I said, transplantation, but to a hospital or a medical school specifically for research and education purposes. So this is what covers these things. As Marcelo pointed out, the delay in standard autopsies is the thing that you know, renders the tissue less useful. And we’ve looked at our own postmortem intervals. 2/3 of our cases are longer than 24 hours between time of death.
and start of what typsy and most of that delay is due to consent delays and family discussions, which are important but take place after death and sort of slow things down. So how does the actual process work? So what we propose is that research investigators contact us when they have sort of Yale approved protocols, file them with us and talk to us about the requirements for tissue collection and storage. The clinicians and researchers are identify patients and you already have research,
00:17:24.610 --> 00:17:25.118 you know,
NOTE Confidence: 0.8464468156
00:17:25.118 --> 00:17:26.388 sort of relationships with them,
NOTE Confidence: 0.8464468156
00:17:26.390 --> 00:17:28.005 so that makes that easier
NOTE Confidence: 0.8464468156
00:17:28.005 --> 00:17:29.297 that might be interested,
NOTE Confidence: 0.8464468156
00:17:29.300 --> 00:17:32.160 and if they are interested,
NOTE Confidence: 0.8464468156
00:17:32.160 --> 00:17:34.960 walk through this very transparent
NOTE Confidence: 0.8464468156
00:17:34.960 --> 00:17:37.760 and very thorough consent process.
NOTE Confidence: 0.8464468156
00:17:37.760 --> 00:17:40.118 If the consent is is given,
NOTE Confidence: 0.8464468156
00:17:40.120 --> 00:17:44.010 we retain a copy of that at our program and
NOTE Confidence: 0.8464468156
00:17:44.110 --> 00:17:48.100 provide contact information with the family.
NOTE Confidence: 0.8464468156
00:17:48.100 --> 00:17:49.829 When the donor dies,
NOTE Confidence: 0.8464468156
00:17:49.829 --> 00:17:52.244 we were contacted either by
NOTE Confidence: 0.8464468156
00:17:52.244 --> 00:17:54.738 the family or the facility.
NOTE Confidence: 0.8464468156
00:17:54.740 --> 00:17:56.861 The permission you know we contact next
NOTE Confidence: 0.8464468156
00:17:56.861 --> 00:17:59.486 of kin and then we assemble our staff
NOTE Confidence: 0.8464468156
00:17:59.486 --> 00:18:02.109 as quickly as possible within an hour,
certainly.

And and we hope that we’ll be able to get to the actual you know, hopefully no more than six and hopefully less.

The idea is that we collect this according to protocol, save it in the appropriate way, and then hand it off at the first possible chance to the research lab who recruited. This patient, and so we’re not a tissue bank. We are just sort of there to smooth things over.
00:18:31.525 --> 00:18:33.660 I'll turn this over to Marcella.
NOTE Confidence: 0.721923697142857
00:18:34.270 --> 00:18:36.447 Yeah, I won't be labor this but
NOTE Confidence: 0.721923697142857
00:18:36.447 --> 00:18:38.590 actually go right to the next slide.
NOTE Confidence: 0.721923697142857
00:18:38.590 --> 00:18:42.592 There are a whole host of
NOTE Confidence: 0.721923697142857
00:18:42.592 --> 00:18:44.510 modern technologies that have
NOTE Confidence: 0.721923697142857
00:18:44.510 --> 00:18:45.960 really come into their own.
NOTE Confidence: 0.721923697142857
00:18:45.960 --> 00:18:48.540 A lot of them driven by
NOTE Confidence: 0.721923697142857
00:18:48.540 --> 00:18:49.830 next generation sequencing,
NOTE Confidence: 0.721923697142857
00:18:49.830 --> 00:18:53.292 but also by new techniques and
NOTE Confidence: 0.721923697142857
00:18:53.292 --> 00:18:55.540 microfluidics and other other.
NOTE Confidence: 0.721923697142857
00:18:55.540 --> 00:18:56.560 High throughput.
NOTE Confidence: 0.922151615
00:18:58.620 --> 00:19:01.164 Platforms that allow us to just
NOTE Confidence: 0.922151615
00:19:01.164 --> 00:19:04.007 gather a huge amount of data from,
NOTE Confidence: 0.922151615
00:19:04.007 --> 00:19:06.442 you know, relatively small but
NOTE Confidence: 0.922151615
00:19:06.442 --> 00:19:09.020 high quality fragments of tissue,
NOTE Confidence: 0.922151615
00:19:09.020 --> 00:19:11.888 and so all of these highlighted
here are certainly on the table

they’ve been performed in human
tissue and and validated there are.

Yeah there. There are too many
technologies to sort of enumerate,
but a large number of them.

