Introducing the Rural Chronic Obstructive Pulmonary Disease Toolkit Transcript – 11/20/19

Kristine Sande: Good afternoon everyone. I'm Kristine Sande, and I'm the program director of the Rural Health Information Hub. I'd like to welcome you to today's webinar. We'll be discussing the rural burden of chronic obstructive pulmonary disease, introducing the new rural COPD toolkit that's on RHIhub and hearing about some great work that's being done in rural places to address COPD. Tomorrow is National Rural Health Day and this is also World COPD Day today, and it's National COPD Awareness Month, so this seems like a great time to be discussing rural COPD.

I'll quickly run through a few housekeeping items before we begin. We do hope to have time for your questions at the end of today's webinar. If you do have questions for our presenters, you'll have an opportunity to submit those at the end of the webinar using the Q&A section that will appear on the lower right hand corner of the screen following the presentations.

We have provided a PDF copy of the presentation on the RHIhub website and that's accessible through the URL that's on your screen. We have also sent the link via the chat function. If you do have technical issues during today's webinar, please call WebEx support at 866-229-3239.

Now, it is my pleasure to introduce our speakers for today. We will start today's webinar with opening remarks from Grace Anne Dorney Koppel. Grace Anne is an educator, a behavioral scientist, and an attorney. She was diagnosed with severe COPD in 2001, which led her on the path to COPD patient advocacy and activism. Since 2006, she has devoted her training, knowledge, and professional life to achieving better outcomes and quality of life for the 30 million Americans and the hundreds of millions worldwide who have COPD.

She has been president of the Dorney-Koppel Foundation since 1999. One of the missions of the Dorney-Koppel Foundation is to provide startup funding and strategic guidance for pulmonary rehabilitation centers in areas of high COPD prevalence, primarily in rural America. The Dorney-Koppel Foundation has co-founded 12 Grace Anne Dorney Pulmonary Rehabilitation Centers in five states. Grace Ann served on the board of directors of the COPD Foundation until November 2019 and is its immediate past president. She currently serves on the COPD Foundation's Board of Governors of the Patient-Powered Research Network. She is a council member of the National Institute of Health's National Heart Lung Blood Institute Advisory Council.

She was the national spokesperson for NHLBI's Learn More, Breathe Better campaign from 2007 to 2016. Grace Anne has brought public awareness to COPD through appearances in many national publications and programs including Newsweek, CBS Evening News, ABC's Good Morning America, and NPR's Talk of the Nation to name just a few. In fact, just last week Grace Anne and her husband Ted were featured in a CNN article about their work to address COPD including the rural aspects of that work.

Next we will hear from Tricia Stauffer. Tricia is a principle research analyst at the NORC Walsh Center for Rural Health Analysis. Tricia designs and implements evaluations of community outreach and engagement efforts for public health programs. Her research has focused on public health and health policy.

Stephanie Williams is a recognized leader and educator in respiratory therapy. Over the course of her career, she has designed and implemented pulmonary rehabilitation and respiratory programs in a wide range of patient care settings. Stephanie's curiosity, commitment to patient

engagement, and dedication to advocacy has allowed her to play a central role in numerous areas of respiratory innovation.

Finally, we'll hear from Donna Dittman Hale, the executive director of Bay Rivers Telehealth Alliance in Rappahanock, Virginia since September 2014. She is currently the principal investigator for Hearse's Federal Office of Rural Health Policy Funded Telehealth Network Grant Program for School Telehealth, a Rural Healthcare Outreach Services Grant, Rural Community Opioid Response Planning Grant, and a USDA Distance Learning and Training Grant. Bay Rivers Telehealth Alliance was named a Rural Health Community Champion in 2018 by HRSA's Federal Office of Rural Health Policy for the use of evidence-based and promising practices. She has spent her career working with consortiums, nonprofits, and healthcare organizations to create common purpose solutions to substance use disorder, HIV, chronic disease, lifecycle and holistic health challenges.

With that, I'll turn it over to Grace Anne.

