**Knowledge Brokering as an Evidence-Based Strategy**

*Presenter:*

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MAUREEN DOBBINS: Thank you so much, thank you to the organizers for the invitation to be here today. I'm going to have my phone up here to keep myself on track with time and glasses, so I can see some notes I made for myself. Interestingly, when I was younger, I used to love being able to say I've been doing this for 10 years or 15 years. And now when I hear things like 20 years or longer, now that makes me feel old. I need to take all of those times out of any of my resume stuff.

But, it's my pleasure to be here today to talk to you about, I guess the journey that I've been on and in part, what I've learned about knowledge translation and about knowledge brokering over the past number of years. I guess one of the titles I could have given for myself is knowledge broker. And that's actually, I think, how I've ended up being here today, is that I think for most of my career, I've been really interested in helping who I was as a public health nurse.

When I started public health nursing 30 years ago, right about now, I went into public health nursing with a nursing degree and I had the good fortune to go to McMaster University. One of the things I learned about in my program at McMaster was how to critically appraise research evidence and how to think about using that in my practice. That was very much a part of my program. And, in fact, one of my lifelong mentors who continues to work with me and mentor me today, Dr. Donna Ciliska, actually taught me that course in third-year university and we continue to work together in this work in knowledge brokering and evidence-informed decision making (EIDM) and public health.

But I went into practice as a public health nurse, understanding the importance of using lots of different kinds of evidence, one piece of which, one component of which, is research evidence, having some skill in terms of being able to tell the difference between research that's good enough to inform our practice. But I struggled as a public health nurse in how to make time out of my really busy day-to-day work to incorporate looking, taking the time to look at the evidence.

I also had the good fortune of starting working at a public health unit in Hamilton, just down the road from McMaster University, that had a culture of wanting the staff to use evidence in our practice. And even within that, it was still really challenging to find the time to say, well, should I spend some time reading these articles or would I be out there working with my clients? Because that's really what seemed to be the most important thing for me to be doing.

Sometimes what I would end up doing is taking that research home and trying to make time to do that reading at home and think about how to apply it. But found that I wasn't very effective at being able to do that either, carving out that time regularly at home. I think that's where a lot of my ideas started to come from as I moved into graduate school and started exploring what was involved in evidence-informed decision making, which is a term we use in Canada.

What has driven me for the last many years is how can I make life better for that person I was as a public health nurse, who was really keen to use the research evidence, who wanted to not just do practice because that's the way we've always done it. So to want to know what we were offering was the most effective practice, but struggling to find the time to do it. My work as a researcher has been how do we figure out what I would have needed back then? How do we work collaboratively with public health to develop resources and tools that will be useful so that that would have been easier for me to do.

While I was really lucky, I finished my PhD just as we created an organization in Canada called the Canadian Institutes for Health Research, which was created with a mandate from the federal government to demonstrate how the money being invested in health research in Canada was actually changing healthcare and patient and population outcomes. This organization was being created at the time I finished my PhD and there was a whole new set of money set aside for research in what we call in Canada knowledge translation, similar terms in the U.S. are dissemination and implementation. And then a few years into that, there was also the term, knowledge brokering, that evolved.

I'm going to talk about that research and the center I've had the pleasure of running for the last several years, which is less about doing research and more about supporting public health to use research. So really, we're acting as knowledge translators and knowledge brokers to help a sector, public health in Canada, to use the best available evidence. I'm going to talk for about 45 minutes and definitely want to leave some time for questions at the end.

So, we're going to start talking about a question that Kathleen just asked, what is knowledge brokering? There are many different things that it can be. What does the science say about knowledge brokering? I'm going to talk about the term we use in Canada called evidence-informed decision making and the model that guides the work that we do. We've also been looking to theories around stages of change to help us as an organization identify what we're doing and better capture for our funder, the public health agency of Canada, what their return on investment is in funding us right now for 12 years and eight more to come starting next April.

