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Session: Multiple Team Membership and Primary Care Unit Performance

Presenter: Eean Crawford, PhD

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Molly: Without further ado, I would like to introduce our presenter for today. Joining us we have Dr. Eean Crawford. He is part of the VISN 23 Patient Aligned Care Team Demonstration Lab and an assistant professor in the Department of Management and Organizations at the Tippie College of Business at the University of Iowa. So without further ado, Dr. Crawford, I would like to turn it over to you at this time.

Dr. Eean Crawford: All right, thank you Molly. I appreciate the introduction. I just realized I must have sent you an old one because this past summer I got tenure and so now I’m an associate professor in the Management and Organizations Department at…

Molly: Congratulations.

Dr. Eean Crawford: Yeah, I appreciate it. The old joke my dad says is that he used to think tenure was the end of my problems and I was right; it’s the front end. Anyway, so I’m Eean Crawford and I’m grateful to have this time to share with you some of our research that I’ve been working on in conjunction with Greg Stewart, who is also here at the VISN 23 PACT Demonstration Lab, and then former graduate students of ours, Cody Reeves and Stacy Astrove, who have since moved on from Iowa City to faculty positions at other universities and still work with us on this research.

I’m really pleased just to present with you what we discovered about the effects of Patient Aligned Care Team members being assigned to multiple teams on primary care unit performance. I’m also pleased to report this paper was accepted for publication in the Journal of Applied Psychology last month and is currently in press. So if you’d like to download and view the actual paper, the in-press notification actually just hit my email inbox this morning. So if you want that link, feel free to contact me and I’ll send it to you.

Before I start the actual presentation, I’d like to just know something about our audience. So I’m going to hand this back to Molly who is going to push a poll to your screen and give you the instructions for how to reply to that.

Molly: Thank you. So for our attendees, as you can see on your screen, we do have the poll question up. So we would like to get an idea of what is your roll in PACT? And you can go ahead and just select the circle right there on the screen next to your answer option. So we have PACT core member; PACT extended team member; PACT administrator, leadership, manager, or policy-maker; PACT researcher; or I am not part of PACT. And it looks like we’ve had about two-thirds of our audience vote and the answers are still streaming in, so I’m going to give people a few more seconds to click their responses. Looks like answers have leveled off, so I’m going to go ahead and close the poll and share those results. So what we have is 11% of our respondents are PACT core members; 3% PACT extended team member; 24% PACT administrator, leadership, manager, or policy-maker; 21% PACT researcher; and 42% of respondents selected I am not part of PACT. Thank you to those respondents and I will turn it back to you one more time, Dr. Crawford.

Dr. Eean Crawford: Okay. So thanks for giving me some insight into who is listening today. I’ll also note that while Molly mentioned questions are usually saved until the very end, I’m happy to entertain questions any point throughout. So just type in your questions whenever and Molly is welcome to interrupt me at opportune times to ask those questions wherever they make most sense.

Okay, so I just want to give some backstory that we actually stumbled upon this research investigation somewhat by accident. It was back in 2013 when Greg Stewart, who had been working, invited me to get involved in studying the effectiveness of then recently created Patient Aligned Care Teams. And I first asked what I thought would be a really simple question, just who is on what team? And it turns out we didn’t really know. Took us a while to find the data that had the team assignments, the team assignment reports in the primary care management module. And I started looking at them and then noted something curious.

So what you’re looking at here is an example of one of the downloaded team assignment reports. This is real. I’ve just changed the identifying information; so the facility IDs, the Sta3ns and 6as, those are changed. The names of actual employees here have been changed to famous people or research team members, and I’ll let you figure out who is who. I don’t want to be the source of any rumors, however, that Barbara Walters or Keith Richards or Jennifer Lopez are now VHA primary care employees. So obviously these team assignment reports, they show the identifying number of the hospital or clinic and within that hospital team name. Next to that are the names of the staff members on the team and their role on the team. And I’ll just make one other note because I’m sure this question will come up later. We restricted our analysis just to core PACT team members. That is focusing on primary care providers, which are MDs, PAs, NPs, RN care managers, LPN associate nurses, and the administrative assistant. The extended team members are excluded from this analysis. We just wanted to focus on the PACT core team members.

