Cyberseminar Transcript

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Session: VISN 21 Pharmacy Dashboard: Improving Medication Safety

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Moderator: Welcome to Data and Information Systems in Partnered Research, a Cyberseminar series hosted by VIReC, the VA Information Resource Center. Thank you to CIDER to providing technical and promotional support. This series focuses on VA data use in both quality improvement and operations research partnerships. This includes QUERI projects and partnered evaluation initiatives. This slide shows the series schedule for the fiscal year. Sessions are typically held on the fourth Tuesday of every month at 12 PM Eastern. You can find more information about this series and other VIReC Cyberseminars on VIReC’s website, and you can catch up on previous sessions on HSR&D’s VIReC Cyberseminar archives.

A quick reminder to those of you just joining us, slides are available to download. This is a screenshot of a sample email you should have received today before the session and in it you will find the link to download the slides.

Today’s presentation is titled Evaluation of the VISN 21 Medication Safety Dashboard, and it will be presented by Drs. Paul Heidenreich and Anju Sahay. Paul is a cardiologist and director of the Medication Safety QUERI at VA Palo Alto. He is also professor of medicine and health research and policy at the Stanford University School of Medicine. He has an extensive background in outcomes and health services research in the areas of technology assessment, quality improvement, and economic analyses. Anju, our second presenter, is implementation scientist for the MedSafe QUERI. She has over 20 years of experience in health services research. Since 2005 she has been working in the field of implementation science, with a focus on social networks and communities of practice. Thank you both so much for joining us today. Paul, can I turn it over to you?

Dr. Paul Heidenreich: Yes. Welcome everyone, and I just want to check to see if people can see the first slide?

CIDER Staff: So we need to update your settings. Right now we’re seeing you in presenter mode. We need to get it into slideshow mode. So at the top of your screen where it says display settings, you have to click on there. Yeah, just right there.

Dr. Paul Heidenreich: Okay.

CIDER Staff: Perfect, thank you.

Dr. Paul Heidenreich: All right, thank you everyone. Before we get started, I’ll just mention that I have no relevant financial relationships related to this talk and that we do partner with Pharmacy Benefits Management in our Quality Enhancement Research Initiative on medication safety.

So we’ll start with an overview of the Pharmacy Dashboard for VISN 21 that focuses on medication safety. And we’ll talk about the different interventions that are being used to improve medication safety and how we would then go about eventually looking to see which of those are better than others in improving safety. And as an example we’ll also use the medication use evaluation tracker data we have from national pharmacy benefits management. And then toward the end we’ll talk about plans for decision support added to the VISN 21 Dashboard. I think very exciting thing we’re doing that’s being led by Mary Goldstein. Unfortunately, she won’t be able to join the call, so we’ll be presenting on her behalf. And then we’ll plan to have about 15 minutes or so at the end for discussion.

So I want to start with a few questions just so we can see who’s on the call. One is what is your current primary role at the VA? VACO, whether you're part of facility leadership or national leadership, whether you’re a pharmacist provider, or whether you're an other provider, a researcher, or something not listed.

CIDER Staff: And we’ll give everyone a few more moments to respond. Responses are coming in nicely. I’m just waiting for things to slow down. And we’ll close the poll and go through the results.

Dr. Paul Heidenreich: Okay.

CIDER Staff: Looks like we’ve slowed down, so I’m going to close this. And what we’re seeing is 3% of the audience saying VACO or facility leadership, 38% pharmacist, 17% other provider, 24% researcher, and 17% other. Thank you everyone.

Dr. Paul Heidenreich: Thank you. The second question is: at what level do you primarily work? And this says in the Pharmacy Service if you’re a pharmacist, but if you have another role just say at what level that is. So that would be either at the facility, the VISN, the national, and of course you can say do not work in the Pharmacy Service.

CIDER Staff: And again we’ll give everyone a few more moments to respond before we close this out and go through the results. It looks like we’re slowing down, so I’m going to close this. What we’re seeing is 41% of the audience saying facility level, 12% VISN level, 0% at national level, and 47% do not work in the Pharmacy Service. Thank you everyone.