So, we constantly are being asked to justify what are you doing with the money we give you? And how do we know that it's actually making a difference in public health? And at the same time, I'm trying to think about how this is relevant to the area that you work in. I think there's a lot of similarities in terms of , while I focus on trying to change practitioner behaviors among the public health workforce, the public health workforce that I work with are trying to change health behaviors of their clients, primarily marginalized populations in Canada.

One of the things I learned along the way, my training as a public health nurse, actually, I didn't know it at the time, but set me up perfectly to be a knowledge broker because working with high-risk families, new mothers and fathers, was what I focused on when I first started nursing. And what we learned when you went to people's homes is you didn't tell anybody what they had to be doing, what they should be doing. You always worked very collaboratively with them to develop a relationship, a partnership, to set mutual goals that you would work on. You were imparting information and supporting and guiding, and learning from them about what their needs are. So, lots of assessment.

I didn't realize at the time that those were the skills that I would need as a knowledge broker and definitely as a researcher who does work in knowledge translation, those are the skills that have supported the work I've done collaboratively with public health and all of the research that I've done has been collaboratively with public health, telling me what they need, helping me to develop the skills and resources. We'll talk about that and finish with some questions.

A little bit about who we are. We're one of six centers funded by the Public Health Agency of Canada. The six NCCs, our name was given to us, probably wouldn't have been what I chose, but what the name implies is that the six centers located from coast-to-coast cover quite a variety of topics. We work together to help build knowledge, skill, and capacity amongst the public workforce in Canada to use the best available evidence, and that's not just research evidence, that's the gamut of the different kinds of evidence that inform public health and population health practices, policies, and programs.

We came out of the SARS epidemic [[severe acute respiratory syndrome, 2003](https://www.canada.ca/content/dam/phac-aspc/migration/phac-aspc/publicat/sars-sras/pdf/exsum-e.pdf)]. If you're not aware, Toronto was an epicenter for a relatively large number of deaths. Of the many inquiries that came out of SARS, it was identified that the public health community really lacked skill and capacity to be able to utilize best available evidence during that crisis. And from that, the Public Health Agency was created as well as then work was put in place to put these centers in place.

You can see here that we are coast-to-coast, not as we would now say coast-to-coast-to-coast, up in the north. We cover the Determinants of Health; Healthy Public Policy. We're a bit fuzzy on Methods and Tools, but that’s methods and tools on knowledge translation. We have one on Infectious Diseases and on the west coast two related to Environmental Health and Aboriginal Health. My mistake, not changing this, but they recently changed their name to Indigenous Health.

Our specific mandate is to enhance evidence-informed public health, both at the practice level programs and policies, as well as to provide leadership and expertise to support the uptake of what works in public health. That's not only what interventions policies or programs work are effective in improving public health and population health outcomes, but also what works in knowledge translation. So, we can be both a support to the public health workforce as well as the other NCCs. I will talk in a few moments about what I mean when I talk about evidence-informed public health or evidence-informed decision making.

We do this in a variety of ways. So, we're actually a pretty small center. We might have eight to ten to 12 full-time staff. We are not that big but we do have a very large geographic area that we need to cover. When we're federally-funded, you need to make sure you're helping everyone in the entire country, which basically means that we can’t physically visit everybody and see everyone. We can't have that one-to-one type of relationship, a face-to-face way as perhaps we would like. so it's really forced us to think about how do we create resources and tools that everyone in the country can access at any time. So, much of what we've created, whether it's around capacity development or networking and outreach, is available online, and Kathleen talked about that.

If you visit us at [nccmt.ca](https://www.nccmt.ca/), everything my center has created is available online in both English and French, and is freely available for anyone to access around the world. We think about how we go about delivering this fairly huge mandate, we really created some specific areas that we wanted to focus on. So, we have some repositories, knowledge repositories that house different kinds of evidence, whether it's on the effectiveness of public health interventions or the effectiveness of different types of knowledge translation interventions. We are engaged in capacity development, face-to-face workshops or online learning modules or our knowledge mentor brokering program, which I'll tell you about later. We’ve also created a variety of videos to help break down some complex statistical concepts, made those available.

