

2023 KT Online Conference: Advances in Knowledge Translation: Principles and Practices

Presenter:
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ASHLEY CLARK-PURNELL: So now we're going to hand things off to our next panel on advances in knowledge translation principles and practices. So we have Dr. Marsha Ellison who is a professor of psychiatry at the UMass Chan Medical School and the director of knowledge translation at the learning and working Rehabilitation Research and Training Center, so RRTC Transition to Adulthood Center for Research.

So Dr. Ellison is going to be talking about advances in knowledge translation, principles, and practices. And so with that, Dr. Ellison, let me give you slide control. And you can go ahead and come on screen and self-describe.

MARSHA ELLISON: All right. Thank you, Ashley. So I am Marsha Ellison. And I am here with shoulder length brown hair, glasses, and a black top, and a string of pearls. So happy to see you all.

So first, I want to mention that I was intending to do this presentation with Dr. Marianne Farkas from Boston University. Dr. Farkas is down with COVID, believe it or not, and cannot make it today, so I will be doing my best to present her slides and share her knowledge, S would be a difficult undertaking. But I will do my best.

So both of us are here representing the Center for Knowledge Translation on Employment Research, affectionately called CeKTER. CeKTER is funded by NIDILRR. And Marianne Farkas and myself are the co-directors of CeKTER.

And so we'll be talking a good bit about strategies, and innovations, and knowledge translation really thinking theoretically, as well as practically, and how we have taken some of those things and applied them to CeKTER. OK, so this is our first slide. So KT has been described as the bridge between discovery and impact.

So here on the left are the research outputs. We are all involved in research and development of outputs. And then over there on the right are the research impacts.

And somehow, this has been described as the know-do gap. There's what we on the left. And then there's doing something with that knowledge on the right. And this is actually a gap in affecting research findings. And knowledge translation is supposed to be the bridge that connects those two things.

So presently, some current trends in KT practice, first of all, is at the end of the grant. Many researchers will develop and implement a plan for making knowledge users aware of the knowledge generated through a research project. So that's straight out dissemination. You're disseminating your knowledge, and you're trying to increase awareness.

Another practice that many are doing is try to do a bit of co-production, especially in research, as many of you know as community-based participatory action research. And it's bringing end users into the knowledge creation process, as well as into the knowledge translation process with the hope that you're going to develop materials that are action oriented and impact focused. And lastly, there is an increasing awareness of using implementation science to guide knowledge translation efforts. And we're going to talk about that a bit more in this presentation.

So the common current knowledge translation process, beginning at the top over to the little bit of the left of this circle here, is we do have stakeholder input. Many of us are very dedicated to bringing in stakeholders on advisory panels on using participatory action research in order to establish findings. And then further, we will use stakeholder advice on preparing materials for dissemination.

And those materials will-- and I'm going around the circle here. Those materials will be articles and presentations, curricula, et cetera. And we will use those manuals and guidelines to provide training and technical assistance.

So the curious thing is that this is often described as a cycle and is pictured here as a cycle. But really, as pointed out by Ian Graham in 2008, the cyclical view of knowledge translation is still really a pipeline. It is basically still one way, so starting with research and ending with training and technical assistance.

So the input of stakeholders here at the beginning of the research process helps. It moves from asking the question through interpreting the result. It can provide valuable insight that renders information more practical, so the gap between daily use and the study is lessened, however, it is still more or less the same process as before.

What's lacking is that the research, even with stakeholder input, is not to use the word, translate. It's not actually translated. It's disseminated, but not so much translated into the language, cultures, values, knowledge of the end user. And if we really are using translation, we need to be thinking about those things.

Secondly, even if it's well translated, it's often not incorporated into actual practice and use. So dissemination and awareness does not lead to adoption and use. So what to do?

Knowledge translation has evolved to think about implementation frameworks and also the use of complexity theory to understand the context in which knowledge translation is happening. And I will describe that a bit to you. So what's implementation science got to do with dissemination?

Well, the point is that it moves beyond awareness. It's insufficient to simply reach your audience. And I'm as guilty as the next knowledge translator, coordinator who counts views and counts downloads and calls that knowledge translation. But as we all know, that's not impact. That's not adoption and use.

So now the focus is more and more about what it really takes to promote uptake and integration of a new practice. And really, that is what implementation science is all about. So different frameworks have been developed to help the process of understanding, how does it go from knowledge to use?