Dr. Paul Heidenreich: Okay and I think we have two last questions. They're pretty brief. One is does your VISN have a medication-related dashboard? Yes or no or not sure.

CIDER Staff: Again, we’ll give everyone just a quick moment and we will close it out. Okay, looks like we’ve slowed down so I’m going to close this. And what we’re seeing is 45% of the audience saying yes, their VISN does have a medication-related dashboard, 10% says no, and 45% don’t know or are not sure. Thank you everyone.

Dr. Paul Heidenreich: Thank you. And then following, the last question is a use question. So how often do you use such a dashboard if you have one? Daily, monthly, basically frequent, monthly, quarterly, yearly, or don’t use it.

CIDER Staff: And again, we’ll give everyone a few more moments to respond before we close the poll question out and go through the results. It looks like we’re slowing down here, so I’m going to close that. What we’re seeing is 26% of the audience saying daily or weekly, 15% monthly, 11% quarterly, 0% yearly, and 48% don’t use it. Thank you everyone.

Dr. Paul Heidenreich: Okay, thank you. I think that gives us a good sense of the group, so we’ll try to balance it, I think, both between the research side and clinical information. So the VISN 21 Pharmacy has actually a large number of dashboards. Here is a screenshot of the home page. You can see there’s a variety of dashboard related products. And if you focus in on the useful sites, we’ll see that among those is one for medication safety. So while we have a large number of things, this is the one we’re going to be targeting today. And this is what we target in our work and trying to find out how best to use it.

So here’s an example of many of the things that are available. So primarily it’s looking for patients on certain medications who should have certain types of lab monitoring if their on those medications. And then you look for missing or out-of-range labs. And so you can see for amiodarone we have some liver or thyroid function. Carbamazepine, dimethyl fumarate, EPA, methotrexate, spironolactone or eplerenone, sulfasalazine as well as not being on a certain, on some other medication such as a proton-pump inhibitor if you’re a high-risk patient on a non-steroidal. So this gives you an example of the type of things that can be tracked in relatively real time.

So I just let you know some of these related initiatives also relate to hypoglycemia, lithium, oncology drugs, opioid monitoring. And these are things that we’re specifically focusing on in our evaluation to see which of these safety initiatives and which of the response to safety initiatives are working the best.

So if we actually go to the medication safety dashboard, this is what we’ll see if we’re, and we select our facility of Palo Alto. So we have, along the left column we have the measure and there’s first a composite rollup. I won’t go into what that definition is, but just the next two levels are two of the drugs, carbamazepine and dimethyl fumarate, and maybe we’ll focus just on the dimethyl fumarate as an example. So again, this would be a drug often used for multiple sclerosis. It has a risk of lymphopenia, a low white blood cell count, and so white blood cell counts should be monitored. And you can see it, we’re tracking, that part is tracking three things. No appointment in the last year, missing follow-up labs, out-of-range labs. What’s nice is there’s, for those who are interested, they can immediately look on what do you mean by definition or what do you mean by no follow-up labs?

And then we can see on the far left, sorry on the far right, the denominator. So it shows how many patients met that criteria, or sorry, are on dimethyl fumarate and should potentially have some of this. And then we can see that basically everyone had an appointment in the last year. However, two out of the eight did not have a follow-up lab, and zero of those with the lab have it out of range. And so if you were interested you could click on that too, that everything in blue is clickable, hyperlinked, and we could see who those two patients were. Then this is available, as you can imagine, for the pharmacist or any other physician who wants to potentially use this type of data. And then you can break it down along the right-hand side by the station, by division. You can look at specific medications or dimensions. So I think primarily useful for some of this, primarily useful for pharmacists, although we have some other versions that are primary care PACT specific.