Anyway, there’s hundreds of these team assignment reports, obviously one for every single location. And when I started to go through them, one thing that surprised me is that I would see staff members' names more than once and affiliated with more than one team. For example, the person here represented by Barbara Walters as an RN on team one is also an RN on team women’s health. And I thought, okay, that might just be a subspecialty within team one, both working for nurse practitioner number two. But then I saw other people like the one represented by Jennifer Lopez, who was an LPN on team two, or sorry team one and also the same team and also on team three working for a different doctor. And this seemed unusual to me because I had been getting myself up to speed on what PACT was supposed to be and in the implementation manual the directives were that each staff member was supposed to be assigned to one and only one team.

So I wondered to what extent this was occurring throughout multiple facilities. So we downloaded all of the team assignment reports for every single facility and I started reading through hundreds and hundreds and hundreds of these lists, and I thought it might be easier to visualize this than to read it. So I used a research technique I’m familiar with from social network analysis, just borrowing a visualization technique called bi-partite member team networks, or a fancy way of just saying show individuals as circles, show teams as squares, and show their connections to those teams with lines. So in these networks, what we do is represent the first mode or the first type of entity as a people. So members of teams we’ve visualized as circles. The teams themselves we visualized as squares, or I guess they look like diamonds here. And then a member’s assignment to a team is simply a line connecting them from their circle to the square. And then visually if a member happened to be assigned to more than one team, we would see that connection of that member to additional teams. So for example here member D belongs to team one and also team two, member I over here on the right. Well, where are those going? Member I on the right is connected to team three and team two.

So let me show you a couple of actual visualizations of team membership structures in a couple different VA facilities. So here is one. And you can see, my mouse is being temperamental and advancing my slides unintentionally. I apologize for that. If I can move my mouse to highlight, where did my mouse go? There it is. Okay. Go back. All right, so here if you can see my mouse, you can see that for the most part you have individuals who are assigned to just one Patient Aligned Care Team and only one Patient Aligned Care Team. There’s a couple individuals like these right here that they’re shared between two teams and these down here in the bottom right that are shared between two teams. But for the most part, nearly every single person is a member of just one team. Oh, I’ll also mention people usually ask me why are they laid out the way they are? And this is just the spring embedded layout algorithm from the code that places connected lines and circles closer together and disconnected ones further apart, with the center being the obviously the center and they spring embed from there. Sorry, that’s probably too much information.

Here’s a second one. And my reaction to this one the first time I saw it is probably a lot like many other peoples’ reactions who see it for the first time, which is wow, this is really different. Over here on the left, right, you see there’s three teams and most of these people are shared with all three of them. Sorry, I don’t know why this keep slipping back and forth. Up here you see this one person who is servicing all six of these teams. You have more sharing members in these clusters here and here, and then of course this big cluster down here. This seemed almost like an error or a mistake. I apologize, my mouse has gone. Let me get back to that slide. There we go.

So in the bottom center here we actually called this facility to ask them and we sent them this image and said can you explain to us what we’re seeing here? And they said oh yeah, what you see in the center is our pool of 16 RNs that we assign to every single team, and then you see four clear pods and we have clerks that service each of those four teams within each pod. And then we have a doctor and an LPN assigned to a single team in each of those pods. And it was interesting to me how they just quickly said yeah, that’s exactly what we do. And in my head I’m thinking, wow, that is so different from what the PACT implementation manual seems to suggest how PACT should be structured.

As a researcher I found this very interesting that there was such variation. We created these visualizations for every single one of the clinics and facilities, and there is everything from people assigned to one team and only one team and more sharing that’s just like this. So there’s a lot of variation in the number of cross-team assignments that people have. And so we stumbled on our question which is, on average, I wonder which of these structures is more successful. Like can we quantify to what extent primary care team members are on more than one team and if we hold a bunch of other factors constant, can we see what effect this has on the facility’s performance? And we also wondered are there conditions where one structure might be better than the other or vice versa? Perhaps one of these is suited to serve more complex patients and one maybe works for more routine patients.

