Rob: Dr. Shepherd-Banigan, can I turn things over to you?

Shepherd-Banigan: Yes, thanks so much, Rob. Well, thanks everyone, for being here this afternoon or this morning based on where you're located. I’m going to be talking a little bit about the first phase of my Career Development Award research. I’m halfway through; I’m an investigator at the ADAPT HSR&D COIN at the Durham VA Healthcare System, and the title of my presentation is Individual and Family-Level Drivers of Veteran Engagement in Psychotherapy for Post-Traumatic Stress: a Mixed Methods Study.

So, we are going to start off with a couple of poll questions--I’ve got three--just for me to kind of get a sense of who the audience is. So, what is your primary role in VA? Are you a student, trainee, or fellow, a clinician, a researcher, an administrator, manager, or policymaker, or other? So, please submit your responses.

Rob: That poll is open and people are making their choices. Usually starts off a little bit slow, but things speed up, so we'll give people a few more moments to make their choices, if that's okay with you, Dr. Shepherd-Banigan.

Shepherd-Banigan: Yes, that's fine.

Rob: So, it does look like things have slowed down significantly. I see things trickling in a little bit, it looks like people have made their choices, so I’m going to go ahead and close the poll and share out the results, and then I’ll read them off to you.

So, the answers to the question, "What is your primary role in VA?" 8 percent answered A, student trainee or fellow; another 8 percent answered clinician; a whopping 62 percent answered C, researcher; another 8 percent answered D, administrator manager or policymaker; and another 8 percent answered E, other, those 8 percents are probably one person each.

Shall we move on to the next poll?

Shepherd-Banigan: Yes, please. So, the next question is do you work with veterans and their loved ones? And that's defined as family members, friends, other relatives, anyone that the veteran relies on in their life.

Rob: And this one is open and people are making their choices very quickly. I think that about does it, so I’ll go ahead and close the poll, and share the results. And what we have is that 71 percent answered A, yes; and 21 percent B, no. I guess the difference there is people that didn't make a choice and didn't answer.

Shepherd-Banigan: Alright. And then the last poll question is how are you involved in this work? And I’m assuming that if you answered no to No. 2, that you'd answer neither to No. 3; but just interested in whether people work clinically or they do research, and recognizing that probably, there's a lot of folks who do both; and clearly, there's some that do neither.

Rob: And that poll is open. It looks like it's taking a little bit more time for people to navigate through the answers and choose theirs, so we'll leave it open for a few more moments. It does look like things have stopped, people who are going to answer, I think, have. So, I’m going to go ahead and close this poll. We're waiting for one participant to submit here and share the results. And we have 13 percent answered, A, I work clinically with veterans and their loved ones; 50 percent answered B, "I am involved in research with veterans and their loved ones." Only six percent answered C, "I do both,"; and 19 percent answered D, "Neither."

And that's it for polls.

Shepherd-Banigan: Great. Thanks so much, Rob. As you all probably guessed from both the title and the poll questions, this is a presentation that is really focused on thinking about how to get family members activated to support veterans, specifically veterans with PTSD. So, 23 percent of OEF/OIF veterans have a PTSD diagnosis; as those working in VA probably know, PTSD is a disabling and a chronic condition; it has negative impacts on social relationships and occupational functioning; it's also related to physical comorbidities including dementia and cardiovascular disease; and it is a risk factor for suicide.

In the past 15 years, the VA has rolled out effective therapies across the VA. However, there's really low use of these effective therapies; a recent study by Maguen and colleagues found that only 22 percent of veterans who are diagnosed with PTSD have engaged at all in these therapies, whereas 9 percent who did engage received what was called an adequate dose. So, this really represents low uptake and is the clinical gap that we're focused on or that I’m focused on for the CDA research.