Grace Anne: I'd like to start with a big thank you because the modules that have been produced for the Chronic Obstructive Pulmonary Disease Toolkit are truly outstanding and I want to complement both the Federal Office of Rural Health Policy and the NORC Center for Rural Health for doing this because there is a great need for it that we were not aware of until the CDC actually starting in 2015 began to look at the enormous, enormous difference between rural and urban COPD. What they found was shocking.

I've used a quote from St. Augustine and I certainly don't want to correct St. Augustine and hope does have two beautiful daughters, anger and courage. Anger at the way things are, and courage to see that they don't remain the way they are. The point is, I'm not sure that anger is the right word. It is shock because we did not realize the extent of the burden of COPD in rural America until the CDC dug into the work and showed it to us.

The reason that we're here today and the reason that there is a rural toolkit now is that 3.5 million people living in rural counties have been diagnosed with COPD, and that's the tip of the iceberg. There are at least that number who are not diagnosed in rural America. It is a health disparity. You can see these dark areas on the map of the United States. In the darkest areas, 8.5–15.6% of people have been diagnosed with COPD. You can double that number because of the undiagnosed. Even the lighter blue is troubling, 7.2–8.4%. There is very little white on this map. This is done at the county level. Janet Croft at the CDC really dug deep into the data in 2018 and 2015. You will see the darkest areas are in Appalachia and the south. But there is no state that is without a dark area.

Notice this graph. Overall, in large metro communities, the prevalence of COPD is 4.7%. It's 8.2% in rural America. That is double. Again, yes. Look at large metro center and large fringe, look at micropolitan and rural. These graphs speak for themselves. Doctor diagnosed COPD among adults, again high. But here is the shocker, it's 8.4% with the highest prevalence 15.7% in rural poor communities, another health disparity. It is the poor, it is the rural poor who are truly suffering with COPD. This is true even among never smokers in those communities. We have 12.5 million people in the United States based on the Johns Hopkins study that's cited here that use coal or biomed fuels as their primary heating source.

I do want to end on a very positive note because we are here today because we have an evidence-based guide and models for how we can begin to address this problem in rural America. This is one of my favorite quotations. "Hope is like a path in the countryside. Originally, there is nothing. But as people walk this way again and again, a path appears." This is part of that path. The path is that we must A, become aware of the problem. B, use evidence-based solutions. C, eliminate this disparity because it is something that is an epidemic in rural America. Until recent years, and the work of the Center for Disease Control, we did not know it existed.

Well, we don't have that excuse now. We do know that it exists, and we must have the courage to address it. Thank you. Now, we're going to hear from Tricia.

Tricia Stauffer: Thank you so much, Grace Anne. Thank you Kristine, for having me today. Today I am happy to introduce to you guys our newest toolkit on the website, the Rural COPD Toolkit. The toolkit was developed as part of the Rural Health Outreach Tracking and Evaluation Program, which is funded by the Federal Office of Rural Health Policy within Health Resources and Services Administration. The product is conducted by the NORC Walsh Center for Rural Health Analysis in partnership with the University of Minnesota Rural Health Research Center. NORC and the University of Minnesota are also working with the National Organization of State Offices of Rural Health as well as the National Rural Health Association to disseminate findings from the evaluation.

The Rural Health Outreach and Tracking Evaluation Program is designed to monitor and evaluate the effectiveness of programs that are funded under the Outreach Authority of Section 330A of the Public Health Service Act. Outreach Authority grantees seek to expand rural healthcare access, coordinate resources, and improve quality of care. Grantees are working as part of a consortium with healthcare providers, schools, tribal healthcare grants, and community-based organizations.

A key focus of our work has been to establish a rural evidence base including evidence-based toolkits that are based on the experiences of grantees and of other rural programs. Evidence-based toolkits are an important step for disseminating successful programs. Our toolkits have three aims, the first to identify evidence-based and promising programs. The second to study the experiences of these programs to figure out what's working in rural communities and why it's working. Then lastly, to disseminate best practices from their experiences so that future grantees in other rural communities can learn from these programs and replicate them.