So many there-- and there are-- sorry. Wait a second. I'll try to move this slide here. OK. So there are-- if you get into the implementation science business, you're going to find that there are dozens of implementation science frameworks.

And in fact, the CIFIR mentioned here, the acronym here, is the Consolidated Framework of Implementation Research. It needs to be consolidated because there are so many factors that have been identified as impacting knowledge to use in adoption and successful implementation. The one that many NIDILRR researchers use is this knowledge to action framework affectionately called KTA developed by Ian Graham in Canada.

And here is a pictorial representation of that. So I'm going to show you how this breaks down implementation process into seven actionable phases and describe how the knowledge to action framework works. So first of all, it does depend on the involvement of knowledge users as equal partners alongside the research process, understanding that having knowledge users as equal partners will result in better solutions-based research and greater confidence in the results and the researchers.

That makes me think a bit about the question that Kathleen posed in the previous session. How do we address bicoastal elitism? Well, one way is if you have your knowledge users involved from the beginning all the way through dissemination and implementation, there's a greater opportunity for people to feel like they are part of the process and have direct influence in that process.

So by having end users engaged, that means that there is a greater readiness and willingness to move those results into practice. OK, so I'm going to break down this picture for you if you're not familiar with it. In the center is knowledge creation.

So that's all of us. Researchers, we do knowledge inquiry. Going down the triangle here. And we synthesize our knowledge and then produce products and tools.

That whole process of knowledge creation, you can see along the right, is that we are actually tailoring knowledge to make it in a place where it's actually usable by the end users. Now, surrounding this knowledge creation circle is the implementation or action cycle. The action cycle begins with you have identified a problem. And you seek knowledge from the knowledge creators.

And having obtained that knowledge and having identified the problem, we're now moving around this cycle. We apply that knowledge to the local context. We assess barriers to knowledge use. We select,

tailor, and implement interventions. We monitor the knowledge use, evaluate the outcomes, and then sustain knowledge use.

Now, the truth is that me, like many of you, we have limited knowledge creation number of years. We might try to get to implementation. But implementation is a long process. It doesn't happen in days and months. It really happens over years. So if knowledge translation is going to be turned into use, adoption and use, and measured in terms of use, we need that length of involvement with the users to understand whether and how that use is successful.

OK, so this is the Knowledge-to-Action Framework that many people are using. And by the way, if you want to know more about implementation science and the different frameworks, there really is a vast literature at this point. Many good societies are out there to help train researchers to become implementation supporters and implementation practitioners. I'm sure many of you are familiar with that.

So the other interesting development or advancement we might say in knowledge translation is understanding complexity theory. So this is an article cited here by Kitson et al in 2018. And I'm going to try to describe this picture here to you.

So we have these circles, these colored circles representing community, health, government, education, and research. You can think of any one of your projects, and they are going to be relevant to nearly all of these components of our social life. And in fact, it would be very hard to effect change without addressing many of these.

You can change government. You can change legislation. But how far does legislation go into changing people's lives? And so you really need some of these other components to work together to affect real change.

So that's one part of complexity theory. And that's complex enough. But on top of that, we have this number of what we can call clusters of processes. And I'm going to name them, problem identification. You got to figure out what it is there is to study.

Identify the problem. Problem identification can come from any one of these domains that are on the right side of this picture. And then there's knowledge creation. That's us researchers. We're creating knowledge.

--evaluation, as many of us are quite busy going into programs and trying to evaluate what people are already doing. And we do some knowledge synthesis, trying to put it all together. And that can lead to implementation.

So all of these components, all of these processes are overlaid on these domains of social life. And you can see by putting that all together, that this is, indeed, very complex. And I think that we all sort of know this, that if we're trying to do knowledge translation, really, if we're trying to create impact on people's lives, it is a very complex process. And sort of like the elephant in the room, you can try and work on the tail, but you might be missing all the rest of the elephant that makes a change possible.

So what the complexity theory suggests is that there is a knowledge synthesis cluster, and there is an implementation cluster. And really, what you need are these brokers of information and behavior change that go between knowledge synthesis and implementation. So these are people who can connect into, and across, and between multiple networks.

Oh. I'm sorry. I didn't advance the slide here here. Here it is. These are the two clusters. And we need people who can move between the clusters to achieve a desired outcome.