And one of the things that we're really interested in thinking about are creative solutions for how to get veterans engaged; and so the purpose of my CDA research is to intervene on family determinants of treatment engagement. We know that positive and empathetic family interactions may increase feelings of safety for individuals with PTSD and enhance a veteran's willingness to engage in treatment, and reinforce treatment gains. Furthermore, family member engagement in the health system and knowledge of treatment options improves healthcare-seeking behavior for veterans with PTSD. Finally, contact between the family and providers is associated with early treatment commitment on behalf of veterans, so there's really a lot of reasons to think about how family could be important, or family, or loved ones more generally can be important in helping to increase uptake for veterans with PTSD.

So, the purpose of my CDA research is to adapt a family-involved adjunct intervention to improve veteran and family treatment attitudes, knowledge, and expectations about treatment; and the family involved adjunct intervention that we're adapting is REORDER, which was developed by Lisa Dixon, Shirley Glynn, and their colleagues.

So, my full CDA research is based on a conceptual model that was adapted from the Andersen behavioral model of health service use. Andersen and his colleagues posit that there's multiple levels that influence a patient's propensity to use healthcare: these include external environmental characteristics. And so, for the purposes of this study, we conceptualize those as VA-level characteristics that might include the supply of these mental health services, provider attitudes, clinic characteristics, attributes of treatment, and then other organizational policies, priorities, and resources.

The quintessential Andersen determinants at the patient or the individual level are predisposing characteristics enabling resources and need factors; we've adapted this to think about this at both the veteran and the family level, so we're calling these veteran and family determinants; the predisposing characteristics apply to both the veteran and their loved ones, and include things such as gender, age, race, ethnicity, education, and beliefs in the efficacy of the treatment.

We think about enabling resources or resources that help individuals engage with health care; and traditionally, those have been things like health care insurance that's less relevant in the VA system, though it's still somewhat relevant. And we, for the study, conceptualize enabling resources as economic and social resources.

So, an example of economic enabling resources could be financial resources, including perceived financial strain. Social resources that we look at include marital status, care of the veteran by a family member, family member health and well-being, and institutional or VA support for that family member.

Finally, need factors encompass the need for medical care, and so those include other comorbidities, both mental and physical health comorbidities. We look at the Nosos Risk Score in this, which is a risk score that predicts the amount of healthcare quantified in costs that a veteran uses compared to the average veteran or VA patient; we look at number of prescription refills for PTSD and then prior health service use; and we use all of these things to try to understand what are the factors that are associated with initiation or an adequate dose of PTSD therapy.

And so, I should mention that while the focus of my CDA research is generally on these EBPs or evidence-based practices, including cognitive processing therapy and prolonged exposure, this, for the first part, I actually was not able to focus on those specific therapies and so we talked generally about mental health therapy for PTSD, so those are the outcomes that we're looking at.

So, I will be presenting today, the research from the first phase of my CDA research which really was used to build knowledge to help us understand how to adapt the REORDER intervention. We applied a mixed-methods approach to help us understand how to modify the content, the content for the target population which is veterans with PTSD, and how to address certain barriers, and this is all going into the intervention, to adapting the intervention. I’ll talk a little bit about that later, but most of this is actually going to focus on the mixed-methods results.

So, the overall research question for this formative research, this first phase of the CDA, is which veteran and family level determinants most influence veteran use of PTSD psychotherapy and why. As I’ve mentioned, I’m applying a mixed-methods approach, specifically using a convergent mixed methods design where we have a quantitative study and a qualitative study. So, what we did is we analyzed, we conducted the quantitative study and the qualitative study separately, we analyzed the results, and then we merged those results once they had been analyzed along the constructs of our conceptual model which, as you may recall, is the adaptation of the Andersen model.

And from this, we got meta inferences which are inferences that are above those of just the quantitative and the qualitative findings, but really use the integration of the data across these two studies to give us a more complex and nuanced understanding of what are the predictors of veteran engagement in PTSD therapy. There's a lot of work out there that has looked at this; to our knowledge, this is the first mixed-methods approach that has done this, and then we have a very intentional focus on understanding family perspectives and incorporating those to give us a better understanding of the context within which the veteran lives and how those contextual factors really influence their decisions to engage in therapy for PTSD.