So our questions. Looking at this, and we’re working with a VISN, is to say what strategies used by the facilities are best to improve medication safety? So just because the dashboard is there doesn’t mean that anyone has to use it in any particular way. So in fact, just anecdotally, the VISN was aware that some facilities were doing one thing, others were doing another. So we wanted to see if any of those, that difference in use, was related to better safety and if there are particular bearers or facilitators to some to those strategies.

So now we’ll talk about some of those strategies in our evaluation of that dashboard. And at this point, to get that data we surveyed. So I’m going to turn it over to Anju Sahay at this point. Anju, why don’t you go over our VISN surveys that we did for the Pharmacy Dashboard?

Dr. Anju Sahay: Thanks Paul. So MedSafe QUERI program has three projects and right now we are talking about the first project, which is VISN 21 Pharmacy Dashboard. And for this, we have been collaborating with VISN 21’s Pharmacy leadership, who are Scott Mambourg, he’s the VISN 21 Pharmacy executive or VPE, and Joy Meier who is the chief health informatics officer.

So the main aim was to evaluate the pharmacy dashboard, so we conducted two surveys. One was done last year in 2017 and then we did a follow-up one for this year, primarily to understand the use and perceived value of the medication safety dashboard which Paul has been discussing and has shown some slides to the main dashboard. And within this dashboard, we have been focusing on five specific measures which are spironolactone/eplerenone, lithium carbonate, hypoglycemia safety initiative, oncology med monitoring, and opiate monitoring. So we wanted to see if they are being used, how are they being used, how useful are they in terms of perceived value.

Then we discussed with the VISN 21 pharmacy leadership about what are the implementation strategies which are being used and we brainstormed together, and based on it we identified seven implementation strategies which could potentially be used to implement the dashboard, which they are provide provider education, use of academic detailing, send electronic reminders in patient chart or emails, send request to providers for patient specific care plan, enter draft orders, use patient mailings, or call patients. So all these implementation strategies are at the provider level. Paul, could we click to the next slide?

So as I said, we've done, sent two surveys. Last year we sent the survey as a PDF attachment, which was actually very straightforward. We created it and then sent it as an attachment and the respondents just has to open the PDF, fill out the survey, on the bottom there was just a button which said submit, and it automatically, without even saving the PDF, it got attached to an email address which was mine which was embedded there, and it came through. So that was pretty straightforward.

This year we found out REDCap, which is an online survey software, and VIReC is hosting it, which is very user friendly and really helpful. One main reason being that it provides branching logic. So have you used it, and then you can go and ask questions. If you haven’t used it, then you ask those specific questions. So it’s very user friendly and saves a lot of time. So that’s the format we used for this year’s survey.

Both these surveys were administered in collaboration with VISN 21 Pharmacy leadership. They sent out emails letting the respondents know at these facilities and reach out to a total of eight facilities in VISN 21. And the surveys were completed by the PBM manager or chief, pharmacy service. And fortunately we got 100% response rate, which was very helpful [unintelligible 16:55] data for each facility.

Our main goal was, first of all, about the medication safety dashboard. We wanted to know who are the users, so all eight facilities are using the medication safety dashboard, and all of them find it useful. Half the facilities said somewhat useful and the other half said very useful, which makes sense because they are current users of the dashboard.

Can we, so then focusing on the five dashboards within the medication safety dashboard, which are the spironolactone, lithium carbonate, hypoglycemia, oncology, and opioid monitoring, we asked them are you using each of these specifically? Are you currently using it? And if you are using, have you found them helpful? And yes, so actually all these dashboards are being used by all the facilities and they have reported they see the perceived value in terms of helpfulness of these dashboards.

Next we look, wanted to see that the dashboards which are being, if the facilities reported yes, they are using the dashboard, we asked them for each of the seven implementation strategies. Are you using this specific implementation strategy? And then we asked them, if you are, is it useful? If you’re not, then what are the barriers for not using it? So this slide actually focuses on the use of these specific implementation strategies, and as we can see, that for hypoglycemia, opiate monitoring, and lithium carbonate, facilities are pretty much using all seven strategies. Of course there’s more use of provider education, academic detailing, and patient specific care plans, but yes, all these strategies are being used, which is very interesting.We will be going in and out. Our next step is to go in and out, seek more information about how exactly are they using it. But yes, this is very valuable data for our purpose.