Really yield the highest quality of data.
And and by by quality I mean high
reliability information which which is
basically it’s important to combat these
issues of of bias and and and being
misled by artifactual changes in the tissue,
which with with these huge data sets is
very easy to get sort of LED down the
garden path by those kinds of artifacts.
And so the quality of what you put in are really influences the value of the information that you get out of these. High throughput, big data, new technologies, and so the rapid autopsy, again, will we? My ability, yes. Again just contribute to the value.
in that the information about the patient having having a basically a pipeline in good communication between the sort of basic science labs, the clinical researchers and the clinical teams treating the patients. You know closing that loop, ideally through the rapid autopsy program, where we can disseminate all this information, will again, you get the most out of the out gifts that the patients donate. So just very very quickly a couple of results.
A couple of results from similar programs around the country. Johns Hopkins has a pretty mature program. They've had a segment of it, very much focused on prostate cancer, and they've shown a lot of really interesting things about clonal evolution and prostate cancer, and how that contributes to metastasis in different forms and the androgen insensitive and the androgen sensitive forms. Dana Farber has a very advanced program. This is just one example of a breast.
00:21:46.526 --> 00:21:49.474 you know the the amount of diversity

00:21:49.474 --> 00:21:51.610 in breast tumor metastasis.

00:21:51.610 --> 00:21:53.381 But there’s there’s a lot of other

00:21:53.381 --> 00:21:55.109 research that’s come out of that program.

00:21:55.110 --> 00:22:00.187 If we go to the next slide just a

00:22:00.187 --> 00:22:02.738 couple more of the NIH actually runs a

00:22:02.740 --> 00:22:04.805 And this you know again they have.

00:22:04.810 --> 00:22:06.566 They had excellent records.

00:22:06.566 --> 00:22:12.347 This was a really exceptional case study

00:22:12.347 --> 00:22:14.799 surgically during the patient’s life,

00:22:14.800 --> 00:22:16.630 both of primary tumor and


00:22:18.100 --> 00:22:20.356 But also then they had the rapid autopsy

NOTE Confidence: 0.922151615
at the end of the patient’s life, which you know together comprise just a tremendously valuable data set. And finally the the live on New York. That’s it.

That’s actually a transplant. Service and Columbia has partnered with the transplant service to sort of simultaneously perform warm autopsy on consented patients, and that’s enabled them to do all kinds of really innovative immunological studies. And this is just one example, looking at natural killer cell interactions and in their development in different tissues.
So just quickly to go through some of the programs that exist. There’s this is not a complete list, but there’s somewhere I think between you know, a dozen and 15 of these programs, and I list them here in sort of order of proximity to us. And and I point out that what these programs all have in common is that they are in areas that are metropolitan, have large patient populations, and they’re all based at academic hospitals with national reputations, and they all have a critical mass of NIH.
funded clinical research scientists.
And I think we have all of those.
All of those factors in place.
And I think we are in a position to set up a successful program here.
And I'll just turn that over to Marcelo to finish up.
So finally, yeah, just just to summarize, you know the the patients are offered an opportunity to to make a very meaningful. This kind of program promotes transparency and preserves autonomy of the donor and really puts the the donor at the center of a very important line of
research into their disease. Researchers, you know, I spent a bunch of time on telling you about different factors and tissue quality. Essentially, that’s the core good quality, good quality tissue that’s well documented and part of a sort of coordinated research team that includes the clinicians, the patient, the researcher and the. The rapid autopsy program. So we I don’t know Harry. Do you want to maybe take this one so in trying to put this together, we’ve? We’ve looked for input from a bunch of different sources and we’ve had long
talks with the folks at MSK and Johns Hopkins about their program, and we’ve had some really great conversations with the Yale Cancer Centers patient and Family Advocacy council and Community Advisory Board. So we’ve had, you know, patient input and sort of existing. Hopefully today is the input of some of our own clinical research community. And you know, we’d like to invite you to weigh in and ask questions and hopefully participate. And and this is, you know, where we can reach where you can reach us.
We have the beginnings of a website and here our emails and be happy to take any questions you might have.

That’s great, thank you very much.

Let’s just see if there in the chat.

So a question that was asked how do you recruit connect with patients and families?

I know that body donation is a very meaningful gift and legacy for many patients and their families.

How can frontline clinical colleagues help support your work?

And I’ll just add to that a bit which is, you know, you talked about the fact that there...
00:26:07.134 --> 00:26:09.906 was not a bank but that you would be
NOTE Confidence: 0.9515356
00:26:09.906 --> 00:26:11.458 essentially delivering tissue to a lab.
NOTE Confidence: 0.9515356
00:26:11.460 --> 00:26:14.439 I think it’s often going to be a program.
NOTE Confidence: 0.9515356
00:26:14.440 --> 00:26:16.800 Or an individual clinician who
NOTE Confidence: 0.9515356
00:26:16.800 --> 00:26:18.688 can do the recruiting,
NOTE Confidence: 0.9515356
00:26:18.690 --> 00:26:22.290 and I don’t think it’s going to be
NOTE Confidence: 0.9515356
00:26:22.290 --> 00:26:26.345 a lab per se that does that.
NOTE Confidence: 0.9515356
00:26:26.350 --> 00:26:28.198 Maybe your issues?
NOTE Confidence: 0.753246014
00:26:28.430 --> 00:26:29.830 Yeah, no, you’re absolutely right.
NOTE Confidence: 0.753246014
00:26:29.830 --> 00:26:31.578 So the different hospitals
NOTE Confidence: 0.753246014
00:26:31.578 --> 00:26:32.889 use different models.
NOTE Confidence: 0.753246014
00:26:32.890 --> 00:26:36.330 So MSK, I think their program takes consent.
NOTE Confidence: 0.753246014
00:26:36.330 --> 00:26:38.580 Johns Hopkins, the clinicians take consent
NOTE Confidence: 0.753246014
00:26:38.580 --> 00:26:41.280 and the ideal situation is to have a
NOTE Confidence: 0.753246014
00:26:41.280 --> 00:26:42.984 clinician who is also doing research.
NOTE Confidence: 0.753246014
00:26:42.990 --> 00:26:44.286 But you’re absolutely right.
I think it’s really the clinical carotene that has to approach the patient, and they have to identify people who they think might be interested and might be willing to.