So, I’m going to pause for a second. There are three different research questions on here; I’m going to come back to them as I’m going to explain each part of this study. So, I just want to let you know that we will come back to each of these research questions.

First, I just wanted to give you another general overview of this mix methods design and what we did for sampling data and analysis for each of the two studies. So, for the quantitative study, our sample included veterans with PTSD and their support partners who were enrolled in the Caregiver Support Program; and by this, I mean the program of comprehensive assistance for family caregivers, and this is the program that the VA, under the Caregiver Support Program, the VA offers two different options based on eligibility criteria; and this is the program that first was targeted at OEF/OIF veterans and has now been expanded to Vietnam-era veterans, and this part of the services under offered under PCAFC is a stipend. But when I talk about the Caregiver Support Program, I will say "CSP" for simplicity, but I’m actually referring to the comprehensive program.

So, our data came from three quantitative sources, health records, surveys, and the administrative data from the Caregiver Support Program and we used machine learning to analyze that quantitative data, because we were really interested in generating knowledge about which predictors were most important to veteran initiation and completion of an adequate dose.

For the qualitative study, we had a parallel sample, so it was a fairly similar sample, but it wasn't the same. Key differences are that these veterans had been referred for PTSD therapy and their support partners had applied to the Caregiver Support Program, but had not necessarily enrolled. We collected primary data through semi-structured qualitative interviews; we interviewed veterans and their support partners separately, and we conducted a rapid analysis of themes. So, this is the overall structure of the two studies and kind of how they lined up across these key aspects of the study design.

So, now, I’m going to move on to give a little bit more depth about the quantitative study. So, our quantitative research question was which predisposing, enabling, or need factors are the most influential drivers of PTSD therapy initiation and completion of an adequate dose? And we know a little bit about--we know quite a lot; there's a lot of information that talks about drivers of veteran engagement and therapy, but we don't necessarily know how these factors are ranked or which categories they represented, which are most important, and so we were really interested, again, in generating knowledge about which of these factors were most important to help us intervene on those factors that were most important.

So, again, our sample was OEF/OIF veterans with a PTSD diagnosis whose family caregivers had enrolled in the Caregiver Support Program between May 1, 2011 and September 1, 2015. So, this was the first cohort of OEF/OIF veterans who had enrolled in this new comprehensive program.

Additionally, people in our sample had a family member who completed a survey that we fielded too, that our center fielded to evaluate the Caregiver Support Program rollout in September or October of 2015. So, our sample size was about 1230 people.

Our data include VA health record data and from that, we got veteran demographics, medical diagnoses, baseline health service use--this is also where we assess the outcomes; our Nosos risk score came from this health record data and then use of pharmacy refills.

The surveys that the support partners completed included support partner demographics, their own distress and burden, relationship satisfaction, measures of financial strain, and support partner reports of the veterans’ health status.

Finally, we had administrative data from the Caregiver Support Program that helped us to link family members to the veteran, told us how the family member and the veterans were related, and then gave us key application dates to the program. Just to be clear, we did not have data about key organizational level factors such as provider attitudes, clinic factors, or treatment type in this administrative data set. So, for the quantitative study, we only focused on predisposing need and enabling risk factors.

I’d mentioned that we used a machine learning approach and I’ll go into that a little bit more in a bit. The reason that we did that is because, again, there's really not a lot of theory about which variables are the most important among those that are important, and so the machine learning models allowed us to answer that question.

So, our outcomes included initiation of a PTSD-related mental health therapy visit; all of our mental health therapy visit outcomes were defined by CPT codes and an accompanying provider classification code, these outcomes were informed both by the work of Dr. Maguen and Dr. Spoont, and their colleagues.

So, initiation of a PTSD-related mental health therapy visit included two qualifying visits that occurred on different days 21 days apart; and the reason that we wanted to define it as two visits was because we wanted to make sure that we weren't counting an evaluation visit as something that was engaging in care; we wanted to be fairly sure that folks were actually engaged.