And then also really, really importantly, is to connect public health folks from across the country. Our ability to talk to public health professionals who work in Newfoundland at the same time we're talking to those who work in British Columbia. So across five time zones, I think it is seven hours from coast-to-coast, we learned that public health professionals are grappling with the same issues all over the country, and looking to the evidence to help support what they should be doing. And many times, they have the same types of questions.

Our brokering role, when we interact with someone in Newfoundland and find out that someone in British Columbia at the same time is having the same question, we're able to connect them: “Did you know they have the same question? They're looking at this, maybe you should speak together and work on this together.” That's also an important part of what we do, is helping the sectors share their knowledge with each other and developing mechanisms that would allow them to know what others are dealing with and how each of them may be able to help each other.

That's a little bit about what our role as knowledge brokers are. This is just a definition I took from Wikipedia, but interestingly is mimicked in much of the literature that we see, a knowledge broker really, we think about it as an intermediary person. It can be a person or an organization and they aim to develop relationships and networks with, among, and between producers and users of knowledge by providing either linkages, knowledge sources and in some cases, the knowledge itself, such as how to do certain things or tools, to various organizations in in its network. I would say there are multiple definitions of knowledge brokering. This one is a catch-all that really brings all of it into place.

In 2005, we had an organization in Canada called the Canadian Health Services Research Institute and they started writing about knowledge brokering. They really envisioned knowledge brokering as an intermediary person that brought together the knowledge producers and the knowledge users, brought them together to be able to have conversations with each other so that each could talk about what their needs were and then work together in co-developing, let's say, research projects that could answer questions. It’s an interesting definition of the word "broker" because it had this person bringing two different groups together and in essence helping them have conversations with each other. At that time, we believed that the researchers really struggled to understand what decision makers and policymakers needed and wanted, and the same, the policymakers would say I don't really understand, when those researchers start talking, I don't know what they're saying. So it's really helping to bring them together and have meaningful dialogue.

At the same time, I'd been doing some research, trying to support the use of evidence amongst public health professionals. I thought of knowledge brokering a little differently. I thought of it not as bringing the researchers and decision makers together, but actually a person who could say amongst this workforce of public health professionals, where there is already an existing body of research that can be used to inform some decision making around programming, is there an opportunity for a broker to help the public health professionals become more aware of that evidence? And as we got into some of that work, we started to realize there were some limitations in their knowledge and skill and capacity to be able to use that evidence in practice and to apply it to local jurisdictions.

Even back in 2005, we had fairly different definitions about what knowledge brokering could be. I don't think there's a right way to do knowledge brokering, it depends on what context you are in. I always worked collaboratively as this broker to work within public health and then we've done some expansion from there. In the field of public health, knowledge brokers facilitate the appropriate use of the best available research evidence in decision making processes, enhancing both individual and organizational capacity to participate effectively in the decision making process. So that's one way to think about that.

In the session I was in with Kathleen this morning, I was thinking about some of the comments made in that session. I think it's important, and I say all the time to public health professionals when we talk about evidence-informed decision making, EIDM, it's using the best available evidence at the time, knowing that the evidence base is always changing. We can say the same for the knowledge brokering field or the knowledge translation field. My center, Kathleen's center, there's so much to learn as we develop our ideas and implement ideas around knowledge brokering and evaluate them and take that evaluation into consideration. So, thinking that the knowledge base is constantly changing and being reflective about what worked, what didn't work to help inform those next steps both in knowledge brokering and in knowledge translation is really important.

Setting that stage about how we’ve envisioned knowledge brokering. We started to think about what are the activities one would do as a knowledge broker? I'll suggest just some of them here. We could divide them into three; I'm only going to talk about three today: knowledge management, linkage and exchange, and capacity development are the ones that I'm going to focus on.