Today, we're going to focus on our new Rural COPD Toolkit. As Grace Anne discussed, COPD is disproportionately affecting rural communities. In response, rural communities have developed real innovative and diverse COPD programs to overcome those challenges to address service delivery and provide care. In general, we found that rural COPD programs are focusing on prevention and risk reduction, pharmacologic treatment, non-pharmacologic treatment, and palliative care. In the Rural COPD Toolkit, we share these evidence-based and promising approaches and resources to help other rural communities implement, expand, and sustain their own COPD programs.

Next I want to show you how to navigate through the toolkit. You should have a link to the toolkit and be able to find it. You can also just Google rural COPD toolkit and you should be able to find it pretty easily. On the screen, you'll see a snapshot of the main page of the toolkit. It's organized into different modules as you'll see on the left hand side of the screen in the menu. Each module includes information about resources for planning, implementing, evaluating, sustaining, and disseminating programs in rural communities. There's also a program clearinghouse that contains information about promising rural programs.

Today, I'll focus on module two, our COPD program models. Module two describes evidence-based and promising program models that are being implemented in rural communities. Next, I'll go over each model. I'll just give a really brief overview, but you can get more information in the actual toolkit online.

The very first category of models is the prevention and risk reduction models. Smoking is the primary risk factor for COPD and can contribute to diminished lung function among COPD

patients. Among individuals who smoke, cessation is one of the most effective ways to manage COPD symptoms and to reduce associated morbidity. The second model is about vaccinations. Most individuals with COPD are strongly recommended to receive certain vaccinations that provide protection against conditions that might affect the lungs. While there's not a vaccine specifically for COPD, vaccination against viral influenza and streptococcus pneumonia can provide secondary prevention by preventing or minimizing the severity of COPD. Flu and pneumonia can impair lung function, so individuals with COPD are at a higher risk of complications from those infections.

The last model in this category is related to early diagnosis. Early diagnosis is related to more favorable outcomes and an improved quality of life. Spirometry is a diagnostic lung function test that's used to determine how well the lungs are working by measuring how much air and how quickly a person is able to breathe in and out. Spirometry is required to make a clinical diagnosis of COPD. For many rural health care providers, diagnosis and treatment of COPD were not significant components of their training, and so typically, spirometry can be underused in rural communities.

The second model is related to pharmacologic treatment. In addition to lifestyle changes and behavior modifications, pharmacologic treatment can help patients to manage their COPD as well as avoid or mitigate exacerbations. Bronchodilators are central to a COPD treatment regimen and most are being taken using an inhaler. This model also discusses fast acting treatments or rescue medications that can be taken at times of acute lung stress. Then, in addition to medications, we also discuss the use of supplemental oxygen for COPD patients. This is particularly for patients with low levels of oxygen in the blood.

Our third set of models focuses on non-pharmacologic treatment. These models are typically used in conjunction with medications to improve lung function, reduce hospitalization, and improve overall quality of life. The first, pulmonary rehabilitation is an intervention that focuses on the adoption and adherence of health promoting behaviors. They typically feature a team of healthcare professionals across a patient's entire care portfolio. This would include specialists like respiratory therapist, dietician, nutritionist, physical therapist, occupational therapist, and psychologist. Pulmonary rehab is appropriate for most individuals with COPD and typically includes exercise training as well as an educational component.

The second model, the chronic disease management model, is based on the chronic care model. Components of this model include links to community resources, health system support, and self-management.

The last model focuses on palliative care. The topic of palliative care is frequently avoided because many people confuse palliative care with hospice. Hospice is a type of palliative care that is generally designed for patients with life expectancy shorter than six months. Understanding the differences between the two terms can make the topic a little bit more palatable when discussing treatment options. Palliative care services are designed to make symptomatic patients as comfortable as possible while managing their COPD. It typically occurs alongside treatment. It can help relieve suffering by offering help with symptoms like shortness of breath, fatigue, pain, depression, and anxiety. This care approach really aligns well with COPD treatment because COPD is a highly symptomatic condition and it often intersects with some pretty burdensome comorbidities, so a palliative care model can really to improve a patient's whole being and quality of life.