OK. So in designing CeKTER, we had these theories in mind. And consequently, we designed a continuum of knowledge translation. And we use these what we call the four E's. And the continuum is this.

It begins with exposure. And that's just going to a training and learning about something. And experiences goes a little bit deeper. You're actually trying to do something with the knowledge that you've gained that was gained through exposure.

Having developed substantial experience, one developed some expertise, finally. And then embedding is implementation. You not only have expertise, but now it's actually brought into practice.

So for our knowledge translation center, our end users are all of you, specifically employment, NIDILRR funded employment researchers. And we wanted to improve the practice of knowledge translation by NIDILRR employment grantees. And we use these four E's as a way to structure our center.

So the first one for exposure is we developed-- we have brief technical assistance. If you come to us for some technical assistance, we will provide a couple of days of support on your issue. We've developed a number of dissemination products. And there's a link to our website. Come see them. Again, like other dissemination products, they are there to increase awareness.

And we have the Knowledge Translation Academy. The KT Academy offers brief courses in a variety of topics. So that's our exposure link.

Moving to experience, we have developed a series of Knowledge Translation Academy topics, some of them. And there, instead of just one brief session, there are, like, three to five sessions. So this is really giving an opportunity for people to not just hear the information, but to begin to use it and to develop some experience.

And then within CeKTER, we have communities of practice. So that presumes that people have some experience in a particular topic. And they are using communities of practice to develop their expertise. I'll describe that in a bit more detail.

And we are also trying to develop a coaching strategy, so that people can come to us and we can coach people. Just as coaching is needed in any evidence-based practice, coaching is needed for knowledge translation professionals to help them to move from just beginning to think about what their outputs are into, how do I bring these to the agencies and the end users that matter and actually affect practice

change, behavior change, and also policy change as well? And coaching-- the last years of CeKTER, we'll use a couple of sites to take coaching and bring that really use implementation science and the Knowledge-to-Action Framework to work closely with real agencies real providers of services to effect change in employment delivery.

OK. So this slide is just pictures of KT Academy. As I mentioned, we have courses on dissemination and implementation. We deliver exposure courses, experiential courses. These courses are live and archived. Please come to our website, and you'll see them.

We've had Ian Graham come on to explain the Knowledge-to-Action Framework. We-- Ana Baumann presented on equity and implementation science. And we had a very well received academy offering on social media, use of social media.

OK. A little bit more about the coaching for knowledge translation. So we are in the midst of developing the coaching manual. We expect to have developed it together with site programs that we have and to explore exactly what is the content within the coaching manual.

How would we know if we achieved it? How do we understand our setbacks and victories? And also, we're going to pilot it to figure out what is duration of the coaching. So that's underway. Please stay tuned, and you will see it.

OK. So a little bit about our communities of practice. As I mentioned, this is on the developing of expertise. And we have a very long lived community of practice on social media.

And we invite you all to please participate in our community of practice. Come to our website, and you can find out when the next one is. And the fact that it has gone on for over a year indicates its success.

There are a variety of resources here that we have developed during earlier attempts of developing communities of practice. And you're welcome to take a look at them, as well as other resources on communities of practice. I think that there are differing opinions about communities of practice, but I wanted to try to illuminate what are the factors that made this one so successful.

So our leader of our social media community of practice is Jean Wnuk. And she helped identify these components here. So one thing is that the topics are driven by the attendees. So at each meeting, we poll everyone what topics are they interested in. So from the get go, these are topics that are identified by the people who are participating.

And then the actual content and structure of the monthly meetings will vary. So some have guest speakers on a specific topic. So in one case, we had speakers from the National Library of Medicine come to speak. We've had other speakers on LinkedIn and other, again, topics that were identified by the individuals.

And with pre-planned topics of learning, there is an opportunity for people to share what they do and the questions that they have. There is a real attempt to make this a very complete non-judgment zone.

People bring their struggles, their questions. And it's an opportunity for others to say, this is what I've tried, and this is what's been successful, what hasn't. And it becomes an enjoyable learning community for everyone.

We also have these Ask Me Anything open meetings, which tend to be community building. We have now sort of a core of a number of people who attend each month. And that forms the basis of the community of practice.

People know each other. They're relaxed. It is seen as additive to people's lives and not a drain. It tends to take place during lunch hours, so it is a relaxed and informal gathering.