Now among those facilities which said that no, they’re not using the dashboard for any of those five measures, we asked why not? What were the barriers? And we listed these four specific barrier values along with the other category. And the four barriers were need help from other services or departments to implement, time consuming or not enough staff, don't believe  
this would work, don’t believe this is appropriate work for a pharmacist. And we found that pretty much, for academic detailing, draft orders, and patient mailings, most of the barriers were identified for these three implementation strategies.

So before we move to the next MedSafe QUERI project, which is medication use evaluation tracker, or the MUET, I just wanted to tell you the difference between the dashboard or the first project, VISN 21’s Dashboard. What is a dashboard vs. what is the MUET? So dashboard patient data is updated every 24 hours, so it’s as current as possible. In the MUET, MUET is actually an application and the program is made up of individual initiatives. So MedSafe QUERI is focusing on evaluation of five search initiatives and here the data is updated every three to four months based on the specific initiative. So yes, now the next.

Based on our collaboration, this is the national pharmacy benefits office we are partnering for this project. And they are now starting, developing a dashboard just because of value of getting real-time data, which is so important. Thank you Paul.

Dr. Paul Heidenreich: Okay, yes. Thank you. So what I’m going to show you now is a type of analysis we’re doing with that VISN data, but it’s basically the same type of analysis done with the MUET data where we both have, basically the pharmacist is giving a list of patients who are out of range or missing labs and the question is what are they going to do, how do they respond, and are they effective? So again, we focus, here’s just an example is dimethyl fumarate. Again, we said that was for multiple sclerosis treatment. It has a very, well, not too common but potentially fatal problem of multifocal leukoencephalopathy associated with lymphopenia. For that reason, the white blood cell count is monitored and the medication is stopped if needed.

And then to determine which strategies are best, again, we do a similar process of having the facility tell us exactly what is being done, obtain those details, and then the ultimate goal is not just to learn something but then to change practice. So the idea was if we do find things that clearly are working, we would like to test use out and basically encourage or facilitate adoption in a stepped wedge randomized design. That would be the goal. So over the course of a year, we would potentially be encouraging all facilities but we could test that facilitation in a study.

So again, Anju had mentioned briefly that the medication use evaluation tracker, rather than having a dashboard, gets a patient list and then the pharmacists decide how to intervene. And in this case we surveyed nationally 118 VAs, again, about the similar seven interventions that are commonly done by their pharmacists at different facilities. And then provider education, academic detailing, electronic reminders. In this case putting in draft orders for testing, so that goes under the provider's name so when that provider logs in they say, oh, you have a draft order to test for a WBC count. Do you want to sign this order or not? And other studies have suggested that can be effective. Requesting a care plan from a provider, what are they going to do? As well as two things focus on the patient, calls and mailings.

And this sort of shows our results from that national survey where we have on the left the intervention that the pharmacist could do. Then we show what fraction of pharmacists who completed our survey said they were doing this. And then you see, we then actually looked separately at what was the mean rate of WBC monitoring where ideal would be 100%. And we'd be using that or not using the intervention and then a p-value for statistical significance. And what we found was provider education and academic detailing were the most significant and then some borderline effects for requesting a provider management plan and putting in draft orders. So it was promising. Again, that is you looking at each one individually.

When we actually look in a multivariate analysis, since we could imagine some of these things have some correlation and they may not be independent from each other, we found that provider education, academic detailing were independently predictive, and those who did academic detailing in particular had a 17% higher rate of monitoring than those not using it, controlling for all other interventions. So those, this is an example of how you could then potentially identify interventions you might want to spread.

As a side note, again, we also looked at the number of interventions and monitoring and it’s also seen that facilities that were doing the most actually had the greatest use. So facilities doing nothing, just sort of getting the list and saying, well, we just file that list away, had about a 40% as compared to facilities trying six. There was one facility trying six interventions, but if we include maybe the four, five or six, you’re getting rates over 60%, so it was, clearly the action was working and it looks like we have some targets.