If a second question, if a patient dies at home, how is it that the patient’s body reaches Yale?

What in those cases what we have are? We have a contract with an area Funeral Home that has agreed, obviously for a fee, you know to
make you know that transport to you. And finally, would you prioritize certain disease areas for patient recruitment in the initial rollout or would be up to each and every clinical research group? I think it would be really helpful if we could pilot this in a few areas. Getting those that you know, the clinic clinical people in those areas interested in invested. Do you have thoughts about that though? Yeah, more chill. Do you want to take that? Sure, so I think we have a lot of interest from neurology.
Obviously, you know this is one of the main avenues for central nervous system tissue, and so we have a number of clinicians and research labs, particularly in neurodegeneration, but also stroke. And I think we know, again, part of our purpose talking to this group.

Is we, you know, we think that the Cancer Center would be an excellent.
with all the research that’s happening in the labs you know, run by Cancer Center, Pi and the clinical teams here. So I think essentially these two areas are probably our first two rollouts. I can tell you that our lead neuro oncologist has already jumped in to say that he is happy to pilot. Right, that’s wonderful. Thank you, thank you Antonia. So with that I’ll thank you and we’ll move on to something entirely different. Monica, do you have a presentation yourself or you’re going to use other people? You do OK, so we’re going to hear 3
presentations from Monica Fredkin
and from Christina Matusek and from Mandeep Smith that will be presented at the Oncology Nursing Society and. With that I welcome them all.

I'm Monica Fredkin and I'm here sharing a presentation that we did in oncology Nursing Society Congress last week and I'm going to spend a few minutes talking about the ambulatory oncology transformation, specifically around one working group and I'm here. There were multiple people that were involved.
in this work and Chang Jeremy Corbyn, Mansky and Connie Angle King is a consultant and then I will hand.

Give a high level of the work that we've done, and then I'll. Handed over to Christina Matusik and Mandeep Smith were the leads of one of the work groups that have patient visit readiness to kind of show how we took this ambulatory work and put it into real practice.

So with that, how did we get started at all this work and. Back in March of 2020 and April of 2020, we really had to. Change everything we did about
We provided ambulatory care.

We consolidated clinics.

We moved all of the New Haven teams and clinics out to the network to different sites.

To provide additional capacity for inpatient, and with that what we learned is that.

While we had, we were forced to do this.

There was an opportunity to relook at how we provided ambulatory care, and so we Kim’s luster,

Lori Pickens, Kevin Billingsley.

At the time said,

how can we create a new normal and make one smile and really make this a two point?
00:31:22.040 --> 00:31:22.748 You know,
NOTE Confidence: 0.83835739625
00:31:22.748 --> 00:31:23.456 version 2.0,
NOTE Confidence: 0.83835739625
00:31:23.456 --> 00:31:25.226 so there was an ambulatory
NOTE Confidence: 0.83835739625
00:31:25.226 --> 00:31:26.554 transformation steering group that
NOTE Confidence: 0.83835739625
00:31:26.554 --> 00:31:28.682 was started and it really looked at
NOTE Confidence: 0.83835739625
00:31:28.745 --> 00:31:30.737 the ambulatory flows from before the
NOTE Confidence: 0.83835739625
00:31:30.737 --> 00:31:32.608 patient arrived all the way through.
NOTE Confidence: 0.83835739625
00:31:32.608 --> 00:31:34.491 So when they left and there was
NOTE Confidence: 0.83835739625
00:31:34.491 --> 00:31:36.416 a steering committee and within
NOTE Confidence: 0.83835739625
00:31:36.416 --> 00:31:38.008 that steering committee there
NOTE Confidence: 0.83835739625
00:31:38.008 --> 00:31:40.040 were six different subgroups.
NOTE Confidence: 0.83835739625
00:31:40.040 --> 00:31:43.802 The subgroups were around facility and
NOTE Confidence: 0.83835739625
00:31:43.802 --> 00:31:46.310 environment patient access technology.
NOTE Confidence: 0.83835739625
00:31:46.310 --> 00:31:48.110 Staff and staffing and then communication
NOTE Confidence: 0.83835739625
00:31:48.110 --> 00:31:50.584 and the final one in Orange is really
NOTE Confidence: 0.83835739625
00:31:50.584 --> 00:31:52.109 the care delivery workflow subgroup
that we’re going to talk a little bit about today to share what we’ve done, but each one of these groups are, as you know, we’re all interconnected. So how we do this really had to be done, thoughtful and coordinated. So the approach to this is that we had to do have a multiple steps in order to even understand where we were, and I’m going to go into the detail of the elements on this slide into future slides, but we had a five step process on what we approached this work.