This definition is somewhat narrow, so it is possible that there are people who didn't did engage, but maybe they were 25 days apart, they were 30 days apart, but we also wanted to make sure we weren't capturing case management visits.

An adequate dose was defined as eight qualifying visits occurring within 180 days; and our outcomes period was between December 2015 and September 2017. So, we followed people to assess these outcomes for close to two years.

Which leads me to my study timeline. I think it can be really confusing sometimes, with these retrospective cohort studies, to understand when things were assessed. So, what we did is we took--we had baseline variables from CSP administrative data and health records, and we assessed these data one year prior to the survey. The survey was rolled out in September and October 2015. So, our baseline data essentially came from October--from September 2014 to October 2015.

Given that some people might have enrolled in the program in August, we wanted to give them a couple of months just to kind of get in the program, so we started the assessment outcome in December 2015 and followed people to see if they met our outcomes of interest until September 2017.

So, we used a random forests machine learning approach; and one of the really interesting things that machine learning helps to do is they allow us to identify patterns in the data that are really difficult for an analyst to do. So, oftentimes, you're working with a lot of variables, you can work with small or big samples, but there's a lot of variables; and we had 55 predictors in our model among all those three categories, the predisposing, enabling, and need factors, that we were interested in seeing how important they were. We also use machine learning when there's no a priori theory or really prior work in an area or an area is exploratory; and again, because we didn't have any hypotheses about actually which variables were the most important relatively, we also wanted to just apply this exploratory approach.

So, a random forest is a decision-tree algorithm that draws repeated trees to identify the strongest drivers of an outcome. So, I’m going to show you what that looks like. So, this is actually a decision tree from our study, and what this is is basically all 55 variables were put into this model, and the model identified that ED visit was somewhat predictive of people's likelihood of having used therapy; and then he did visits then also split on having a conjoin or a marital therapy visit in the past 12 months, and that was sort of another important split in terms of how to categorize whether people were likely to have received a visit or not. So, that is a decision tree.

What a random forest does is it repeatedly samples a subset of the data and it draws multiple trees, so these are all the same decision trees, but in real life, these would not look the same, it just draws a whole bunch of trees; and then it averages the results across all the trees to produce a random forest plot that I will also show you.

So, this is a variable importance plot, and it basically ranks all the variables from the most important; and actually, some of the variables didn't make it on here because they weren't important at all. This is the variable importance plot for our initiation outcome from the main model. And what you're seeing here is the Nosos Risk Score is the most important driver.

So, for anyone that knows about machine learning, just to assure you, we did do the best practice-related things where we tuned the parameters, we rebalanced the data, and then we did calculate predictive fit statistics.

So, we ran several models, we ran a main model that kind of drove our initial interpretation of the findings; but to be sure, because these are exploratory, we ran the models in slightly different ways just to see what was consistent across all our models; and this is sort of the... what came out of that comparing across models.

And what we're seeing--and you actually saw this in the variable importance plot--what we're seeing is what drives initiation is having a higher Nosos score, so having a higher risk for incurring healthcare costs prior to receiving mental health therapy actually drives that engaging in therapy, or at least starting therapy.

Whereas adequate dose tells a bit of a different and perhaps, more complex story. The primary drivers that came up across all the models were having a substance use diagnosis in the past 12 months, having had a conjoint therapy visit or a marital counseling visit in VA in the past 12 months; the veteran not being married, which was interesting; having more refills for PTSD; and having an ED visit in the past 12 months.

And so, what we're sort of thinking the story about adequate dose is that there's a need component, you see comorbidities and actual PTSD symptoms, recognize PTSD symptoms, but it's also... potentially, there's an access issue where perhaps, someone comes into the ED visit for a crisis and they're referred to therapy or they're in for an SUD diagnosis and they're referred to therapy, so perhaps being part of the system is also something that leads to actually having an adequate dose that could be reflected if people are in some sort of crisis.