Now not all facilities participated in this monitoring. And it would be a similar thing with the dashboard. Many facilities just say, well, we don’t bother to use that dashboard. And so reasons why are in this case many said, well, we just don’t have enough patients taking that drug so we don’t worry about it. A third felt that providers already knew what they needed to know. There was no opportunity to educate or academic detail. A few, one thought this was not really that big of a safety issue. And so we can see at least for those 14 that said we don’t want to participate anymore, we had a reason.

For those that never participated, I think there was the issue that it’s just too time consuming as well as some of the other issues we saw before. I think importantly, 15% felt there was not, no real-time data, that this was somewhat delayed, suggesting that a dashboard, again, this is not using the dashboard, a dashboard would be much more effective.

So again, our plans going forward for that are to evaluate these initiatives related to physician education, standardize that, potentially do this as another academic detailing project within it or as a supplement. At a minimum, we would see every facility, in fact we’ve already announced some of this. They’ve already received passive intervention, if you will, where we just provide them with the results of this analysis. And then work with, as we said, doing the stepped wedge design with a random sample of VA facilities initially and try to push that to 100% over the course of a year.

So at this point I’m going to shift gears about another way we’re going to try to intervene. And that is using actual built-in clinical decision support into the dashboard. And again, I want to say this is work done by Mary Goldstein and she’s not available today to present it, but again, I think some very exciting work. So this sort of builds on some existing health informatics tools within the VA. The VA has its own clinical dashboard that is focused more on the PACT team and it also takes advantage of a clinical decision support system Dr. Goldstein developed for some common primary care issues, also referred to as ATHENA clinical decision support, so trying to combine those two.

The first aim of this was to implement clinical decision support into the dashboard for management of four things, or five, sorry, diabetes, hypertension, hyperlipidemia, kidney disease, and heart failure.

The second aim was to identify key opportunities within the workflow for providing clinical decision support. So for that, one would obtain stakeholder input about how a clinical work, the PACTs would use the dashboard, identify those with effective practices, and come up with a list of several practice examples where the dashboard was used effectively.

The third aim was to establish then continuous quality improvement cycles for providing clinical decision support, so then taking that data that we [unintelligible 30:46] to, fine tuning that presentation of the decision support to fit within the clinical workflow. Then you go and get clinical stakeholder satisfaction. Are the PACTs using it? Is it helpful? Evaluate their assessment and usefulness and then repeat until we get something that we think is working well from all stakeholders’ views.

The conceptual model, if you will, for primary, using this for primary care teams is that one, say in the upper left there’s a panel of patients at any facility. This data is then captured in the warehouse. One can develop quality indicators and performance and quality indicators for different PACT teams that can then be, then the dashboard can be created. This will be then monitored by someone on the PACT team. When they go to it, the clinical decision support pops up with a recommendation for whoever is managing that. If things are, a PCP is required to be involved then they could be at that point. So it would involve the whole care team, a PACT team, and not just requiring, say, the physician to go look at this.

The idea is that the PBM clinical dashboard contains information for the PACTs to monitor performance for chronic care and then flags those patients whose clinical data are not meeting the performance measure targets. The support system would have patient-specific recommendations. So not just say, oh, well, for heart failure beta blockers are good. It would know that this person was not on a beta blocker and it would know that they did not have potential contraindications and could be much more specific for that patient and then combine those in such a way the patient’s data that don’t meet the target and we can show recommendations about what to do next.

So I think it’s important to recognize that health information technology is rarely adopted in isolation. The adoption could be highly variable. One facility may like it, another may not. And that using this should be part of an overall quality improvement program as opposed to a single isolated process.

And this is some work by Berg and others just showing how clinical decision support has to really fit in with so many different things, not just having the IT capability and the lab data, that somehow you have to work with the data managers, the clinical champion, potentially there’s researchers wanting to evaluate this. There’s maybe some security issues that have to be involved, so all of these things have to be considered, privacy issues as well.