53
and the first thing that we had to do is we had to kind of understand where we were, what was our current state, and in order to do this and we wanted to make sure that we represented all the areas across the ambulatory. So a key survey was created. We obtained information around role where people worked as well as what team they were. They were aligned with and there was a structured and unstructured questions we we wanted to know open comments which provided a significant amount of information.
and when you think about analyzing and aggregating the data we had, you know, open-ended questions can provide, you know a whole level. The workflows that were not included because they were part of other working groups was the supportive care services and the access call management and intake was all part of other working groups. So we really focused on the clinical flow of patients. The survey had was open for eight days. We had almost 200 people respond, which shows that there was a
real opportunity and engagement.

From all different roles and disciplines.

We had a nice mix of responses,

26% from physicians,

32% from nursing, but we had pharmacy.

We had lab.

We had access staff research, everyone.

We had multiple people that you know roles

So 2/3 were medical oncology,

but we had a nice representation of radiation oncology as well as surgical oncology.

And what’s not on here is that we

had a 5050 split of new like the

New Haven teams and the network.

So we really did get a great
00:34:22.505 --> 00:34:23.991 representation of the information
00:34:23.991 --> 00:34:25.676 that we were looking for.
00:34:25.680 --> 00:34:29.209 So once we took that,
00:34:29.209 --> 00:34:30.819 we spent a tremendous amount of time
00:34:30.820 --> 00:34:36.780 aggregating and analyzing the data.
00:34:34.350 --> 00:34:38.400 Workflows that came up as the
00:34:36.780 --> 00:34:38.400 opportunities for improvement and
00:34:38.470 --> 00:34:40.954 what a group of us did is there we
00:34:40.954 --> 00:34:42.972 priority ranked them and there were
00:34:42.972 --> 00:34:45.734 about 70 plus people that that were
00:34:45.734 --> 00:34:55.550 involved in this and the priority
00:34:55.550 --> 00:34:58.395 rank also needed to intersect
00:34:58.395 --> 00:35:1.000 with the different working groups
00:35:1.000 --> 00:35:5.550 that were also functioning so.
Well, this is a high level of the 10 different groups we had to create different subgroups within that within those teams. So there were three different COVID related projects and we deployed them to the COVID team. There was a working group already that was in place that could handle and manage those groups but the non COVID related really fell into four different buckets that you can see here. We had more than 70 stakeholders, including physicians, staff of all different roles, and more.
as well as sites that were represented in these different groups and for clinic flow. We had three different working groups that are still actively working and meeting and right now visit type criteria was a proactive approach on how we could identify patients that would be televisit appropriate that would help minimize switching visits. Last minute and being able to designate those visit types. The patient visit readiness which Mandeep and Christina will talk about is really also about the patient and physician having the
optimal visit and what can be done
beforehand and after to ensure that
those patients experience that visit
and the checkout process is also an
active working group around that
communication of what needs to be
done following the visit to ensure
that things are communicated.
And followed through on
whether it’s referrals,
orders and imaging that have
to be done or next visits.
Infusion flow was really around labs
and advanced release of chemotherapy,
but at the same time there has been
an initiative that we’re implementing
00:36:47.979 --> 00:36:50.673 lean toss across the the ambulatory
00:36:50.673 --> 00:36:52.609 areas where infusion is done.
00:36:52.610 --> 00:36:54.554 So we are working on lean
00:36:54.554 --> 00:36:56.418 tasks right now and then.
00:36:56.418 --> 00:36:58.638 Patient education was really around.
00:36:58.640 --> 00:37:01.720 How can we utilize and leverage technology
00:37:01.720 --> 00:37:04.629 to provide patient and family education,
00:37:04.630 --> 00:37:06.952 especially when there’s limited patients and
00:37:06.952 --> 00:37:09.590 family members that are allowed in clinic?
00:37:09.590 --> 00:37:11.529 That there’s a way to do this
00:37:11.530 --> 00:37:13.469 in this more of a a video,
00:37:13.470 --> 00:37:15.114 you know telehealth forum
00:37:15.114 --> 00:37:17.169 and then imaging is really.
00:37:17.170 --> 00:37:20.040 We’ve heard a lot about access challenges
00:37:20.040 --> 00:37:22.395 for scheduling and how can we work
together across the discipline with imaging to get patients scheduled,
timely and appropriately at the right location.
So while there are a lot of moving parts, we had a template of how we would move forward with this work.
First we needed to understand workflows and did process mapping and really identifying barriers that could impact the flow.
And then we had to just test it. And so we piloted we’re piloting different initiatives.
We had to be really selective.
And how we determine the site, what teams?

How are we going to measure this?

Because the goal ultimately is that this is sustainable as we continue to move forward, and what adjustments we had to make.

You know, using rapid change cycles and finally the goal is that once these pilots are really done, is that this?

We get this out everywhere we want to be able to utilize our.

You know, these efficiencies and opportunities to really go across which will enhance the smilow. 2.0.