When we think about knowledge management, what the literature tells us, as knowledge brokers, we identify and obtain relevant information. That also means we need to understand what the needs of the knowledge users are. So, assessment of what would be relevant to them is really important. Facilitating development of analytic and interpretive skills, creating tailored knowledge products for different types of decision makers, even within the same organization, that could be by different disciplines or different levels of decision making. Their project coordinators, they need to support communication and knowledge sharing and monitor the process of implementation.

One thing I talk a little bit about from the public health perspective, and this may be similar in your field as well, is that in public health, people arrive in public health from many different backgrounds. So, while we have a few undergraduate programs in Canada that are public health programs, mostly public health professionals are nurses, dietitians, health promoters, some epidemiologists, some public health inspectors. So, people come to public health with many different undergraduate and graduate degrees and most of the degrees that they come from, very few of them would ever find themselves working in public health. When we think of trying to train the next generation of public health professionals, we can't as a center go and try to impact those educational programs pause it's very, very vast. We usually end up needing to do a lot of this work to facilitate evidence-informed decision making once they're in public health to gain those skills. So, those are some of the knowledge management activities that brokers would do.

They're also heavily involved in linkage and exchange. So they identify, engage and connect with stakeholders; facilitate collaboration; they connect stakeholders to the relevant information sources. When I first, would say I fell into this field a long time ago, it seems like what was a fair comment to say was that there wasn't evidence that answered my question about what was effective in public health. There was a real lack of rigorous studies that really informed what we would do in public health. That's no longer the case for the majority of issues that we face in public health. Now, at the other end extreme, we have too much evidence and we can't keep up with it.

As an example, just when we think about chronic disease prevention, and if we take one topic: promoting physical activity across the life span, we now have well over a thousand reviews of the literature. Not all of them would be systematic reviews, but reviews that evaluate multiple studies, those thousand reviews representing ten to fifteen thousand primary studies. Just keeping up in the field of physical activity, even if you focus that on children, as I've done in certain areas, now we have hundreds of reviews that have compiled evidence on that. Ensuring that stakeholders know that relevant information is there and as it becomes too much, where can they go where some if that might be synthesized. Supporting peer-to-peer learning, this is where knowledge brokering can come in; communication and information sharing and, of course, network development, maintenance and facilitation.

If we think about capacity development, this is where our center spends a fair amount of its time focused. We can think about how do we develop knowledge and skill in defining problems, taking local data, figuring out what those issues are, and then turning that into a focused, answerable question. That actually seems like it shouldn't be that hard. But I work closely with public health professionals and this is actually a really important thing to do and a harder thing to do. And really a good thing to do at a team level, because defining what that problem is and thinking about who's the population we are interested in; what are the interventions we want to know about, our programs; what are we comparing that to; and what are the outcomes that we're really interested in knowing something about? And having a team figure that out you can really see the differences that people have in their minds about these types of questions and really focusing on coming to consensus so whatever work is done to compile the evidence does answer that question.

Developing the capacity about appraising the quality of evidence, we certainly spend a lot of time on that, knowing that many don't enter the field confident in knowing how to do that. It’s still apparent today, there's a wide variety in the quality of evidence that's available. And that's not to say that in appraising it, it is to disregard lower quality evidence, but actually to have a better appreciation of the limitations of research, what impact does that have on how we interpret those results, and if we should have any caution in implementing them.

We design and deliver tailored training sessions, facilitate knowledge dissemination. It's really important to assess readiness and capacity for change and that's at the individual level and also at the organizational level. We do a lot of thinking about who's ready for this. Who's showing signs they want to move forward, understanding that, and working to develop programs and strategies, interventions, starting where people are at, and building on their strengths is really, really important.

I wrote in here “Generate buy-in among stakeholders.” I really don't like the word "buy-in," I never thought that buy-in has a place in terms of evidence-informed decision making, knowledge translation, and with knowledge brokers. If we really are engaging the stakeholders very early on in the process, we don't get their buy-in, they're a part of it. They are wanting to be there because there is an issue they are passionate about that needs to be solved. That is, to me, a much better place to do this work from than actually figuring something out and then trying to get someone to take it up later.