We do do go-arounds to share particular practice. So one example was what social media platforms are people using. And so people will go and say one by one, this is the platform that I've used. This is its advantages and disadvantages. This is how much it cost. And so people are getting very hands-on direct skills and learning that they can apply to their own knowledge translation efforts.

OK. So one more aspect of what CeKTER is doing is we're trying to make real co-production in terms of our dissemination. And I'll say it again that in this case, our end users are grantees, not actually people with disabilities. So we are working with grantees to help them to translate their research into products that will be impactful for their end users.

So this is one example. This was developed with Temple University Collaborative, a NIDILRR-funded RRTC. And they were examining what are welcoming places for-- welcoming employment places for people with disabilities.

And through their research, one of the things that was uncovered was that individuals with disabilities need to have the cognitive demand managed. It didn't work for an individual with a disability to come into a workplace and they're given, OK, these are the 10 things that you need to do. And here's the instructions. And see you. It's too much at once and will lead to an unsuccessful employment outcome.

However, when cognitive demand is managed-- and that means that the employer can be more systematic and present things one at a time, allow the individual to learn a whole task before going on to a new task, that that's a more successful and more welcoming work environment. And so that was the research. And we worked collaboratively with Temple to create the product.

And the product in this case was a comic that you see there. And we've developed some expertise in developing graphic medicine, as it's called, and affectionately also called comics to convey in a very engaging way both with employers and people with disabilities about how to manage cognitive demand in the workplace. So this is one product that's on our website. So end users were involved in translating the knowledge that they had gained in Temple University, in this case, into usable, actionable information that people can use.

OK. And now I'm going to convey a little bit of research that CeKTER has done. So we have two research projects, and this is one. As all of you know, you have only so many dissemination dollars. And the

question is is, where should I put those dollars? What is the most effective dissemination modality to reach the audience I'm trying to reach?

And we posed this as a research question. So we asked-- and this is a comparative effectiveness study. Research briefs compared to videos and compared to webinars, how do they compare in terms of participant engagement, duration, knowledge acquisition, and satisfaction?

So what we did was is create three products, a research brief, a video, and a webinar that had virtually identical information. The information was the same. We kept it as closely as possible, so that we were actually testing the difference in the modalities and not in the information that was being presented.

And for the first arm of this study, we recruited 150 employment service providers. And we randomized them into three groups where each group got access to one of these modalities. They were invited to a live webinar.

They were given a link to a video. And then they were also given a link to an electronic research brief. It was a brief that could be downloaded, but it existed on the web. And they needed to click through all the various sections to read through the entire brief.

OK. The 150 people-- just some basic demographics. They were mostly white. They were mostly female. Their education was split basically between a bachelor's or master's degree.

And there was some decent representation between job coaches, supervisors of job coaches, and directors of employment services. And there were no significant differences between groups on these proportions. OK, so here's the big outcome, the big takeaway.

We measured engagement and what percent of the individuals in each modality actually engaged, which means that for the briefs-- they opened up the link to the brief. This is not measuring how much of it they read, but they bothered. They bothered to open the link.

Same. They bothered to open the video. And then for the webinar, they actually came on to the live webinar. And as you can see, the winner is the research brief. 83% of the individuals in that group opened the brief. And that was statistically significant compared to those in the webinar, where only 40% of the individuals assigned to the webinar group came to the webinar. And videos were sort of in the middle, but still statistically significantly different from the webinar, where 64% of those assigned to the video actually opened the video.

So this was surprising to me. And more surprising was that there were no significant differences in engagement in the modality by education, level, by race, by age, or job role. So there just weren't any differences that I could hang my hat on. Again, if you want to reach employment service providers, it looks like the best way to do that is with a research brief, despite the fact that they were also female and young.

OK. So next, we asked about duration of engagement. How long did they stick with it? We actually measured it. In terms of the webinar, that was easy because we knew how long it was that people stayed on the webinar until they jumped off.

The video, we had a certain kind of software that also measured how long people stayed with the video. The actual video was pretty long. It was seven to eight minutes. And we were able to calculate the proportion of time that they spent with the video compared to the webinar and compared to the brief.

As you can see, there are not large differences. On average, the video-- people stuck with the videos more than they did other modalities. For the most part, there were no significant differences in how long they stuck with it by education, level, age, or job role, however, we did see that there was a significant difference that white people tended to have higher engagement percentages than non-white people only in the video modality.