And so this is just to understand there were multiple tools.
As I said, we want to be able to sustain this work. So we created within EPIC. There are tools we created standard operating procedures. We looked at the literature of what is said that on the work that we're doing to validate that what we are doing makes you know is is aligned with what else is happening out around the country. We graded metric based reports so we could share data so that people understand. How they're doing and where their opportunities are and to celebrate the successes, and finally,
00:39:09.818 --> 00:39:12.436 ASCO came out with some telehealth standards at the same time we were doing this work to ensure that we were doing the work that aligned with the ASCO standards.

So these are the high level work that was happening and now what I’d like to do is switch it over to Christina and Mandeep to share how the patient Visit Readiness project has taken the framework of what I have shared into a pilot.

Thanks Monica. So as Monica alluded to, our project was really on
The next five years, which has been showing that in this really patient visit, readiness is essential and it’s an essential component of patient safety as well as clinic flow. In our ambulatory setting, So this included basically just making sure that your patients that were coming in were completed all the prep that was done ahead of time was completed. The next appointment you know disposition was actually completed prior to the current visit. That’s coming up and making
NOTE Confidence: 0.77670228
00:40:21.550 --> 00:40:24.050 sure that any consults lab,
NOTE Confidence: 0.77670228
00:40:24.050 --> 00:40:26.336 any imaging or studying and studies
NOTE Confidence: 0.77670228
00:40:26.336 --> 00:40:27.860 or any prior authorizations
NOTE Confidence: 0.77670228
00:40:27.927 --> 00:40:29.442 that were required are being
NOTE Confidence: 0.77670228
00:40:29.442 --> 00:40:31.320 done ahead of time as well.
NOTE Confidence: 0.77670228
00:40:31.320 --> 00:40:34.978 So what we realized is that without the
NOTE Confidence: 0.77670228
00:40:34.978 --> 00:40:37.666 adequate preparation that was going on,
NOTE Confidence: 0.77670228
00:40:37.670 --> 00:40:39.678 there were significant delays
NOTE Confidence: 0.77670228
00:40:39.678 --> 00:40:41.686 within the clinic errors.
NOTE Confidence: 0.77670228
00:40:41.690 --> 00:40:43.442 Sometimes last minute cancellations
NOTE Confidence: 0.77670228
00:40:43.442 --> 00:40:47.480 for patients and an overall patient or
NOTE Confidence: 0.77670228
00:40:47.480 --> 00:40:50.130 provider satisfaction had decreased.
NOTE Confidence: 0.708353668
00:40:52.860 --> 00:40:54.780 And as Monica had mentioned,
NOTE Confidence: 0.708353668
00:40:54.780 --> 00:40:56.376 there was multiple surveys.
NOTE Confidence: 0.708353668
00:40:56.376 --> 00:40:58.371 There was survey questions that
NOTE Confidence: 0.708353668
were congregated and reviewed,

and within those visits,

what we realized is that there was.

Practices carried concerning Preclinic

There was multiple variations

within our House system.

As you can see in this slide,

you see that about 80% of the team

did some sort of prep before about.

But only about half of them really had

some form of guidelines to follow or

best practices within the clinic prep.

In addition,

a vascular majority of teams were

also not doing any sort of post clinic
huddle and most patients were leaving without any follow up appointment. Which again brought concerns to the team. We also surveyed clinic prep activities and found that the majority of respondents do review the schedule ahead of time. But again, half did not use any standardized criteria, and about a third do not review test results. Of course, do not communicate or review missing orders.
And lastly, less than half did not evaluate ahead of time which patients could benefit from a nursing visit.

So when doing a literature review, as Mike had mentioned, there was reviews being done and we realized was that we're starting to work on this initiative and needed to really look at the ambulatory areas and see. You know what was happening in other areas, so a major article that we reviewed was published in 2021, which found that researchers were
performing a systemic review about
of 49 studies that ranged around
10 countries and highlighted about
8 previsit planning techniques
that could be used.
And with this review,
it really suggested that prepare
preparing for clinic can enhance the
quality of patient care as well as
patient to provider communication.
And 84% of the authors reported
Patient preparedness was a
really effective way to improve
patient centered care.
So when looking at what we’ve talked about, which is patient visit readiness, what does this actually mean and how do we achieve it? We needed to define this, so visit readiness really begins. Your post clinic wrap up from the prior visit as that will be outlined. You know, with an RN or a scheduler, at which time then you are looking at your next visit and really reviewing what is required for those people. Preclinic prep sounds obvious. This is a proactive approach of reviewing what the practice nurse is looking at and all the elements.
that need to be completed before the patient comes in for the visit. And how do we achieve all that? It’s through completion of your provider disposition to guide the Previsit prep as well as the the defined team huddles to improve communication for all the teams and then this can all be done virtually or in person. Weekly, daily or really, whatever works for your team, but it allowed you to have the what, how and when of what patient was it? Readiness looks like.
So I have seen really just to fix the team. This is Doctor Kirkman’s team and the post clinic cuddle that they run is usually done weekly on Friday and as you can see he did it in person with his team. This also act as a wrap up for the general elements that are being done within the clinic. What we found is that it engaged the staff and increased efficiency, communication and collaboration, and these huddles can really be customized to each team and what exactly you are requiring for your team. However, we did outline key players for each channel, meaning the practice nurse,
the provider and the scheduler. And I'm going to hand it over to Christina now. Casino.