So we started collecting data and let me describe a little bit more of our study setting. First, we gathered the team membership and performance data available on all of the VHA’s primary care facilities. They comprise over 5,000 teams, 5,000 primary care Patient Aligned Care Teams. This is over 26,000 primary care personnel serving over 4.2 million Veterans. One other note, this question I often get, so I’ll just answer it now. There actually is over 900 VA hospitals and clinics, but we exclude the very largest teaching hospitals that have a large count of medical residents because their team structures just tend to be so different with an attending physician and multiple residents. And so because their PACT structures are quite different, we exclude any hospital or clinic that at the time of analysis had 10 or more medical residents, which is somewhat an arbitrary cutoff to differentiate between large teaching hospitals and those that aren’t large teaching hospitals. So keep that caveat in mind.

As far as the measures that we collected and analyzed, first there are many ways to consider a primary care unit’s performance. The measure that we selected for this analysis is the number of emergency department visits that were made by patients of that facility in the prior 12 months, which was taken from Compass data back in September 2013. Now why this measure of performance? Well, if we assume that one of the main goals of primary care services is to provide timely access to high-quality, proactive, preventative primary care, especially if patients rarely have to default to emergency departments for routine treatment, and if we consider nationally representative data that’s examined, ambulatory care visits to hospital emergency departments, they estimate that anywhere from 55 to 62% of all emergency department visits occur for non-urgent ailments that could have been treated effectively in a primary care setting.

After adjusting for measures of patient medical need, demographic characteristics, other covariates, a big factor explaining emergency department use is the quality of primary care services, including the access to timely appointments and the continuity of provided care. And that’s been shown in national studies of the elderly, children, non-elderly adults. So our assumption here is that because emergency care services serve as more of a safety net for patients, when primary care might be inadequate then we could consider greater utilization of emergency department services to be an indicator of failures in primary care.

Health practitioners, managers, they’re concerned about emergency department overuse because it’s higher cost relative to primary care. There’s adverse outcomes from lack of continuity and follow-up of primary care. There’s a diversion of resources from more life-threatening conditions to minor problems and hospital overload that creates frustration for staff and patient dissatisfaction. So these are some of the justifications for why we are considering a primary care unit’s performance as reversely indicated or inversely indicated by the number of emergency department visits made by their patients that are assigned to that unit in the prior 12 months.

The measure of team membership, that’s a pretty simple measure. It’s just a count of the number of team memberships per person averaged to the facility level. All of our analysis here is looking at the facility level. How is the average number of team memberships per person associated with emergency department use for that facility? We’re not analyzing specific teams. It’s all averaged to the facility level. We also account for how complex the patients are that are served by that facility. So we measure that by the Diagnostic Cost Group average for the facility. This measure utilizes prior patient diagnoses and demographic information, prior health claims, and assigns patients to risk groups based on their future expected resource needs for their medical conditions. And it’s indexed on a scale where a DCG score of 1.0 represents patients whose medical conditions are equal on average to those of the average Medicare patient. So if scores are greater than 1.0, those represent more complex patients, and scores less than 1.0 represent less complex patients. I find it interesting that the mean across the entire Veteran population is 0.58, suggesting that Veterans as a population on average have more routine, or have less complex health conditions than the average Medicare patient.

Some important covariates that we account for in our analysis is obviously the number of patients, right? The number of emergency department visits is obviously associated with their opportunity to occur, which rises as the patient population grows so we simply account for the number of patients in all of our analyses. We also account for staff availability in our analyses by using the staff-to-provider ratio. This is just a ratio of support staffs’ full-time equivalents to primary care provider full-time equivalents. The directive is that there ought to be three full-time staff supporting every single full-time primary care provider. And so we account for over- or under-staffing by including this ratio in our analyses. We also account for just what’s the average team size of each team in the VA. That’s the number of distinct people compromising the team, averaged to the facility level. And then finally there’s a host of factors that differentiate VA facilities. We think a lot of these could be encapsulated by their geographic location. We account for that in two ways. One is through the VA’s previous classification of each primary care facility based on their federal rural, urban commuting area code associated with the zip code of each primary care unit’s physical location. So if it’s an urban location it’s considered one in our analysis. Otherwise rural or very rural are zero. So you can see that 56% of our facilities are in urban locations.