So, I’m going to talk next about the conclusion just from the quantitative study. I should say first, one of the really interesting things is that the initiation outcome, that dose models were much less predictive, so there was a higher error rate in the number of people or the proportion of people that were correctly classified into having had the outcome or not. And so, it's possible that our model was inadequate and that there may be other system and provider factors that we didn't account for that need to be addressed in future research.

We saw that veteran need was something that appeared across both models; the adequate outcome that seemed to be more influenced by veteran health and perhaps, family factors, which suggests that there's maybe not the same determinants for both of these outcomes providing different opportunities for intervention. So, when people are thinking about whether they want to address initiation versus dropout, there may be different pathways; or if people are trying to address both, multiple determinants need to be addressed.

So, now, I’m going to go on to talk about qualitative research. The research question was how do specific predisposing, enabling, need and VA organizational factors promote veteran engagement in PTSD therapy? Again, these are folks who were referred for PTSD therapy, and we conducted 30 to 40-minute telephone-based interviews with veterans and their support partners; we conducted these separately. We ended up speaking with 18 veterans and 13 support partners; and of these, 11 were kind of associated veterans and support partners, there were 11 dyads. And we used Dr. Hamilton’s Rapid Analysis of Themes approach, and we started with the Andersen model constructs as the initial structural codes that we used to organize the data.

So, I had mentioned that we interviewed both people separately; but our interview content had a parallel structure. And so, for both the veteran and the support partner, we tried to understand what their understanding of treatment and treatment attitudes were, how they valued support partner engagement to engage in treatment, and their perception of the helpfulness of support partner involvement in treatment.

You can see this is a fairly young sample; and what was also really exciting to us is there was a very high proportion of women veterans, so much so that we actually needed to go back and interview five more male veterans to ensure that that perspective was captured. And this is also like a fairly racially-diverse national sample, so it was exciting to have these perspectives.

So, I’m going to give an overview of the findings across the four structural themes, and then I will go into each with some supporting quotes. But for predisposing, we actually found that treatment attitudes was really important from both the veteran and the family member. Interestingly, people talked less about the influence of traditional predisposing factors such as race and ethnicity and their inclination to use treatment. For the enabling construct, family encouragement and support were key treatment enablers, this has been found in other work.

We also found it interesting marital therapy also was something that came out as being helpful, particularly within the dyad to help both participants understand PTSD; economic enabling factors such as additional resources or lack of resources, perceived strain, did not come out as something that was salient for promoting engagement and treatment.

For need, PTSD symptoms was clearly important, and veterans and family members gave examples about how PTSD symptoms both promoted and inhibited treatment engagement. And then for the organizational factors, negative experiences with VA deterred care seeking at VA; treatment modalities--and I’ll talk a little bit more about this in a bit--did influence treatment engagement; and we found that support partners generally struggled to navigate the VA system, but being engaged in the Caregiver Support Program actually helped them.

So, I’d mentioned how treatment beliefs from the veteran and the family member were really critical for promoting treatment engagement. We had a veteran female who said, "I loved that 10-week program," and she was referring to an evidence-based program, "I really worked on doing my homework; I learned how to cope with a lot and what to do, and realizing that it's never going to go away, I just have to learn how to cope better." So, she felt like treatment was working for her, that she had just a lot of a very positive attitude towards it.

Some family members talked about how they felt--they believed that treatment would be helpful and that really was needed for the veteran to improve; motivation underpinning care-seeking, so a lot of veterans talked about how they were motivated to seek mental health care because they wanted to improve their interactions with their family. So, one veteran said, "My marriage was on the brink, my family, my children, and it," meaning therapy, "improved that and that was important to me."

But conversely, people did talk about negative treatment attitudes and a lot of these treatment attitudes were related to negative experiences with treatment in the past. So, we see--and a lot of people in our sample had had a really long mental health treatment journey, nobody had never mental health treatment when we spoke with them, and it was just interesting that sort of past experience was really important for how they viewed treatment, which is probably not surprising, but it was important.