OK. So those were the big findings. And then we also asked about what modality would you most likely use to learn new information. And despite the fact that everybody-- that the highest engagement was with research briefs, that didn't come out too well when we just asked straight forward about their inclination.

People tended to want in-person trainings or virtual trainings. So the difference between 45, 44, and 43% is not great. So these three highest ones was in-person training, virtual training, and people like videos. And this is what they told us. But our research was empirical evidence of what people actually opened and looked at versus what they told us what they would like.

Curiously, podcasts is way down at the bottom at 6%. As a center, we are investing in podcasts. We think that that is the modality of the present and the future. But this is not what these employment service providers are telling us.

OK, so that's the end of my presentation. I see that there's some questions. And I just want to put a shout out to CeKTER.

Here is our website. You can join. We have a newsletter and learn the latest in employment research. And we are certainly available for technical assistance. If you want to figure out how to use your social media or get our two cents on developing a video, we'd be glad to share what we have.

I do see Roberto's question. Can you post the link to the reference? So I can't do that right now, but am going to send it to-- our references to Kathleen. And I'm sure she can disseminate it to everyone.

KATHLEEN MURPHY: And sorry, Roberto. What is the specific reference you're looking for?

MARSHA ELLISON: I did mention, too, there was complexity theory and then the Knowledge-to-Action Framework.

KATHLEEN MURPHY: Yeah, that's why I'm asking. Yeah. I think it's the paper citation-- the last paper on the final slides.

MARSHA ELLISON: Last paper on the final slide. Let's see.

[INTERPOSING VOICES]

MARSHA ELLISON: OK. We will figure it out. I think it's Kitson on the complexity theory, maybe.

KATHLEEN: Yeah. Roberto, if you scroll up, that's there already.

MARSHA ELLISON: But we will--

[INTERPOSING VOICES]

KATHLEEN MURPHY: Yeah. So I think maybe, Marsha, if people want that, perhaps, someone on your staff, they could contact them.

[INTERPOSING VOICES]

KATHLEEN MURPHY: OK. I think he's been doing a very good job. So there is an info email. Is that right?

MARSHA ELLISON: Yeah.

KATHLEEN MURPHY: Info@cektek.org. So I would suggest that, Roberto, maybe get that directly from you because I don't want it to fall between the cracks. So thanks so much. It's a great way to close out our day too.

Yes. There were some questions. So Bonnie Zink was wondering. And you actually did a KT intervention. I think it's not that often that we have presentations where someone is reporting on an evaluation of a KT strategy. So that was fantastic to have as part of the conference programming.

So that did present one way of measuring KT. So did you have any-- because this is such an enduring topic of interest. Did you have any other specific questions? She said, do you have any advice on measuring impact? It was pretty broad.

MARSHA ELLISON: I mean, we're in the same boat as everybody. The easy things that you pick up, downloads, views-- and we, of course, collect-- we do surveys of our technical assistance with very poor response rates. I don't think this is news for anybody.

And like all other NIDILRR grantees, if we see that our research is being picked up and used in any kind of way by legislators and county people or it's being used in policy making in any kind of way, that's, of course, great. So these are-- you might call it qualitative or anecdotal, but meaningful ways that we keep-- and I'm sure many of you do as well. We keep an impact log. If we get an email, if we get an indication that this has been-- we do count shares of our posts and whether those have been shared again, so those are all useful information.

But I think at the end of the day, honestly-- and use means implementation. And that means that the innovation that you've come up with is translated into practice and into behavior change. And honestly, I think that takes long-term measurement.

And maybe in a five-year RRTC, you can start knowing that you want to measure that kind of impact, and it's going to take five years to see it. So you do that kind of planning from the beginning, knowing that you're going to try to actually move this into practice and see a change at the end. Another thing that has been taught to me is try to figure it out from the beginning.

So try to understand what it is that you want to impact. And if you have that as you're going forward with your knowledge translation, your knowledge translation is more targeted. And you have a better capacity to measure it. It's an ongoing thing.

KATHLEEN MURPHY: So Bonnie's saying that's helpful. The impact log would be valuable. Agree with long-term. Maybe that's why it's difficult.

And another interesting-- it's just more of an observation, but about your study is you were measuring not just what people said that they wanted, but what they actually indicated that they wanted by their use. So this is Selima, often people's preferences don't match their behaviors.