A quick note about our analysis. So we used a negative binomial regression. This is because our dependent variable is simply a count variable. It’s the number of emergency department visits in a 12-month period. It can only take on positive integer values. Because it has a really long tail, there’s greater variance than the mean. This violates some assumptions of normality, so we use negative binomial regression to appropriately model that over dispersion and the distribution. And then like I had mentioned before, we used an exposure offset to adjust for the size of patient populations for every single facility in our regression.

Okay, let me get to the results. And note here that because this is negative binomial regression these coefficients are all odds ratios. And so to interpret them you exponentiate these coefficients and interpret it as the increase in the likelihood of seeing a patient visit the emergency department associated with a one standard deviation increase in whatever the predictor is. And all of our predictors here have been standardized. I just want to point out among the covariates here, in particular, there’s some quite strong effects associated with having an urban location of the hospital or clinic. If you exponentiate that 0.19 in the first column, what that suggests is switching to an urban location, patients are 20% more likely to be visiting the emergency department. And the patient case complexity is quite a strong effect as well. In that first column the 0.54 suggests that a one standard deviation increase in the patient complexity score on average for the facility is associated with 70% more emergency department visits. So patients in urban locations that have more complex health conditions tend to visit the ER much more frequently.

Now even accounting for those big effects, as well as for adjusting for patient size, size of the patient population, the staff-to-provider ratio, so staffing availability and team size, I’m holding all of these constant, we can see that the main relationship we’re interested in is that if you take that same staff and increase their number of team memberships, a one standard deviation increase in the number of team memberships per person on average is associated with about a 4% increase in emergency department visits on average. This effect is accentuated by patient complexity. There’s an additional increase in the likelihood of visiting the emergency department in more complex patient populations. So if you take a one standard deviation increase in the patient complexity, that results in an additional 6% probability that patients are visiting the emergency department. Now that may come across as small, but it might help to see that this looks like on a graph to put these effects in context. So let me show you the results graphically.

What we’ve plotted here along the horizontal axis is the number of team memberships per facility across the bottom and then vertically the predicted number of emergency department visits. You can see the solid line is the average across all facilities. And as team memberships increase so do ER visits at a mild rate. But it’s particularly bad for facilities with high patient case complexity. The increase is significant as you move from one to two to three to four to five team memberships per person. And this is within our relevant range of data. Ninety-nine percent of all facilities have between one and five average team memberships per person.

Molly: Dr. Crawford?

Dr. Eean Crawford: Yes.

Molly: I’m sorry to interrupt. When you’re done with explaining this chart, can you please repeat how to interpret the negative binomial coefficients shown on slide 10?

Dr. Eean Crawford: Yes. The last point I was going to make about this chart is that we, interestingly, don’t observe a meaningful trend for facilities with low patient case complexity. There’s no difference in emergency department use associated with the number of teams per person that people, the primary care core team members belong to in the VA facility. Let me go back by Molly’s request to how to interpret these coefficients.

So one more time, if you want to interpret the coefficient, it’s the increase in the likelihood of our dependent variable count associated with a one unit increase in the independent variable. And you exponentiate, so you just take the natural algorithm E raised to the coefficient is how you mathematically transform that coefficient into what’s the increase in likelihood of patients going to the emergency department with a one standard deviation increase, sorry with a one unit increase in the predictor. So I feel like I’m butchering that explanation. If you exponentiate the coefficient in the table, so E raised to the power of the coefficient, that gives you a decimal of one point. For example, if you take E raised to 0.19 for urban and rural location, that gives you a decimal of 1.20 basically, which means patients are 20% more likely to use the emergency department in urban locations relative to rural or very rural locations.

With patient case complexity, if you take E to the power of 0.54, that gives you a number of 1.70, which means that for a one standard deviation increase in patient case complexity, because that’s what a one-unit increase is for a standardized variable, patients are 70% more likely to be using emergency department.

Then with our main effects of interest here, once we hold all of those effects constant, if you take E raised to the power of 0.04, it gives you 1.04, which means patients are 4% more likely to visit the emergency department with each standard deviation increase in team memberships. And the standard deviation on that is, I think, 0.74 team memberships per person. And then last, the additional increase in that likelihood as you multiply that by a one standard deviation increase in patient complexity, E raised to the power of 0.06 is about 1.06, which means patients are another 6% more likely to go to the emergency department on top of that as their complexity increases one standard deviation. I hope that explanation helped clarify things. If it didn’t, ask a question and I’ll try to clarify more.