So, family encouragement and support were key treatment enablers; and one veteran was talking about his spouse, and his wife's engagement, and his therapy and he said, "To have someone that I can confide in, trust, and actually to assist me with everything, actually." Marital therapy helped veterans and their partners to understand the impact of PTSD symptoms. So, one spouse talked about how it was actually going through marital therapy that helped his wife who had PTSD reflect on her PTSD. He said, "We got a good therapist for marriage counseling; it's helped her to identify where the issue is rather than just sitting there like, 'Oh, yeah, I’m mad," but, 'Why am I mad?', kind of thing. And, as I mentioned, economic enabling factors were not salient.

So, one thing that came up in the quantitative models was that just need for health care, in general, seemed to help people engage, maybe because people were used to care-seeking behaviors, they were already engaged in the system; we really can't tell that from our quantitative models. What the qualitative told us, that it was really mental health symptoms, particularly PTSD that both promoted and inhibited treatment engagement. So, one veteran--one female veteran talked about how because of her PTSD symptoms, that sort of led to some avoidance, it made it hard for her to engage with group PTSD therapy. She said, "I don't care to socialize with others, I mean even friends. So, to do PTSD therapy in a group setting with people that I don't even know was just out of my comfort zone, it gave me a lot of anxiety."

Finally, I mentioned how negative experiences in VA deterred veterans from seeking mental health care in VA; however, they still sought care in other settings such as through Wounded Warriors and through the Vet Center. So, in reflecting on one veteran's experience with their VA care, she said, "There's no continuity of care, so it's like having to constantly start from the beginning and never really get established with something. That's what makes it hard." Now, I should say that this was just a subset of people who'd had negative experiences; but it was by no means the majority of people and really everybody was seeking care in VA to some degree.

Treatment modality influenced treatment attitudes, so people talked about how difficult PE or prolonged exposure was for them versus CPT; people talked about how they preferred individual over group therapy and how they preferred in-person versus virtual care, though several folks did talk about--because as we actually did the interviews during the pandemic--about how virtual care had been really helpful to them. So, we are pursuing a virtual care option with this intervention that we're developing; but in general, the veterans in our sample did talk about how they preferred in-person care.

A lot of the support partners talked about how they experienced barriers in navigating VHA care, the Caregiver Support Program or the Comprehensive Program helped them, they talked about ways that it helped them to be more involved in the veterans’ car. So, one male spouse said, "I try to be very, very involved in her care because I am her caregiver; because the VA hospital is giving me a stipend, so I like to treat it as a job."

So, now, I’ve taken you through the design and the analysis of the quantitative study and the qualitative study. And then I’ll show you how we merge the results along the constructs of the Andersen model. So, we had a research question for our mixed-methods piece as well, and that was, "In what way do the qualitative findings agree or disagree with the most influential factors identified in the quantitative model; and how do they provide additional context for understanding how these factors promote engagement in PTSD therapy? I’m just going to pause there to let you all read it because it's kind of a mouthful.

So, the way that we were interested in integrating the findings was to understand whether the qualitative and quantitative findings were telling us the same thing, do they agree or disagree; and additionally, how does what participants said to us provided additional context for our understanding of what we saw in the machine learning models?

So, this is called a joint display and mixed methods research, and what we did is here are our structural codes; and then we lined up the results from the quantitative and the results from the qualitative, and we looked at how they compared. So, I’ll start with predisposing. So, we really found very little in the quantitative for predisposing, but what we found in the qualitative was the treatment attitudes were really critical. We were not able to assess treatment attitudes in the quantitative models because we didn't have that data.

What was interesting as well we didn't sort of find very direct support for the impact of gender, age, or race-ethnicity, some of the stories that we heard from participants suggest that gender and age may have impacted how they engage in mental health care through kind of more-removed mechanisms such as life stage; so, if they had children, it made it harder.

And then some of the female veterans talked about negative care experiences that they'd had related to gender that might have deterred them from seeking mental healthcare.

So, we really didn't find a lot for enabling social or economic for initiation, but we did for adherence and a lot of it was having had marital therapy in the VA. We did find that not being married was something that promoted adherence and we didn't find anything in the qualitative to help us understand that; but one thought is that it is possible that people who are married may be more likely to have children because this is a young sample and so maybe not being married, that was sort of proxying household structure.