Much to the chagrin of many of my colleagues at McMaster, when I finished my PhD and when this new research institute was started, one of the first things that they changed in research funding in Canada was that you had to write a little paragraph about how you were going to disseminate and promote the uptake of your research when it was done. So I became the go-to person at McMaster that was to help everybody to write that paragraph. And yet, I came from the camp that said, well, if you've done your research really well, you would already have those stakeholders involved in the research, so you wouldn't be getting their buy-in after the fact. Many of them had to go back and think, okay, we didn't have the stakeholders involved at the beginning, what are we going do now?

We’ve learned along the way that we can do all of the training we want with individuals in organizations in public health, but if they don't work in an organization that values the use of evidence in practice and functions in a way that supports the use of evidence, then I started to feel like we might actually be harming people, because we were showing them a different way to practice, but they didn't work somewhere that actually really encouraged that or facilitated that to happen. Now we do both together. We work with organizations that really are committed and see the importance of using evidence at the same time that we then start developing the capacity and the staff. And that, we think, will help with sustaining that organizational engagement.

My first study in knowledge brokering was in the mid-2000s. And one of the things that was interesting at the time when I was recruiting the knowledge broker for my randomized control trial, I was thinking about, well, what would be the characteristics of an effective knowledge broker? And interestingly enough, while we do have a list here of the types of characteristics, we still have a lot to learn about what are those characteristics. Are you born with them? Can you be trained with them? And so some of the ones that we see here someone who has the ability to facilitate networks, they need to be good at problem solving, innovating, the need to be trusted and credible. They need to be clear communicators. They need to understand--in the way that we've envisioned knowledge brokering--they need to understand the culture of both the decision maker and the research world. And even better if they can really feel comfortable going back and forth between the two.

They need skills in being able to find and assess and interpret different kinds of research evidence in different formats. They need to be able to talk about the findings of research in really accessible ways, to many different kinds of audiences. So the way I talk about research to a medical officer of health is not the way I would speak to a director in that same organization, not the same way I would message it to managers and not the same way I would message it to front-line staff. A really efficient knowledge broker will develop ease in their ability to translate evidence in different ways. They need to facilitate, mediate, negotiate, and really think about adult learning principles as well. You need a very special approach to bring people together who have very different ideas about research, about maybe a hierarchy of research. We might bring people together in a room where some think randomized control trials are it, that's the only thing they want to consider, wouldn't consider any type of qualitative research and we need to be able to help them understand, we need all of the evidence we can get our hands on. And it all is important at different times in the decision-making process. We need to think carefully about how we interact and develop collaborative partnerships as people are learning.

I’ve often thought about a term, which is symbiosis. Some of these are very relevant to the term knowledge brokering. For us, in the work we’ve done for years, it’s the mutualism, where both organisms benefit. When we think of some forms of knowledge brokering and certainly in the way we've been doing brokering for the last several years, we are working very closely with public health to help them develop some knowledge and skill and think about how do we do work in a different way? But at the same time, we've learned from the decision makers we've worked with just how the work happens and how the organization functions.

And they've been actually extremely generous in sharing that knowledge with us so that we can develop resources that are actually relevant, feasible, applicable to the different types of settings that folks work in in public health. So I very much think of knowledge brokering as a two-way street, for as much as we've worked with public health to help them with various decisions and capacity development, they've really helped us along the way in terms of understanding what the practice realities are so that the resources we put in place will be useful to them.

In the original knowledge brokering definition I gave you, where it was that intermediary person bringing two people together, that might be more like the second one here, which is where one benefits and the other is unaffected [commensalism]. That could possibly be another way to think about knowledge brokering. And we’d really hope that the latter ones here are not necessarily what we're achieving [parasitism, competition, neutralism]m but to me, I always felt like this idea of symbiosis, some parts of it were really key to knowledge brokering.