I want to conclude with a few of the lessons that learned while creating this toolkit. First are some of the key barriers that we identified for facing COPD in rural communities. The first is the

lack of specialty pulmonary services and then the lack of transportation as well. While primary care providers are a critical component of COPD care coordination, specialty pulmonary services are really necessary for comprehensive treatment. But there's often a lack of specialty pulmonary services specifically for COPD in rural communities. Rural patients may find themselves needing to travel some pretty far distances in order to just receive care. Then limited access to specialty care can negatively impact COPD treatment adherence as well as disease management.

Next, patients with COPD typically have multiple comorbidity. Patients may have to manage a large quantity of medications for multiple conditions. Medication reconciliation is a critical component of COPD management. Patients need to be taking the correct medication at the appropriate dosage and the appropriate frequency. Pharmacists can be in a unique position in rural communities to offer assistance in medication reconciliation and medication management.

Another lesson learned was the importance of planning for sustainability. It's really key. Consideration for encouraging sustainability of programs that we heard repeatedly in our interviews was the importance of creating partnerships with stakeholders and other community members and maintaining open lines of communication throughout the program and even at the end of the program.

Another key lesson learned was about smoking cessation. While cigarette smoking is the leading cause of COPD, it's also important to consider other COPD causes in rural communities like occupational and environmental exposures. Twenty to twenty-five percent of COPD cases are not related to cigarette smoking. Long-term exposure to irritants like chemical fumes, irritants related to farming and coal mining are especially important to be addressed in rural communities.

Lastly, COPD disproportionately impacts specific populations. Knowing which sub-populations are at a higher risk for COPD can help practitioners target the appropriate populations and really tailor their programs to high-risk patients. The toolkit includes considerations for several different populations including older adults, women, industrial and agricultural workers, tribes, individuals with low economic status, and people with disabilities.

Thanks for your time today. We hope you'll visit the toolkit and find it useful. If you have questions about it, there's contact information in the toolkit itself. You can also reach me at the email address on your screen. Next, I'm going to turn it over to Stephanie Williams who is going to tell us about one of the programs featured in the program clearinghouse, the COPD Foundation's program, Touch COPD.

Stephanie Williams: Hi, thank you Tricia. Thank you for sharing all that information about the toolkit. That's wonderful. Thank you for allowing me to join the group today. I am from the COPD Foundation. My name is Stephanie Williams, I'm a respiratory therapist.

Just a little bit about the project and where it came from. A few years back I was given the opportunity to come and work for the COPD Foundation as part of a pilot project where I would get to go out into the most rural parts of Tennessee and assess where they are education and information wise, and then help to support those communities. What I did was I would just choose a county and I would just canvas that community, those communities within that county as much as I possibly could. I would visit senior citizen centers, I would visit doctors' offices, I would visit hospitals, I would visit nursing homes, and just see where those different organizations needed the most support.

We were really focused on trying to increase education as well as improve numbers for alpha-1 testing, which is another cause of COPD. We had multi-focal things that we were working on there but I kept seeing over and over and over that we were really struggling with COPD patients as they were leaving skilled nursing facilities. I kind of just stored that in the back of my mind, skilled nursing really needs a lot of support with COPD. When given this opportunity with the NHLBI and Learn More Breath Better campaigns, this was something that really I felt like we needed to address.

This was our basic hypothesis, if we could improve support for skilled nursing facilities staff and for patients, could we make a difference for COPD patients in those communities? The first thing that we wanted to do because we are a patient-focused organization at the COPD Foundation, we wanted to make sure we knew what the patients were needing. We really wanted to make sure we always hear the patient voice. What I did was I created a survey. It was a really short survey and I posted it on our COPD Foundation 360° social network and just asked the question, if you knowing then what you know now, what do you wish you had known when you were first diagnosed? I also posted it on several Facebook pages for COPD support groups and just asked that question. What do you wish you had known when you were very first diagnosed? What do you wish people would know enough to tell you now?