Thanks Randy. So when we began our process a long time ago, we developed this Visio map which really outlined every element from check out from the previous visit to the next visit that they were being seen to really understand this process and how we can improve this across the health system. We further broke this down and to the left hand side where you can see the
different swim lanes that looked at the responsibilities of the provider versus the practice nurse versus the schedule as well as we incorporated. Via medical assistance or the ACA’s. It was a lot of work to do it in this way, but it really helped to be. It really helped us to understand where we needed to improve our process. So since we discussed the different elements that we focused on, we actually did develop some tools that were meant to be helpful for preclinic prep purposes and to lessen the workload of the practice nurse who is
performing the preclinic prep elements.

So the first is what’s called the UNC Summary Nurse tab.

It’s actually located in the multi provider schedule.

It allows the practice nurse who is performing the Preclinic prep one click area.

To go through the different elements that she may find helpful to the Preclinic prep prep process.

So this was developed to hopefully reduce the amount of time that the practice nurse has to spend doing preclinic prep.

It involves many elements and components to the report,
including treatment plan,

the actual follow up disposition from the previous visit will be there so that they can actually understand what is needed for the next visit.

To help streamline this process.

So you can go the next slide.

The other feature that we developed is what’s called the Visit Ready feature on the multi provider schedule.

This is a column that anyone can add to their provider schedule and it for those that are currently in the pilot phase.

The physicians will actually see this being done in their areas,

but you can see that once the
00:47:40.601 --> 00:47:42.410 patient is deemed visit ready,
00:47:42.410 --> 00:47:44.405 the practice nurse will actually
00:47:44.405 --> 00:47:47.729 go in and make the patient a green.
00:47:47.730 --> 00:47:50.979 Check for yes or a red X for no.
00:47:50.980 --> 00:48:00.326 We also included a column for Visit
00:47:53.528 --> 00:47:55.805 Ready comments and that allows the
00:47:55.805 --> 00:48:00.326 practice nurse to make comments in
00:48:00.326 --> 00:48:01.439 that specific area so that number
00:48:01.440 --> 00:48:03.066 It can remind themselves of who’s
00:48:03.066 --> 00:48:04.779 to visit ready and who is not,
00:48:04.780 --> 00:48:06.588 as well as what they need to follow
00:48:06.588 --> 00:48:08.538 up on for that particular visit.
00:48:08.540 --> 00:48:11.095 This is also viewable by the provider
00:48:11.095 --> 00:48:14.110 if he rents it into your multi
00:48:23.714 --> 00:48:25.223 Then they can track who
00:48:25.223 --> 00:48:26.314 is ready to go and make sure
00:48:26.314 --> 00:48:28.803 they are following up.
00:48:14.110 --> 00:48:15.030 provider schedule.
NOTE Confidence: 0.911246244285714
00:48:15.030 --> 00:48:17.270 So that the providers are able to
NOTE Confidence: 0.911246244285714
00:48:17.270 --> 00:48:19.110 see their clinics prep as well.
NOTE Confidence: 0.911246244285714
00:48:19.110 --> 00:48:20.410 Isn’t that the next slide?
NOTE Confidence: 0.92133506
00:48:22.230 --> 00:48:23.340 So in order to convey
NOTE Confidence: 0.890053332142857
00:48:23.350 --> 00:48:26.008 this new workflow, we performed formal
NOTE Confidence: 0.890053332142857
00:48:26.008 --> 00:48:28.723 team trainings to discuss this with
NOTE Confidence: 0.890053332142857
00:48:28.723 --> 00:48:31.240 each individual that included the
NOTE Confidence: 0.890053332142857
00:48:31.240 --> 00:48:33.990 discussion of the workflow itself,
NOTE Confidence: 0.890053332142857
00:48:33.990 --> 00:48:36.526 the huddles that we wanted them to do,
NOTE Confidence: 0.890053332142857
00:48:36.530 --> 00:48:38.514 as well as the tools that we developed
NOTE Confidence: 0.890053332142857
00:48:38.514 --> 00:48:40.368 to help streamline this process.
NOTE Confidence: 0.890053332142857
00:48:40.370 --> 00:48:44.183 We also offered initial first huddle,
NOTE Confidence: 0.890053332142857
00:48:44.183 --> 00:48:46.148 guidance and facilitation for the
NOTE Confidence: 0.890053332142857
00:48:46.148 --> 00:48:48.445 new Members that were being part
NOTE Confidence: 0.890053332142857
00:48:48.445 --> 00:48:50.425 of this pilot and the session
00:48:50.425 --> 00:48:52.280 involved all team participants.
00:48:52.280 --> 00:48:55.424 And were completed prior to the GO live.
00:48:55.430 --> 00:48:57.930 Go to the next slide.
00:48:57.930 --> 00:49:02.532 this has been a really big work in progress.
00:49:02.540 --> 00:49:04.850 We currently have North Haven,
00:49:04.850 --> 00:49:07.016 Guildford and Greenwich
00:49:07.016 --> 00:49:10.626 underway with our pilot sites.
00:49:10.630 --> 00:49:12.884 North Haven was our first site to
00:49:12.884 --> 00:49:15.459 go live in October of last year.
00:49:15.460 --> 00:49:17.120 Greenwich currently went live.
00:49:17.120 --> 00:49:20.103 I believe last week and we also
00:49:20.103 --> 00:49:21.940 have planned sites that are going to
00:49:23.550 --> 00:49:25.800 Thoracic oncology head and neck