So again, visually you see that increase being the greatest as the number of team memberships rose in a facility per person. It has the greatest increase on the number of predicted emergency department visits for high-complexity facilities.

Let me also show these relationships in percentage terms. That also might help it make more sense. So for high-complexity facilities, if each person had an additional team membership, just one additional team membership per person, we’d predict that that would be associated with about a 16% increase in patient emergency department visits. If every person in the facility was assigned to two additional teams, we’d predict that in a high-complexity facility, meaning a facility with high-complexity patients, there’d be a 35% increase in patient emergency department visits. And if they were to increase team memberships for everyone up to five team memberships per person, there’d be an 81% increase in patient emergency department visits.

If you just hold at the average of patient complexity, this is the middle section here, increasing a team membership for every person by one would be associated with about a 7% increase in patients’ emergency department visits. If you increase everyone by two, it would be associated with a 14% increase in patient emergency department visits. If you increase everyone by five teams memberships per person, we’d predict that be associated by about a 31% increase in patient emergency department visits.

Then you can see the lack of a meaningful trend with low-complexity facilities, that regardless of the level, whether you increase everyone by one, two or five, there’s really not that much of a change and perhaps a slight decrease. But this trend is not substantially different from zero; at least statistically we can’t demonstrate that that trend is different from zero.

Let me illustrate these results perhaps in one more way in financial terms. So we asked ourselves if we take these estimates of the reduced number of emergency department visits or increased number of emergency department visits and attached a cost to each one of those visits, what would be the financial impact? So a couple of assumptions here. Based on Congressional Budget Office research and these other papers that are cited, the estimated cost of an emergency department visit in the VA is about $1,100. The average number of team memberships per person in all of the VA’s primary care facilities is 1.44, which seems like a pretty low base rate, right? On average everyone belongs to between one and two teams. If the VA reduced that to just one team membership per person, our model estimates that there would be around 31,000 fewer emergency department visits per year, with $35 million in savings associated with that. In contrast, if primary care leadership thought it was a good idea to have everyone move to two team memberships per person from the mean of 1.44, our model would predict that on average, across all facilities, that would result in an increase of about 41,000 more emergency department visits per year and around 47 million in additional emergency department costs per year.

Just to show the majority of VHA facilities have their core team members on more than one team. So of the 849 facilities in our data, only 238 of them, that’s 28%, have their primary care core team members on one team and on only one team. In 516 of those facilities, that’s 61%, core team members are on average on more than one and up to and including two team assignments per person. And then there’s a small percentage, about 95 of those 849, that’s about 11%, have their core team members on average assigned to more than two teams per person. So there is room to take, and we’ve looked at this, this is assuming zero reduction in staff, it is possible to reduce the team memberships per person across the entire VHA.

Now why is this happening? I’m sure people are wondering what are the explanations for these associations? And honestly, there isn’t really any research that specifically addresses the question of why does the average number of team memberships per person in a unit or an organization affect the unit’s performance? But there is research from both social network literature and literature on multiple team memberships that are conducted almost exclusively at the individual level and at the team level suggesting that there are both benefits and drawbacks to having people assigned to more than one team.

On the benefit side, being on an increasing number of teams can be good as teams develop more efficient work practices to take advantage of the limited time that they have to work together as people have to be in different locations and different teams. Individuals can have greater utilization of their time. When they have downtime for one team, they can fill it working on the work of another team. You can also balance workload by having individuals assigned to multiple teams. If one member is absent, someone else can cover for them. So there’s a great appeal for having people covering each other on multiple teams. There’s also learning and information benefits as people go outside their focal team environment, work with other individuals, they get access to more information and more resources and have more connections to the sources of knowledge and support. And so those effects have been demonstrated in the literature.

But there’s also demonstrated drawbacks. Literature has shown that as individuals have to switch between different contexts, their individual attention is fragmented among multiple tasks of multiple teams. There’s significant context switching costs. Our minds are not, contrary to popular opinion, very good at multitasking. So there’s attention residues when individuals have to switch between contexts and teams and personnel. You often experience lags and delays when you have to wait for input from some team members who are working for a different team when you need them to be working for you. And there’s also reduced cohesion and ill-formed mental models among focal teams who spend less time together because they have difficult building collaborative relationships, and honestly, even understanding who is on the team.