These were just some of the questions that came back to us. Am I going to be on the same medication at home that I am here? Can you let me know if I'm doing my pursed lip breathing correctly? Which is a technique that we teach to help people overcome breathlessness and to use when they're exerting themselves. Does what I eat affect my COPD? These were all questions that came up over and over and over. I just compiled them into this graphic here, so you could see. Out of the hundreds of responses that we got from what is it you feel you need more help with, boiled down this is really what they were asking. Can I have pulmonary rehab? Can I sign up for it before I go home? What is pulmonary rehab?

Then understanding a little bit about the mindset of patients with COPD. Understand that I may be in complete denial about my diagnosis, understand that I don't even know what to ask. Given the fact that patients come to this diagnosis with very little information, and then most of the time don't have access to finding more information about their disease, these were all really important questions for us to try and answer for them or to at least point them in the right direction.

We also wanted to make sure that we were addressing the needs of the skilled nursing facilities that we were going to partner with. Some of their pain points were we have frequent unplanned discharges back to the hospital for these patients. Sometimes we'll think that they're doing okay and then all of a sudden they just seem to take a turn for the worse and we've got to send them right back to the hospital. It negatively impacts the hospital readmission numbers but then it really begins the strain that relationship between the skilled facility and the hospital. If the hospital begins to think that that facility isn't able to really support the patient their sending, they'll quit sending them. We really wanted to make sure that we kept those relationships intact especially within those small rural communities.

We understood too, that they had limited reporting protocols for detections of status changes in patients. They were unsure of what actions to take when the symptoms changed or worsened. Then there was very limited education for patients and families or lack of support altogether when they were being discharged home. Those were just a few of the things that we found when we were canvassing what do we need to address with this project.

One of the things about following up post discharge, as I just mentioned, one of the things I found was the hospitals in many of these rural communities are doing a fabulous job contacting patients after they discharge home. They've been in the hospital for a few days, maybe a week. They go home and the hospital has now a system in place where they can contact the patient two or three days out, check on them, make sure they're doing okay. But what about these patients who don't go home right after discharge? What about the patients that go to the skilled facilities to the SNFs after discharge. Those are our sickest patients. Those are the ones that will need the most support when they go home. There's not a way for hospital follow-up to happen because they'll never know when that patient discharges from the skilled facility back to their home. It just seemed like a great idea to help support the patient while they're recuperating and recovering in the skilled facility.

What did we do? We planned to have a partner. In east Tennessee, we found a skilled organization that had five different facilities within about 100-mile radius of each other, so we partnered with them. We said we will host two educational webinars and one in person workshop. What we would love to have from each of these different facilities was a multi-disciplinary team of four different individuals. We really wanted to spread it out and make it not so much about just the nursing staff. We really wanted to expand it and help it to incorporate dietary, housekeeping. We wanted everybody that had the potential to lay eyes on that patient during the day we wanted them to have an opportunity to come and learn more about COPD and how to support these patients.

They were supposed to create these teams. These teams were supposed to join us on the webinars, and they were supposed to come to the workshop. It was a tremendous undertaking to gather those teams and to find people who could be dedicated enough to attend all of those. We did have a little bit of difficulty in the middle of this, just in full disclosure, we had some struggle because of the administrative changes that were happening within this organization. We kept going back to them and back to them and making sure that they were still partnering and that we were still good to go. Every time they had an admin change, they could see the benefit in this program and they were willing to continue with us in this project.

The first thing that we helped them with was a reporting tool. Some of you may be familiar with this. This is an interact tool and it's available, you can find this program online, and it's really a simple tool. Anyone can use it, and so we did encourage them to have copies of these documents at easy to find locations throughout their facility. This would be something that nurses could use, environmental services, family members, anyone that came in contact with that patient would be able to look at this document and look at the patient and do a quick reporting in.