I just want to talk a bit about knowledge brokering impact. So, it’s not great news, when we look at the literature right now, I guess there are two key things that jump out of the few reviews that have been published over the last few years. There isn't a lot of research yet on knowledge brokering. And that we need knowledge brokering studies to be happening in many diverse settings, fields, and using different types of methodologies to then synthesize that. So there is a way to bring together the knowledge brokering and studies that I do with public health, with the work that Kathleen's group is doing, we need more studies to help us build our understanding of what is happening in knowledge brokering. The reviews that are out there currently tell us more rigor is need in the primary studies that are being done.

Not to say, that I’m talking about randomized control trials, just whatever the research design is that's being used, is the most rigorous that's appropriate. Many of you who may have read the result of the first knowledge brokering trial I did in the early 2000s, one of the final recommendations I gave in that paper was that we not use a randomized control design to evaluate knowledge brokering. It doesn't fit that type of approach in that I don't think there's any way to randomly allocate organizations that will then have two week old groups, and the way we did knowledge brokering, there was no one single intervention that anyone received in that.

What we do know a bit about in terms of the impact is that there does appear to be a link, I use the word "may" because of the limitations of the existing literature. But there does appear to be a link between what knowledge brokers are doing and an increase in knowledge, skills, and changes in practice behaviors that align with what the best available evidence says. So, there's great promise in knowledge brokering, but we have a lot more work to do to really understand it.

I just want to tell you a little bit more about evidence-informed decision making and this is the model that we use. This was a really helpful model that has been around in Canada for a number of years now; this really gets at the complexity of decision making. In the early days of research dissemination, or knowledge transfer and exchange (so early 2000s), we were talking about just using research evidence and not thinking about all of the other things that go into decision making.

That really isn’t what we are talking about with evidence-informed decision making. This model helps depict that we know in public health, and I would think in your field as well, that decision making is really complex and it's made up of lots of different inputs, one of which is research evidence. Others: community health issues, local context, community and societal political preferences, and the kinds of resources that we have, both financial and at the individual level. It's the public health expertise that helps us gather data in all of these spheres and then think about the local implications and then use that to apply it in what makes sense jurisdictionally. This allow us to think about what we might do. In my own province of Ontario, what we might do in Hamilton, which is in southern Ontario, using the same information in that purple bubble, using the same research information, but when we look at all of the other data collected in the other bubbles, if I'm in northern Ontario, we might make a different decision based on what our local needs are. All of that would still constitute evidence-informed decision making. It’s an incorporation of the research evidence and all of this other evidence to think carefully about what makes sense for our local area, and then to implement that.

I just have a few pictures here, because sometimes it's to think about what does that really mean? I have a few examples that really help talk what about is this thing we call evidence-informed decision making. These are our mountains in Ontario. They're not really mountains, but they used to be mountains. This actually is Killarney Provincial Park, and the reason I put this up there, is when we think about the process of evidence-informed decision making, many of our models that have been developed, particularly in the early years, were depicted (as) very linear decision making processes that had a defined start and stop point. Really, those of you that have been involved in decision making know that decision making isn't linear. It isn’t always rational, doesn’t only go in one direction. So when we think about decision making, it's a bit more like a circular process that brought me to a backpacking trail in Killarney, that is a loop. You can start it in any direction, and it also depicts to get to this vantage point here is a huge amount of work that, in getting there, you usually ask yourself, why did I think this was a good idea -- Why did I want to do this? Then you come and you have a great view and you think, this is totally worth it. This is a little of what EIDM is all about. It is really hard work. There's no right way to do it, but there can be some great gains to be had in putting in that work to achieve it.

It's not the only picture I'm going to show you about EIDM, because in this particular instance, you can do this by yourself or you could do it as a group. You're basically told as you would in similar trails here, make sure you can do it by yourself. You need to be self-sufficient because we're not just going to come in and help you.

That's really not what EIDM is about. I have this one here, this is a summit. This happens to be of Kilimanjaro. But I show you this because this is about a team effort. So to summit Kilimanjaro requires many different people to work together to be able to achieve that goal. That's what we need to achieve evidence-informed decision making.