81
00:49:25.800 --> 00:49:27.600 surgery GI met on.
NOTE Confidence: 0.890053332142857
00:49:27.600 --> 00:49:30.420 As well as classical hematology and
NOTE Confidence: 0.890053332142857
00:49:30.420 --> 00:49:32.800 malignant hematology and North Haven,
NOTE Confidence: 0.890053332142857
00:49:32.800 --> 00:49:35.334 we also have incorporated trumple as well.
NOTE Confidence: 0.890053332142857
00:49:35.340 --> 00:49:38.250 They’re not on this side, but again,
NOTE Confidence: 0.890053332142857
00:49:38.250 --> 00:49:40.525 this is a work in progress and
NOTE Confidence: 0.890053332142857
00:49:40.525 --> 00:49:42.219 a huge team effort.
NOTE Confidence: 0.890053332142857
00:49:42.220 --> 00:49:44.356 And go to the next slide.
NOTE Confidence: 0.890053332142857
00:49:44.360 --> 00:49:46.040 So now on to the data.
NOTE Confidence: 0.890053332142857
00:49:46.040 --> 00:49:47.522 So we looked at many elements
NOTE Confidence: 0.890053332142857
00:49:47.522 --> 00:49:49.214 and we created this workflow and
NOTE Confidence: 0.890053332142857
00:49:49.214 --> 00:49:50.834 one of those included physician,
NOTE Confidence: 0.890053332142857
00:49:50.840 --> 00:49:51.398 disposition,
NOTE Confidence: 0.890053332142857
00:49:51.398 --> 00:49:52.514 compliance rate.
NOTE Confidence: 0.890053332142857
00:49:52.514 --> 00:49:55.862 This data represents 3 physicians from
NOTE Confidence: 0.890053332142857
00:49:55.862 --> 00:49:59.228 the North Haven site which looked at
82
00:49:59.228 --> 00:50:03.037 data from pre pilot to April of 2022.

00:50:03.037 --> 00:50:06.070 So as you can see the provider see and

00:50:06.156 --> 00:50:08.964 the green line really was compliant

00:50:08.964 --> 00:50:11.799 with this throughout they acted more

00:50:11.799 --> 00:50:14.445 as our control line or participant.

00:50:14.450 --> 00:50:17.708 And we saw that as we went into October,

00:50:17.710 --> 00:50:21.301 we saw a gradual increase in provider

00:50:21.301 --> 00:50:25.063 a during the pilot phase as and

00:50:25.063 --> 00:50:28.156 tapering off into about a 90th,

00:50:28.156 --> 00:50:31.168 90 high 90 percentile of completion

00:50:31.168 --> 00:50:34.467 as well as provider be as well.

00:50:34.470 --> 00:50:36.302 But the next slide.

00:50:36.302 --> 00:50:40.106 So in addition to the provider compliance,

00:50:40.106 --> 00:50:42.638 we also get practice nurse preclinic

00:50:42.638 --> 00:50:44.099 preparation compliance rates.
This represents graphs in the Helix report format that we looked at from North Haven and Guilford, so you can see that North Haven had a huge uptick in their compliance when they actually started the pilot in October, and they really maintained that compliance rate into the above 95% throughout their. The time in this study within Guildford. They went live in February of 2022 and you can see that with them it was a little bit more of a gradual rise in compliance, but overall has again tapered off into a great compliance rate for the remainder and go to the next slide.
In addition, we also looked at patient visit unreadiness volumes and reasons for why patients are deemed unready for their visit for North Haven. We calculated that about 17% of patients out of 1098 over the course of eight weeks were visit ready as well as Guilford, which was about 22% or 206 out of 930 scheduled visits and the real we listed the actual categories for why this was. But we actually found that the most common theme was the test.
ordering and scheduling that they were not performed or testing was not completed in a timely manner by the patient. Go to the next slide.

So in addition to our data collection, we are also really interested in feedback from the end user and ask them to respond to the following questions that you can see listed here for example. We have seen that the doctors have found fewer interruptions. They can review cases at the same times and our nurses have found that the huddles have really helped manage patients efficiently,
Improving the preparation really highlighted what patients did not have done prior to their visit. So during this process we definitely learned a lot, including the fact that specific tools can really streamline the process, but it also requires training and consistent utilization.
and engagement is really a key player and a huge role in the success of this initiative, especially with regards to the disposition, completion and leading post clinic huddles in a consistent manner.

Next slide.

So for our next steps, as we look to the future, we plan on working with it to refine our compliance tools and really refine our epic related tools based on feedback from the end user and we will continue to perform a systematic approach when rolling these out. To really ensure success of this program.
for those in the ambulatory setting,
we'll likely be working with you in the future with you and your teams to help improve your clinics and enhance patient preparedness, and we really look forward to your collaboration.
During this huge team effort. So thank you so much for your time and we will now answer any questions that make people may have with Doctor Kochanski as part of the discussion as well. Thanks very much.
The you know the only thing I will there’s a couple things.