So in some, the literature to date has shown that assignment to multiple teams can create benefits in terms of members coordinating between teams, but this seems to come at a cost of members’ focus and coordination within their teams. And we think that these benefits accrue only to the extent that teams really need them. Focusing on your time utilization, filling in for another team’s work only is beneficial to the extent that you have downtime where you don’t have work in your current team. And other research among VA primary care employees suggest that primary care schedules are so full there’s very little downtime to fill with another team’s work.

The benefits of learning and resource access are generally viewed to come only to the extent that you lack knowledge and skill and resources within the team and to the extent that primary care teams were designed to have the skill and knowledge and resources contained within the team. If they don’t lack those resources then there’s little to gain by searching them outside the focal team. So to the extent that those benefits get constrained and the cost of fragmented attention and your reduced cohesion when you’re focused across multiple teams, those seem to accumulate more and this seems to be even worse as patients’ needs are more complex. This is what we believe is happening.

However, I’ll be honest and candid in our limitations. So one is in this work we do not have evidence of causation. This is just associational data. It’s cross-sectional data from one month. It’s a snapshot of one moment in time. So we cannot conclusively conclude that the team membership structure of assigning people to more teams is causing emergency department use. It could obviously be the other way around. Also this data was from five years ago and it takes a long time to publish a manuscript through our review process. So what’s the state of affairs today? We’re actually working on that now. We have collected the data, five years’ worth of team assignment reports and primary care unit performance from fiscal years '14 through '18. We’re just underway beginning the analysis on that data. I was looking at it just a week ago and here’s your fun factoid from that analysis. So far, every single VHA hospital and clinic averages about 103 emergency department visits per facility per month. And if we take our assumption that each visit costs about $1,100 on average, that’s roughly $100 million in emergency department costs per month, or over one billion dollars in emergency department costs per year for the VA, and that seems like a lot.

Some other limitations. So I talked about what we believe is happening, the hypothesized mechanisms that might explain why team membership assignments are associated with emergency department visits. But we simply just don’t have data to confirm those explanations. There’s also other factors that we haven’t accounted for in this initial analysis. For example, surprisingly full-time equivalent status was not reported in the primary care management module team assignment reports until early 2014. So we’ll only be able to incorporate that into our future analysis and the data that we’ve collected in the fiscal years since.

There’s also other ways to consider measuring unit performance. We used emergency department visits, but that’s not the only meaningful performance metric. Obviously, we could analyze this with other indicators of performance such as access or continuity or patient satisfaction scores; it’s just a matter of connecting the data. There’s questions on to what extend the primary care management module is accurate in its data reporting of team membership assignments. If there is inaccuracies and they are not systematic inaccuracies, then really what that’s doing is creating noise and error in our estimates that simply reduces our ability to explain variance in emergency department use. It essentially renders our estimates conservative. Inaccuracies in the data means our estimates are probably on the low end of the range of what they would otherwise be if we had perfectly accurate data.

Okay, so my concluding observation from the research that we’ve done and how I’ve begun to think about this in my own work life is if focus is an important means by which you accomplish work, it is probably better to be on fewer teams than on more teams simultaneously. And if I had a recommendation to the VA, it would be to consider ways of allowing primary care core team members to be on one team and focus on one team because I think there’s substantial benefits to be achieved in that regard.

With that, that’s the end of what I have prepared. I am happy to entertain any questions that have come in during the presentation.

Molly: Thank you. We do have some pending questions. For those of you that joined us after the top of the hour and would like to submit a question or comment, please use the GoToWebinar control panel located on the right-hand side of your screen. Just click the arrow next to the word questions. That will expand the dialogue box and you’ll be able to write your question or comment there. And the first one: Was there any analysis of any difference with what role of membership and the impact on the increased ED visits?

Dr. Eean Crawford: Oh yeah, that’s a great question and thank you for asking it because I totally glossed over that. So we did analyze this by role. Does it matter whether it’s the RN, care manager, or the LPN or the clerk that is on average being shared? So we split out the number of multiple team memberships by role. You would not be surprised that the primary care provider usually is not shared across teams. It’s almost never the case that the primary care provider has more than one team assignment. But breaking it out by role, we saw no difference. There was no one role that explained why it was associated with greater emergency department use. It just seems to be an average effect across roles. I wish I could point to one role and be like this is the one. But as far as our analysis can tell, there’s no differential explanation by the role of the primary care team member who has a greater number of team memberships.