And this last one here is--it might not seem like it--trust. This is all about trust in that you're out for a nice little walk on a glacier and quickly told that you need to just cross this ladder over a big drop in order to continue on with the rest of your day. And you need to trust that the people setting that up have really done that properly. Trust is important in evidence-informed decision making and in our work. We need to develop trusting relationships with those we want to work with. And, you know, sometimes it can be really difficult to reflect and identify, particularly if you are a manager or a director, what you don't know in order to be able to use evidence in practice. You need to be able to trust who you're working with to use that information carefully.

Something else that guides our work and is now very much in transition. When we first started with this very big open field, what were we going to focus on when we first started doing our capacity development with the National Collaborating Center? We decided there was a model here that is a seven-step process that we could start with and we’ve developed all of our resources actually really aligned to these seven steps. Defining the problem. Finding the relevant evidence efficiently and effectively. Being able to sift through that evidence, to understand its quality. Knowing how to synthesize it. Figuring out how to adapt it to be relevant and applicable to the local setting.

Now, if I want to change practice, how do I go about doing that? Whether I have three staff or 500 staff or 1,000 staff, how do we go about implementing an organizational change to change practice and how do we evaluate? How do we know that we've changed practice and that everybody is doing the new behavior? And if we have changed practice, how do you know we're having that change impact on the health outcome that we were interested in?

But we started with that, I'll go back for a moment; we started with this model. We've been focused on this for quite a bit of time and now we've realized it's time to evolve. This is one small part of the capacity folks need to have and it’s only one small part of decision making. This focuses more on the research evidence, but how do we incorporate the evidence from the other bubbles I was showing you, the local contacts and the societal preferences and the resources. How do we fit that together in a decision making process that an organization may have? So we're embarking on a multiyear program, again, working collaboratively with public health to figure out what changes need to be made to our models that adequately reflect the realities of the practice setting.

In terms of some of the similarities between public health, the VR setting, and knowledge brokering, the idea of changing health professional behavior, that’s what we’re doing, and you have the various professionals that you're working with. How do we go about changing behavior, particularly when everybody is really, really busy, how do we promote that? Changing our clients' behavior with the idea that that's what's driving the different outcomes we're looking for, and then the context and the culture. We've had a few things that have helped us out in Canada in terms of both at the national level and some of the provinces where the expectation to demonstrate the use of evidence in practice is very up front and center. It's been written into a number of standards for public health practice; the onus is on public health professionals to demonstrate that they are, in fact, practicing in an evidence-informed way. That's really driving the culture and the context of the public health setting to be changing, to then be really ready for moving in this direction. So looking for those kinds of drivers is really important.

I’ll talk a little more about where do practitioners fit in. I use that word lightly so we could put counselors in here, we could say the workforce. But specifically, what's the call to action for the front line folks in terms of how can I as one person have an impact in my organization and evidence-informed decision making? We can always be questioning practice. If we’ve been doing the same thing for several years maybe we should think is there anything, how do I know this is still the best thing we should be doing because the knowledge is constantly changing.

We need to be critical consumers of everything that passes by our devices, our screens because a fair amount of it perhaps isn't something that should greatly influence our thinking. I need to have new knowledge, I need to be constantly developing new skills. How can I be involved in program decisions? Can I have any impact on organizational structure? And where we've been working a bit more, is in influencing and motivating our peers.

I'll go through these quickly as I’m running out of time. As knowledge brokers, we experience lots of reactions and some of these, I'm sure, will resonate with you. This one here is the where everyone has their head down, hoping that if we keep our heads down long enough, this will all go away and everything will go back to normal. We have to know how to deal with that. Or other times people are quite openly resistant and want to push us back and we need to have strategies with how to deal with that. Or, people that are really, really onboard and are wanting to get going really, really quickly--that might even be a little uncomfortable for us.