So in order to do this, we need several things. We need to know the current state of the workflow. We need to know how much change of workflow is feasible. The new technology needs to allow for that change in workflow. And there may be limitations due to the extent in which it needs to integrate with existing systems. And of course, there’s going to be varying willingness of staff to change work habits. And any clinical decision support needs to take that into account.

So I think it’s clear that health information technology that’s too far removed from how healthcare providers do their work is going to be rejected, that the developers have to understand and respect that clinical workflow in order to get the HIT to be used. However, if it is used, it could potentially streamline and get beyond some routine tasks, which could actually improve and increase workflow and may be able to support changes in work brought about by other factors such as a need for better population health management.

So in order to deploy it, obviously we need to test its accuracy. And that starts with extensive literature. I should say there is extensive literature and standard training and testing of computer systems in general as well as those evaluating clinical impact of CDS, but little is published on the topic of actually testing the CDS support prior to development, and no general consensus exists on what is adequate testing. At what point is it ready for deployment?

So guidelines are rarely precise enough to program into computable formats without further specification. So therefore, clinical experts are needed to look at this CDS output. And for those of you who try to do this, you look at a guideline, it seems fairly specific, but often there’s a lot of other details that have to be added in if you’re going to actually make a computer-based decision support algorithm. So one needs to come up with a detailed “rules” document. You want this to be reviewed by the clinical experts, and then you have to run it in the background and see what shows up and see if each of these recommendations actually make clinical sense.

So we’ve been working collaboratively with leadership at VISN 21. CDS was in their clinical dashboard. The pharmacy, as we said, the pharmacy dashboard in 21 has the clinical dashboard and displays all the information while patients' clinical data shows failing performance on, say, the HEDIS measures such as controlling for blood pressure. The CDS is being developed to provide patient specific recommendations such as medication adjustment for necessary lab tests and patients are not meeting a performance measure. So again, I think it’s a very exciting possibility here. The first step now then is to find out what is actually being done and what is the potential for use. And so this was a survey that I’m going to turn over to Anju again to describe. So Anju, go ahead.

Dr. Anju Sahay: Thank you, Paul. So yes, we wanted to do a formative evaluation specifically at the developmental phase to make sure, first of all to understand the needs of the stakeholders, what is currently going on, what would be the right way to implement it, to roll out the CDS system so that it’s effective and valuable. So like Paul said, the CDS is imbedded within the clinical dashboard. So the main aim of the survey which we conducted earlier this year was to understand the comfort level of the respondents using this technology and information systems and dashboards and also to understand the value of the clinical dashboard which is being used to manage patients, because this would be in the context, the CDS is embedded within the clinical dashboard, so are these providers actually using them, why are they using, how are they using it, and for what reasons are they using it? If they're not using the clinical dashboard, then how are they managing the patients?

So given that context, we conducted the survey, which was a cross-sectional survey, web based. Again, we used the REDCap survey format, which was again very helpful, particularly with the branching logic. This project, the CDS project, is focusing on the rollout of the CDS in VISN 21. So we selected two sites here. And also this project is focusing on use of the CDS by PACT teams in primary care, so in PACT teams we focused on three groups of respondents which were the primary care providers or the PCPs and they were about half of them, formed about half of the respondents. Then PACT nurses, which was slightly more than one-third, and the rest were pharmacists. The PACT teams also have other team members which we discussed. We said these are generally the main people who stay with a PACT team, so let’s talk to them and understand what’s going on. We had almost a 50% response rate for the survey.

One thing I forgot to mention is when we [unintelligible 40:06] these two sites, we get the data from the two sites, so these are the medical centers as well as the CBOCs like Palo Alto has care division. We have Modesto and San Jose and Capitola, and then we have other CBOCs, so we get the data from all of them because the context makes such a difference whether, how the clinical dashboard and potentially the CDS will be used at the medical center, was it a CBOCs, and what worked and doesn’t work? So yes, so we get that into account too.