One that we also are looking at, the press. Gainey, we have to understand how this is what the meaning is for patients as we’re doing this work.

So we’re looking at the press ganey aspect of of this.

patients as we’re doing this work. Obviously the physicians, the AP’s and I just want to say

a huge thank you to all of them.
As well as Christina and Mandeep you know and Jeremy I’m going to ask you if you have any kind of pearls or words of wisdom that you might offer as an end user of this work. As we, you know, finish up. Sure, you know. I think for our team this this meeting has really been transformative for our group. And while there is a a core group that I think needs to be there which includes the physician and the practice, nurse and PFA SII think that the larger the group is, the more productive those meetings are.
And we have included in our meetings, our AP’s, the infusion nurse as well as pharmacy and in doing so you really capture all of the different ways that we need to prepare for the visits, not just including whether a scan has been scheduled as ordered and will be available in time for the visit, but also where chemo orders need to be entered. Or informed consents need to be completed. It’s dedicated time to review the schedule with PFA. I think we all have these long lists of patients that have acute issues that we need to get in and rather than...
being disrupted all throughout the day
to figure out when that should be,
we now have dedicated time to do that.
As a physician.
It also allows me to follow up with
infusion nurses and the APP’s to find out.
Uh,
whether there are any urgent issues,
dose modifications,
things that need to happen with
patients that I haven’t seen that
week so that everybody on the team
is really understanding where all
of the patients are in their course?
You know who we can anticipate.
Might be progressing, or is having a lot of trouble where you know there might be flags that we say oh we need to bring in OCMD or social work or palliative care. It really is a holistic approach that can only be done when you have some dedicated time. And while I know that for my team we take an hour on Friday, I understand that not everybody has that much time. All of the patients from the week that was, and all of the patients that are in the week that follows,
and so it can be done in a shorter amount of time by just breaking it up into fewer days to review.

You know, Jeremy, I think that the team work is really essential. I think it can be done as an hour that you set up. One of the things that can happen in that huddle on the day of treatment, or for that matter the week before, is to identify patients where
if it gets busy, that person might be able to be shunted to the infusion room because you know they’re going to get a treatment anyway and see you afterwards as opposed to, I’m the one question I have is, but to what extent have you been successful, either in New Haven or at some of the other sites? In pairing infusion nurses with physicians so that a physician isn’t necessarily working with every infusion nurse in the infusion room.
I and maybe you do that, it’s just my experience in the past that has been challenging.

You’re on mute. Yeah, we actually haven’t with this work. We have not focused on the pairing or the team. I mean, we definitely have an infusion nurse as part of the huddles, because whether they’re, it’s the charge nurse that represents the infusion, but we haven’t done that. And with lean toss, I think we’re going to have to. You know, we’re looking at it a little.
00:59:23.122 --> 00:59:25.958 bit differently, so I’m not sure.
NOTE Confidence: 0.90556224285714
00:59:25.960 --> 00:59:29.159 What that will look like just yet?
NOTE Confidence: 0.90556224285714
00:59:29.160 --> 00:59:31.340 So I guess to be determined.
NOTE Confidence: 0.817877721333333
00:59:31.420 --> 00:59:33.324 Yeah, I know we had looked at it
NOTE Confidence: 0.817877721333333
00:59:33.324 --> 00:59:35.289 initially in hematology a long time ago,
NOTE Confidence: 0.817877721333333
00:59:35.290 --> 00:59:37.300 and with the move from
NOTE Confidence: 0.817877721333333
00:59:37.300 --> 00:59:39.310 New Haven to North Haven,
NOTE Confidence: 0.817877721333333
00:59:39.310 --> 00:59:42.190 it kind of it didn’t work correctly.
NOTE Confidence: 0.817877721333333
00:59:42.190 --> 00:59:43.780 But I do agree that there’s
NOTE Confidence: 0.817877721333333
00:59:43.837 --> 00:59:44.989 a lot of value in that.
NOTE Confidence: 0.835402044444444
00:59:45.170 --> 00:59:46.554 It’s always challenging with
NOTE Confidence: 0.835402044444444
00:59:46.554 --> 00:59:48.284 schedules and what have you.
NOTE Confidence: 0.835402044444444
00:59:48.290 --> 00:59:50.831 Although my my strong sense is that
NOTE Confidence: 0.835402044444444
00:59:50.831 --> 00:59:53.734 there’s a real value of caring physicians
NOTE Confidence: 0.835402044444444
00:59:53.734 --> 00:59:56.344 with maybe not one person because
NOTE Confidence: 0.835402044444444
00:59:56.424 --> 00:59:58.834 that one person could be off, but.
Two or three or four people, as opposed to.

15 right in any case, I just want to say you all have done a great job.

Thank you so much both for presenting the work, but more importantly,

for all the really great work you've done,

and there'll be more to come, I'm sure.

Thank you so much for the opportunity.

Ohh thanks all of you.

Thank you so much. We appreciate it.