One of the things we've done in terms of thinking about how do we are using a theory of change, we have really thought about our work in four ways where we are developing products that we think will help the workforce develop new skills. That moves towards public health professionals then seeing us as the go-to place to access that information and we start to see use of those so that the actual accessing of the resources that will help build capacity. We then start to see a need to actively measure whether or not health professionals are engaging in what we call the EIDM behaviors and then seeing if we see a change in practice. That's how we've started to think about of all of the data that we collect, when we try to pull it all together to tell a convincing story to our funder that we're making an impact, this is the type of approach that we've looked at.

I want to finish with a couple of examples. We did what was called a Partnership for Health System Improvement study a few years ago. This funding competition required me to have as a co-primary investigator with me; decision makers. As a researcher, I needed to have an equal counterpart who came from the public health community. I actually had three medical officers of health who partnered with me as primary investigators and they also had to provide 30% of the funding to do the research in order for me to be able to apply for the program.

We wanted to know the impact a tailored knowledge brokering intervention would have on knowledge, capacity and behavior for EIDM, and also what factors would facilitate it. We worked intensively with three public health units in Ontario and we developed three different interventions based on the needs of that organization. We spent a lot of time really assessing what those organizations needed and wanted. With the way funding cycles go, it was over a year from developing the grant, to receiving the money, to being ready to implement. And by then, the organizations had changed what their needs were and we needed to respond to that and change what the intervention would be, which we were able to do.

With all of them, we did a lot of capacity development. Many of them were involved in doing their own rapid synthesis of the evidence. We did large scale training, we did lots of interaction with senior management so it was a very mixed type of intervention. Just a little bit about what we found was that just attending large group training sessions was not effective in changing behaviors related to EIDM. Those who worked significantly over a prolonged period of time with the knowledge broker definitely showed significant improvements in their evidence-informed decision making behavior as well as in their knowledge and skill related to the tasks of evidence-informed behavior.

There were lots of things that were important around supporting the contextual factors. Certainly, the knowledge broker being embedded within the organization was important and having knowledge and skill and rapport with the workforce. In all of the organizations, evidence-informed decision making was a priority. Where there was the most senior leadership support and modelling of the behavior, we tended to see the biggest gains.

As always, things that can get in the way: time, competing priorities, lots of anxiety and uncertainty about what were the expectations for staff to engage in this. Whenever we could get senior management to be clarifying, clearly what the expectations were, this was definitely helpful. The library services could sometimes work in a way that was opposite to what we were trying to promote so that was really important to address. Then, of course, everyone has different definitions of what evidence-informed decision making is, so coming to some consensus on what that was.

This helped us to think about, we needed to be working with organizations at the same time that we were developing capacity in individuals, that we needed this to be a team effort. You don't just train one or two people, it needed to be many people and that you needed to be thinking about where did this fit in the broader mandate of that organization.

I'm going to skip over this. This is what we are currently doing as a knowledge brokering mentor program. We’ve taken the results of that study and really used that to inform a program that we now deliver across the country. If I just go back so far, we’ve had ten organizations across two cohorts participate in this program and we’ve worked intensively with organizations over about two years of time to develop, again, individual capacity as well as organizational mechanisms and processes. I'll just talk a little bit about what we've seen as some findings. Again, our assessments are showing that we are seeing improvements in knowledge and skill in the tasks associated with knowledge translation. And you'll have these slides, this is really just for some reading afterwards.

In the qualitative analysis that we've done, people talk about how this has helped them really think about doing their work in a very different way and how useful they found it in terms of their thinking. When we’ve divided it into some of the key tasks, it's about finding evidence in a different way. They feel more confident, they feel more confident in their ability to appraise evidence, they have a better understanding and confidence in using different kinds of evidence and even in producing evidence themselves and in tailoring that to the populations that they speak with.

So, in closing, knowledge brokering seems to hold promise in a variety of settings. We still have much to learn about the role and about the personality characteristics and about how to train knowledge brokers to be knowledge brokers, as well as on capacity development. And I'll stop there. Thank you. (Applause.)