The first question we asked is how comfortable are you with information and communication technologies, because initially we took it for granted that they’d be fine, but it was like no, let’s ask because that forms the baseline of comfort level with technology and consequently how much they use it and in terms of other technology and especially dashboard in our context. So here are our data for site one and site two, where site one is definitely, two-thirds of the respondents are comfortable. Another question we asked is does the use of the dashboard help the respondent monitor care for the patients more effectively? And both sites pretty much agree, almost half of the respondents agreed to this, so that was very interesting that yes, the clinical dashboard, the dashboards in general are meaningful to these respondents to manage better care for them.

Then we also wanted to understand, like I said, the clinical dashboard, the use of the clinical dashboards. So we asked them, do you use the clinical dashboard currently? Used it in the past? Not currently? Never used it? Or don’t know/not sure. And at both sites, so majority of the respondents are using it currently; and then the next group is yes, they used it in the past but not currently; and then the few who said never; and then again a very small group that said they don’t know or not sure. So site two, as we can see, the respondents there are using it, more respondents are using it currently, and that links to an anecdotal evidence which was shared with us by the VISN 21 pharmacy leadership that at this site, site two, there was a provider who really liked the idea of dashboards and he was using it and he was encouraging other providers there at his site to use it. So he basically was a local champion, and so we all know in implementation the value of local champions and facilitation, so that was definitely reflected here that yes, it makes a difference, but yes, so in terms of imbedding and using the CDS within the clinical dashboard. So yes, we have a lot of respondents who are using the clinical dashboard. So it held much promise for us.

Then we asked, among the current users, we asked them what is the primary purpose for using the clinical dashboard? And we gave them three specific, we gave them other reasons too, but these were the three main reasons. And almost half of them are using it to identify high-risk patients, almost as many to track performance measures, and then to aid in medical decision making. And that was very valuable to us because the purpose of CDS is to identify patients on your panel and for population management too, but at the same time for your panel, on the panel who you'll see probably the same day or next week when you’re pulling the patient list from clinical dashboard to prepare for them. So it seemed like this is the plan for to roll out the CDS is in the right direction.

Dr. Paul Heidenreich: All right.

Dr. Anju Sahay: Paul, I just wanted to add a little more. In the survey, we asked other questions too, which are not included here, but just to give you an idea what sort of data we’ve been gathering is we, since the CDS is being used primarily with PACT teams, we asked them, does your PACT team use the clinical dashboard to review patients? If yes, does your PACT team use the clinical dashboard in pre-clinic huddles? And otherwise if not, then how do they use it? When do they use it? How often do they use it? Who among the PACT team members uses the clinical dashboard to review patients’ data? And if the PACT team is not using the clinical dashboard to review patient information, then how does your PACT team prepare for upcoming appointments? When does your PACT team prepare, when does it prepare? How does it prepare? And what are the other methods, in general, are being used to manage performance measures, irrespective of whether or not they are using the clinical dashboard? So this is really rich data which is being analyzed right now and we’ll share it once it’s available.

Dr. Paul Heidenreich: Thank you, Anju. I’ll mention one last thing that is important to gather as well. And that’s if you’re ever going to implement these things, the managers, administrators, say, in another VISN will need to know particularly what is going to be the cost to introduce such a system. So that’s part of the process as well, particularly if a new site is going to connect their system to data tables, there’s an expense. There’s this typical one-time cost of putting that all together, developing the CDS materials. And then there’s ongoing costs incurred when it’s integrated into the dashboard of the new site. So we need to determine the cost of all of these things if we’re going to, I think, successfully convince other places to adopt such dashboards.

So in summary, again, VISN 21 has been using a medication safety dashboard for a while. We showed some examples. That’s one of several clinical dashboards including one that’s directed at PACT. We also found that how the facilities use these dashboards vary a lot, particularly in those interventions to improve care, and that those interventions are associated with better or worse performance in terms of safety monitoring and that surveying and linking results to outcomes is the way to identify these potential best practices. Finally, we talked about our promise of adding clinical decision support to supplement these other pharmacy-led interventions. And I think data Anju just showed that there are, even at just a couple of sites, there is some variation in comfort in using this and in how they’re using it, so it won’t be a one size fits all implementation strategy.