Molly: Thank you. The next question: Does the financial impact of 35.6 million in savings account for the cost of hiring the extra personnel needed to make it possible to have each member be assigned to one and only one team?

Dr. Eean Crawford: So this is a great question. We make that assumption based on existing staffing levels, meaning if you take existing staff and assigned every single person to one team and only one team, then staffing costs are held constant in that analysis. Now people might say, well, in practice that’s a totally unrealistic assumption because we’re using assignments to multiple teams to cover for staffing shortages. But there are other clinics in the VA that have staffing surpluses where they have more than one LPN and more than one RN on a team. So if we take a population-level assumption that the VA has current funding to staff every single primary care team with one of each role, which it does based on our analysis, but they might not all be in the correct locations presently, so the cost savings and additional costs, those hold staffing costs constant, which is probably a reasonable theoretical assumption, meaning the VA is currently spending enough on staffing that each team could be staffed with one person per role. In practice, it may be less of a realistic assumption because that would require moving people between facilities, which is obviously difficult to do.

Molly: Thank you. The next question: For one team model, is cost of new staff hiring and staff salary included in cost benefit?

Dr. Eean Crawford: Is that, that seems similar to the question that was asked previous to it. Is that, am I interpreting those questions as being the same?

Molly: I am not entirely sure. They came from two people, but the most recent one I read came from the same, yep, she said yes.

Dr. Eean Crawford: Oh, okay.

Molly: All right, we’ll move on to the next one. If that person needs further information they can write in to specify. Very interesting presentation. Are there any efforts to operationalize your work? For example, will this be monitored regularly, perhaps quarterly, to optimize PACT membership?

Dr. Eean Crawford: That is a fantastic question. We are, I mean we’re reporting the results of our work to PACT leadership. I’m obviously outside of the discussions of what PACT leadership chooses to do with that information. I’m not aware of current efforts to make this information known and implemented, but I’m sure that additional discussions will be sparked as this work gets publicized more, about what to do.

Molly: Thank you. How is team defined? By team name or the panel size? Panel size is not the same across teams and across VAs.

Dr. Eean Crawford: Right. The team is defined by the team name. We interpret the team name as the team ID. The panel size obviously varies by team, and so we account for the different panel size in all of our analysis.

Molly: Is there any plan to examine the impact of multiple team memberships for extended team members?

Dr. Eean Crawford: That’s an excellent question. We’ve been focused mostly on the core team members, but we could easily incorporate extended team members into our analyses. It’s just a matter of a little bit of additional programming in our code and I’ll note that down as a good direction to pursue.

Molly: Thank you. That is the final pending question at this time. While we, oh here’s one. Was, now they’re coming in. Was there a comparison of existing teams with the “ideal” membership, or as close to it as possible, versus the teams with surprising multi-team members as their ED utilization rates?

Dr. Eean Crawford: I think the answer to that question is that’s the very core of our analysis, meaning if the ideal is that individuals belong to one team and only one team and the surprising is that individuals belong to multiple teams, and that obviously exists on a continuum where the minimum is one team membership per person and the max increases in our data. Actually, the very max value I remember is 11.8. There is a VA facility somewhere that has 11.8 team memberships per person. So that’s our main independent variable, operationalizes the number of team memberships with the ideal being represented as the bottom end point on that continuum, as one per person, and the surprising findings being anything that increases above one with the extremely surprising structures being those that are on the high end of that scale. So I think that’s really the core of our analysis, which is we find that as they generally stick to the implementation guidelines of one team membership per person, emergency department use is lower.

Molly: Thank you. Since team size varies by VA locations, what are your assumptions on the study biases?

Dr. Eean Crawford: Sorry, can you ask that question one more time?

Molly: Since team size varies by VA locations, what are your assumptions on the study biases?