For the qualitative support, family encouragement and positive norms were really important, and it's possible that some of these positive norms are associated with participating in marital therapy. So, perhaps, because people had had a good experience in marital therapy, they had more belief in the efficacy of treatment; or people had a belief in the efficacy of treatment, and because of that they were in marriage therapy, but there's definitely something going on there about social norms and willingness to participate in marital therapy, and how that helps people to support each other and understand PTSD.

So, need was a clear driver of use and engagement of healthcare across both data sources. In the qualitative data, respondents talked more about the importance of mental health versus physical health, though the quantitative findings show that engagement in the system or how people access the system, whether it's through a crisis ED visit, is something that could promote engagement.

Finally, we weren't able to assess organizational factors in the quantitative data, but we certainly found support for the importance of organizational factors in the qualitative data, and I’ve already talked about that, so I won't go into it.

So, some considerations and conclusions. We had a really excitingly diverse qualitative sample; one thing, though, is they'd all engaged in treatment previously and so it's hard for us to say whether these results would generalize to somebody who is new to mental health treatment. Another really critical thing that came out of this is that the drivers of starting and adhering to therapy are not the same; and so depending on what intervention is being used, it's really important to think about what the desired outcome is and how that mechanism between the intervention and the outcome operates.

Clearly, important drivers such as treatment beliefs and provider attitudes are not always captured in administrative data and they certainly weren't captured in our data, and so this just really showed the value-add of having qualitative data, because it helped us identify this and we wouldn't have known why we were seeing what we're seeing or we wouldn't have been able to generate a lot of ideas about it.

Finally, family support and social norms matter. There's more work needed on how family therapy or family-involved interventions might operate as a gateway to improving veteran engagement in mental health services. I’m really thinking too about how family fit along the treatment continuum: is it through CBCT, which is a couple-based therapy for PTSD; is it an adjunct therapy such as that which Johanna Thompson-Hollands has developed for the family member while the veteran goes through their treatment, but there's a lot of ways that we can support how families are leveraged and how to support veteran choices as we try to do that.

I do want to shout out to Dr. Laura Meis and Dr. Johanna Thompson-Hollands as they're also engaged in some of this work, and it's been exciting to collaborate with them through this process.

So, for the next steps, this paper is actually almost ready to submit. We're going to be targeting social science and medicine and hope to submit next month. One thing we've done with this data is we've adapted the REORDER intervention; the paper was led by Dr. Lisa Dixon in 2014 and Dr. Shirley Glenn is one of the mentors on this project. And so, we adapted REORDER and have renamed the new intervention, FAMILIAR; we are currently piloting FAMILIAR with 15 dyads who are seeking care at the PTSD clinic at the Durham VA; we have started the intervention with 10 out of 15 dyads, I believe, so that's exciting, and will produce more information to help us understand how we can support veterans and their families.

So, once we have those results, we will finalize the intervention protocol and write up the results.

So, as you can imagine, this is a ton of work and it's been a huge team effort. So, I’d like to acknowledge the mentors, including the advisory boards that include local Durham VA clinicians, national clinicians, I mean there's been a lot of people who've provided input on this. I’d like to acknowledge our study team, and then also the intervention development team who worked really hard to adapt REORDER into FAMILIAR using these results; and I’d also like to acknowledge Ted Berkowitz who did all the machine learning coding in R, and so he was a huge help to me on that.

And finally, I’d like to acknowledge my VA award funding and also funding through our ADAPT Center.

Alright. Thank you. Thank you so much for your attention; I look forward to answering any questions; and if you're interested in slides or have questions after this, don't hesitate to reach out.

Rob: Thank you, Dr. Shepard-Banigan. We do have a few questions queued up; but attendees, if you have a question, please go ahead and submit that to the Q&A panel. If you don't see the Q&A panel, click on the ellipsis button in the lower right-hand corner and you can click on Q&A there, and put a checkmark next to it and then it will appear as a panel to the right of the slides.