But piggybacking on the comment you said about that sometimes what you learn, you tailor it even more, I do think it would be helpful for our audience to understand which of your resources-- because you're the NIDILRR funder. It's the same funder as the center on KTDRR, which funds five KT centers. The center on KTDRR supports all of the grantees' KT needs. And then there are four others that support specific portfolios that NIDILRR funds.

And CeKTER supports the employment researchers. So that's why when you saw Dee putting in the co-production, you have to be a NIDILRR grantee and the employment portfolio to get that support from CeKTER. So given that most of the people here, Marsha, are not NIDILRR grantees-- well, two things. Could you talk first about how do you tailor your training and TA to employment grantees?

MARSHA ELLISON: Well, honestly, it's a bit of a challenge because as you well know, Kathleen, the issues are trans disability group or even trans service model. So if you're trying to figure out how to do social media, it doesn't depend on employment, per se, versus community participation or health and function, really. It's just it's strategies that are independent of the content.

So as you know, Kathleen, we have teamed up together from time to time to try to present materials, present help to grantees that don't depend on what is their domain within NIDILRR. But that said, we do narrow in on the employment research. So I failed to mention this in my presentation that the research that we did-- I'm actually going to go back and show that to people.

So what we did here, we selected the job coach and an electronic job coach app that was developed by Createability. And Createability received two SBIR NIDILRR funds to develop this app. And so we did canvas our advisory council for different kinds of NIDILRR employment research to feature in this study.

And we selected this one. It's great. It was a great app. And these three products that we developed, the brief, the video, and the webinar was done as co-production hand in hand with Steve Sutter at Createability. And we used their research. We used their images. We used the findings that they had in the course of preparing these videos. Yeah. So sometimes it's just the content is different, but I don't think that the processes and the structures are all that different.

KATHLEEN MURPHY: Right. So that's why it's so great. I do lead a community of practice for all the KT Center PIs. And Marsha has been a great participant in that because we do find that there are synergies, and we can co-produce things, and really make sure that we're leveraging and not being redundant. So I love when that happens.

So there is a question. Rusman Ismail is on the center on KTDR's expert review panel, so thank you for coming. She says Canada's research funding agency, Canadian Institutes of Health Research, is moving away from the term, knowledge translation to knowledge mobilization as an emphasis on researchers engaging in meaningful priority setting and co-production, as your presentation illustrates, with diverse communities of knowledge users and holders to ensure that research is responding to pressing needs. So it's interesting, given you were talking about how long it takes. So she just wants to know what your thoughts are on that shift from KT to knowledge mobilization and what it implies.

MARSHA ELLISON: So Canada is always ahead of the US. And we just follow in your coattails here. So I like the term, knowledge mobilization. I think that-- I mean, it's a very action-oriented kind of word as opposed to translation. It's really bringing together knowledge for the purposes of impact, so I rather like it. But perhaps, she has more to say about that.

KATHLEEN MURPHY: She says thanks so much for saying Canada is ahead of the US in this area. I think we all know that. The term itself right came from the Canadian Institutes for Health Research and Ian Graham's work.

MARSHA ELLISON: Bonnie's last comment, I think that that's right that knowledge translation suggests more one way, whereas, mobilization suggests more two-way development.

KATHLEEN MURPHY: And I think it also implies more of a collective production of knowledge, not just something coming out of one research team or some of what we've been talking about earlier that not all knowledge is produced by scientists.

Someone has to leave early. Oh. Thanks. Bonnie says she likes collective. We have another actual question from Roberto Sandoval. Is a name change all that suffices to improve metric collection and analysis? I think-- comments. But Marsha, this is your show.

MARSHA ELLISON: Well, obviously not Yes so knowledge translation by any other name might not be knowledge translation, so we'll see. But yes, I do think that we have to move towards implementation science and the metrics that implementation science uses for adoption and use. And I think that will give us more traction. And it'll be useful for NIDILRR to be able to demonstrate. We have not only created this

knowledge, but we've affected change in these ways and for service providers and for people with disabilities.

KATHLEEN MURPHY: So I think this is a great way to end today. Again, I always have other thoughts, but know it's not my presentation. I'm just trying to let people engage with you. I'm going to pass the mic back to Ashley, who's going to wrap us up and give a little plug for our evaluation. Thank you.

ASHLEY CLARK-PURNELL: Thank you so much, Dr. Allison. And please convey our sympathies to Marianne. She was much missed.

MARSHA ELLISON: I will do so.