Dr. Eean Crawford: If team size does bias the results, well, I think we’ve accounted for it in our analyses. One thing that we’re not able to address in this paper is what is the difference in a team that has the FTE, the 1.0 FTE of a role filled by one person, versus multiple part-time people? For example, if we consider a fully-staffed team as having 1.0 FTE of the primary care provider, the RN care manager, the associate nurse, and the clerk, what difference does it make if the 1.0 FTE for the RN is made up of one physical person, one physical nurse, versus two part-time nurses that split the role at 0.50 FTE? So the team size there in terms of the number of unique individuals is four versus five. But in terms of filling the roles, the one team is not different from the other because they both have 1.0 FTE in each role. So is there a difference in those teams where they’re larger in size so that’s more people to coordinate with, more schedules to deal with, although they fit the structure of 1.0 FTE in each of the four roles? And even though they’re, and they’re assigned to just that team, so we haven’t been able to look at that, but I have wondered if larger team sizes, even though the FTE is the same, make coordination within the team more difficult. I mean research would suggest coordination difficulty increases as the number of team members increases, so I think there would be something there. We just haven’t been able to examine it yet.

Molly: Thank you. Has anyone looked into the issue of PACT having different service lines and how that affects care? Example, nursing is under nursing, MSAs are under HCAS, and providers under primary care versus having all members under one service line.

Dr. Eean Crawford: I do not know the answer to that question. I think that’s an excellent one. I simply don’t know. I don’t know if anyone has looked at it. I haven’t myself.

Molly: Thank you. May I share this study with leadership as our facility is planning some operational changes?

Dr. Eean Crawford: You’re more than welcome to! If you’d like, email me. I mean the slides are obviously available. If you’d like to have the actual paper, I can, just get in contact with me and I’ll forward you the link to the in-press paper.

Molly: Wonderful, thank you. And again, for everyone the link to the handouts is in your inbox. You received a reminder email about two hours ago with a link leading directly to those handouts. So feel free to access those anytime. And you will also receive a follow-up email two days from now with a link leading to the recording and the handouts. The next question: Did you find ideal teams exist more in one VA versus others?

Dr. Eean Crawford: The geographic distribution, there’s no association with the geographic distribution and the number of team memberships. So there’s the one team per person VA facilities everywhere in the country, and there’s the multiple team memberships per person in VAs all over the country. I don’t think there’s one particular region. There’s no regional effect that I’m aware of as far as we’ve looked at it.

Molly: Thank you. And let’s see, the next question we have: Is care coordination for a team correlated it to case mix more than panel size?

Dr. Eean Crawford: That’s another great question that I don’t know the answer to. I’m not sure how the questioner is thinking of case mix. If they want to type in a follow-up of what do you mean by case mix as opposed to panel size.

Molly: Okay, well, we can wait for them to ask for further clarification or to define their case mix.

Dr. Eean Crawford: While their discussing that, I mean if case mix means like the general complex, like how variable are the patient cases that they treat, to some extent we’ve captured that with the patient case complexity measure, the Diagnostic Cost Group average that takes into account all of the patients’ prior medical diagnoses and demographic information. Granted, it collapses that all into a single score that’s an average for the whole facility, that higher scores mean they have, on average, more complex cases that they deal with. So we’ve treated the complexity of cases in our analyses, and to the extent that that’s similar to what you’re considering as the case mix, then I think we’ve accounted for both the panel size and the case mix in our analysis.

Molly: Thank you. They wrote in, chronic care or complexity of care and then followed up with okay, thanks.

Dr. Eean Crawford: Yeah, okay, so I think we’re in the ballpark with what you’re considering.

Molly: Excellent. Well, that is the final pending question at this time. Do you have any concluding comments you’d like to make to our attendees?

Dr. Eean Crawford: Just [unintelligible 52:54] get in touch with me if you’d like to get the link to the actual paper. And I’d thank everyone for your time. I appreciate having the chance to discuss our work.

Molly: Excellent. Well, thank you so much, Dr. Crawford, for coming on and lending your expertise to the field. It’s very important to get this out there. Thank you to our attendees for joining us. I am going to close out the session in just a moment. Please wait while the feedback survey populates on your screen. It’s just a few questions, but we look closely at your responses and it helps us to improve individual presentations and the program as a whole. So with that, this does conclude today’s HSR&D Cyberseminar. Have a great rest of the day, everyone.

[ END OF AUDIO ]