Let's say we had a patient that was in a room and the housekeeper came in and talked to this patient every single day, and one day they came in and found that they weren't really able to communicate with them. They would be able to take this document and circle talks or communicates less or seems different than usual and drop that in a box at the nurse's station and that way the nurse would say, okay this is something that I need to check on. We're seeing some status changes, some behavioral changes. This is something that we need to really follow up on because these small changes, while they may seem insignificant, a trend in a direction can be very problematic and it can be very problematic very quickly for a patient with chronic disease such as COPD.

We encourage everyone to utilize these tools. This was something that this organization, Sister Facilities, had used when reporting issues with sepsis. It was something that they were kind of

familiar with this tool but not fully immersed with it, so this was an easy one to really implement.

The other things that we did was we provided some educational resources for the nurses. These were things that, this one in the middle here that you see with the green, yellow, and red, that is a COPD action plan. It's an interactive tool that the patient can say I have trouble doing these activities of daily living or these are things that I don't have difficulty with and they can do a self-check every single day to see where they are and to see if they need to make any changes in their medication regimen. This is a very useful tool to give them as they are getting ready to go home. This isn't something to give them the very last day. This is something to give them in the middle of their stay. Let them become familiar with it, let them become familiar with how it works, how they do these self-checks. Then they can take it home and begin to implement that as part of their habit and their routine.

We also created a COPD reference guide and you see that there on the right side of your screen. I recognize the print is very small there but remember those questions in that very first graphic that I showed you from the patient voice. We really wanted to create a document that was addressing as many of those different questions and those fears and concerns as possible. There's a list of questions there that you can see in the pink box on the right side of that document for the patients to ask their nurses and their physicians before they're ever discharged from the facility home. Do I need home health? What do I do about my medical equipment? Really beginning to coach them into being proactive and not just recipients of healthcare but to really be proactive and ask questions about what's going to happen as I get ready to leave and go home.

We also provided the patients with follow-up and support after discharge. We provided these cards that were available at the nurse's station for people to have information about COPD 360° Social, which is an online support group for patients. We have over 40,000 enrolled in that support community at this point and we also had information for people to join our COPD PPRN, which is Patient-Powered Research Network. These are just ways for patients to feel like they are connected where they're not out there floundering, just out there by themselves trying to figure out all the answers. These were ways that we could really connect patients, especially in rural communities that may not have access to live support groups on site somewhere.

Then we also provided the COPD Pocket Consultant Guide and this is now available as an app, so it's very easy to use. There's a provider version of this and there's also a patient version of this. They may not have access to a laptop or a desktop computer, but they almost always have phones or someone in their family has a smartphone where they can download the Pocket Consultant Guide app and have an interactive action plan on their phone. It teaches about how to use their medications, about activity tracking and that type of thing. Again, they're not just being sent out back into the wild with nothing. They have something that they can take with them and help to learn more, so that they can function better throughout their lives.

These were just a few of the results that we got from the follow-up survey. The question on the left, do you feel that the information shared in this workshop has improved the care of COPD patients in your facility? Keeping in mind that we had not just nurses but we had dieticians, we had social workers, we had behavioral health specialists, we had respiratory therapy, we had all walks of life here that were represented in these multi-disciplinary teams, but overwhelmingly they said yes. They feel that these webinars and workshops really helped to improve the care of patients in the facility. The one on the right, did the information change the way you work with COPD patients that you care for? Again, you see even with that same spread of occupations, you can see that yes, it did change the way they worked with COPD patients.

What were some lessons learned from this project? I think we learned that we needed a bit more time, so that we could have more data to follow up with the long-term improvement and readmission rates for each community. We also wished that we had more time so that we could provide ongoing training and education for not just new hires, but that training that needs to happen yearly during the skills testing period to make sure that people are still focusing on all the right things when it comes to patient care with COPD. With that, I will turn the presentation over to Donna.

Donna Dittman Hale: Thank you, Stephanie. I'm really grateful to be here today and got such great information from Tricia and Stephanie and Grace Anne, wonderful presentations. I'm going to talk a little bit about our program that uses remote patient monitoring, patient coaching, and behavioral health resource in an integrated response to chronic disease management. The slides and the research that are shown here are based on the award-winning program that the Federal Office of Rural Health Policy acknowledged for our integration of evidence-based practices. But this program has been adapted to a primary care setting so that it's not just for patients who are discharged from the hospital but also many patients are now being signed up from their primary care physician's office.