But jumping right in, this person writes, "I’m sorry if you already mentioned this, but what organizational factors were you considering? You could theoretically see if there are different rates of service us, and then in both at 'any' and 'adequate' at the facility level to determine if there are facility differences."

Shepherd-Banigan: Yeah, I agree. There were definitely organizational factors that you can get to in CDW data, and there's some very creative ways to do that. Based on a review of the literature, we were interested in--and we're thinking about supply of service, we were trying to focus on the EBPs; but some of these other characteristics, we were just having a hard time figuring out. So, it wasn't something that we... it's definitely something for future research and something that I will do in the future. So, I appreciate that point.

Rob: Thank you. "It sounds like your data suggests that there are different barriers for getting veterans to go from 'none' to 'any' versus 'any' to 'adequate', with the facility differences being the main focus of the former and family/social support being the main focus of the latter. Is that accurate and do you have theories as to why that would be the case?"

Shepherd-Banigan: Yeah. So, I wouldn't say it's exactly... I mean I think, at least in the quantitative models, these models were less predictive. So, we're thinking that there was some... almost an omitted variable bias thing going on even though it's not technically what it is in the machine learning; but we just didn't have the right variables that were helping us to identify and classify people.

And so, our hypothesis was that this was potentially driven by system and provider factors, but we can't say that definitively. And certainly, the qualitative interviews showed us that a range of variables are really important, that included treatment attitudes, family support in addition to some of the system pieces. So, I wouldn't say that's exactly accurate, but that was our hypothesis is that it was possibly driven by system and provider factors.

And Rob, I think that there was a second piece of that question that I didn't answer. Would you mind repeating what that is?

Rob: Sure. "Is that accurate?", was the first question, and do you have any theories as to why that would be the case?

Shepherd-Banigan: Yes, if that is true, you wonder whether... do different people stay in treatment versus those that get in? Like in some ways, it's like that initial hump of actually getting into treatment maybe related to how easy it is to schedule an appointment, how long the waitlist is. But then once people are in, the barriers to stay in are likely just different and they could relate a lot to... people talked a lot about treatment modality, so PE was a lot more difficult, and that's for family influence could come in a little bit more. So, I think the pathways are just different because I think the actual access piece is slightly different; you've got to get people actually into the system. But once they're into the system, there's just a different set of barriers or facilitators that influence how they stay in. That's a great question.

Rob: Thank you. Those were all the questions that we have at this time. We still do have a few more minutes left, so anybody, if you're holding back, please go ahead and submit your questions through the Q&A if you can; but if you can't see that, you can go ahead and use the chat. But Dr. Shepard-Banigan, while we're waiting to see if anybody else has any questions, if you have any closing comments, now would be a good opportunity to make them.

Shepherd-Banigan: I mean I think that the closing comments are... I’m a health services researcher by training and I’ve just been really grateful for the opportunity of the CDA to delve deeper into this work, and I feel like it's really strengthened my commitment to think about how we work with clinicians, administrators, and other researchers about what it is that we can offer to veterans who would benefit in some way from engagement of their loved ones; and so, I’m really interested in kind of thinking at a systems level what that might look like. So, if anyone is interested in thinking about that sort of thing, please feel free to reach out. And I do welcome additional questions later. I appreciate those; it's great to challenge our thinking on this.

Rob: And I see that you have your VA email address there at the bottom of the screen.

Shepherd-Banigan: Uh-huh.

Rob: We didn't get any additional questions. So, at this time, thank you very much for your work in the VA, and thank you for preparing and presenting today.

Attendees, when I close the webinar momentarily, a web page will pop up with a few survey questions; if you wouldn't mind, please take a few moments to provide answers to those questions. We do forward them to our presenters and we look at them ourselves to try to continue to improve on our cyber seminars’ product.

Thank you again, Dr. Sheperd-Banigan; and with that, I’ll just close and wish everyone a good day.

Shepherd-Banigan: Thanks, Rob. Bye, everyone.