So at this point I’ll give you just our contact information if anyone has additional thoughts or wants to contact us offline. Here is the information. Particularly Mary Goldstein, again, is leading the clinical decision support program. So I’d like at this point to thank everyone for their attention and will open it up for discussion or questions.

Moderator: All right, thank you, Paul and Anju. We do have a few questions here from the audience. If you do have any additional questions, please send those in now. We still have 10 minutes left in our presentation time. So the first question for you guys. Anju, what was the online survey tool that you used?

Dr. Anju Sahay: This is called REDCap and it was developed by the University of Virginia, but VIReC has the license and they actually provide tremendous support and very user friendly and [audio glitch 49:16] this tool, so it’s an online service, but the big advantage is it includes branching logic. And as you’re designing the survey in it, you’re also creating variable names and all, so as the data is gathered it typically gets exported into an Excel spreadsheet. Basically in a database and then you can import the data however you want. But it’s REDCap and VIReC hosts it, and so it’s on the VA server, it's intranet so there’s data security also. And if anyone, you can contact VIReC. Otherwise you can email me and I’ll give you the contact information to get connected.

Moderator: All right, thank you. The next question.

Dr. Anju Sahay: May I interrupt? Sorry. Actually VIReC had a Cyberseminar on REDCap, so it’s there on the HSR&D archives. So that would also be very helpful if people want to know more about it.

Moderator: All right, thank you. Okay, the next question. Who gets the draft order? The PCP or the prescribing provider? What if the prescriber is a trainee who rotates away from the VA?

Dr. Paul Heidenreich: Yeah, I think those are excellent questions, and we didn’t, I will say for, particular for the DMS we didn’t specifically ask yet who gets that. I can tell you in other situations it’s been the prescribing provider because as you can imagine for something like multiple sclerosis, which would potentially be managed by a specialist, it could be very likely that the primary care provider would not do it. Now I think, although some other systems have done both, particularly if you’re talking about a lab monitoring thing where you’d say both to the primary care, and if separate, a prescribing provider. But I think, yeah, that’s a very good question that you need some backup because there often is a change in providers over time.

Moderator: All right, thank you. We have one last question. What was it? Does the clinical dashboard distinguish between HF with reduced ejection fraction and HF with preserved ejection fraction? And if so, how?

Dr. Paul Heidenreich: Yeah, I think that’s an excellent point. In the past it has not, but you may be aware now that nationally there is now ejection fraction data in VINCI that has been created through natural language processing of all of the clinic notes. And it’s been tested. There’s some papers out there on its validation, and it’s primarily been used for research, although my understand is it’s being used in the CART-CL national catheterization laboratory database at the VA, that they pull in the last ejection fraction from that. So there is now the potential to use that ejection fraction from that source since, while individual facilities may have that data, it’s not VISN-wide in VISN 21. That’s an excellent, important question we really need to have to provide good heart failure clinical decision support.

Moderator: All right, another question just came in for you guys. How can this dashboard be available for a facility from another VISN?

Dr. Paul Heidenreich: Well, I think one can contact the pharmacy benefits management about potentially getting in touch and how one could use this and what it would take to implement it at your facility. One of the promising things is nationally, pharmacy benefits management is heading towards dashboards. And so we’re hoping that over time it won’t be a VISN-level thing and that will be a growth in the national ones that will be available for everyone.

Moderator: All right, thank you both so much. Those are all the questions we have. To the audience, if you have additional questions, you can contact the presenters directly. Their contact information is in the slide deck. You can join us for the next session in VIReC's Using Data and Information Systems in Partnered Research Cyberseminar series on Wednesday, October 24th, at 12 PM Eastern. Dr. John Piette will be here to present Improving Data Collection and Behavior-Change Support via Veterans’ Mobile Phones. We hope to see you there.

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