Just a little background on the locations that we're talking about here. Bay Rivers Telehealth Alliance is an alliance of community-based and healthcare organizations serving eastern Virginia, that's the Chesapeake Bay right there that you're looking at. These are very rural counties east of Richmond and Fredericksburg south of Washington, DC about the size of the state of Delaware. We're operating in 17 rural localities and managing federal and state grants.

In this program, Bridges to Care Transitions, we have 134 patients who receive remote patient monitoring services upon discharge from the hospital. It also included care transitions coaching and chronic disease self-management education using telehealth tablet in the home. Twenty-seven of those patients also enrolled in the Health Ideas Behavioral Health Coaching. We had over 2500 people who participated in Community Chronic Disease Self-Management activities.

In researching our key groups, we compared patients who had the remote patient monitoring for 90 days. They also had coaches from Bay Aging who did home visits. If it was indicated, those patients also received the Healthy Ideas coaching to assist with mild to moderate depression and anxiety. What we found when comparing that to the non-grant patients who only had 30 days of remote patient monitoring is that 78% of our grant patients avoided readmission. There actually was only one readmission in the 90-day period. You can see that comparisons of the readmissions among those grant patients and non-grant patients. We did find that there was an increase in unscheduled physician visits. We substituted the admissions and emergency room visits reductions with unscheduled physician visits with the remote patient monitoring.

The grant program was able to save approximately $344,000 or $3,500 per person in hospital readmission costs for the 98 people who were studied. And then in addition, we estimate from the chronic and diabetes self-management programs, that resulted in an additional $106,000 almost $107,000 in savings or approximately $364 per person through the reduction in emergency room visits and readmissions.

Just to break down the data a little bit more, with the inpatient hospital admissions, we actually started out with folks with the diagnosis of pneumonia, chronic obstructive pulmonary disease, and congestive heart failure. We weren't getting as many enrollments as we'd hoped, so we added in those who were at high risk for readmission based on the use of the LACE index scoring tool for risk assessment of hospital readmissions. You can see how our study group, our

intervention group population broke down. Approximately seven of our patients had COPD and we estimate a very big savings by reducing the readmissions of approximately $10,530 per patient for each of those patients compared to the control group, which the savings was about $3,300 per patients. There's a significant savings not only in the dollars but in the time and the suffering of those patients.

This is really the model that we looked at, and you can see there the picture of the remote patient monitoring equipment that includes a blood pressure machine, a scale, and a pulse oximeter. Then there's a little tablet that asks the patient relevant questions related to their disease conditions. For example, a patient with COPD would be asked three or four questions each day regarding whether or not their coughing had gotten any worse, was there a change in their sputum, is it any thicker today, is there any indication of a chest infection?

Then as the daily monitoring of these vital signs is read by the nurse, if there's anything alerting to the remote patient monitoring nurse, she would call the patient to do a little triage of what is going on. If there was any problem with the patient, if she couldn't get in touch with the patient, she'd connect with the Bay Aging coach who could run by their house, so it's really a team effort.

This model, as we were taking a look at what worked and what needed fine tuning, and looking at how it could be sustained, we adapted this to a more population health approach by moving it from hospital discharge to primary care practices. The health systems that were involved with Riverside Health System decided to hire care managers, care coordinators to work with their patients at the primary care practices, so that we were enrolling people in this remote patient monitoring and coaching earlier in the disease progression and hopefully preventing hospitalizations versus not just hospital readmissions. So we were identifying patients at risk earlier on and providing that care management supports for enrolled patients.

Also, through the use of that little tablet, we were able to provide virtual visits for in-home support. Many of clients do not have smartphones or even home internet. They may not even have a very strong cell signal, but those tablets are actually cell activated and so there can actually be a virtual visit delivered using that little tablet that you saw in the picture. The remote patient monitoring is monitoring the daily biometrics and there are also disease state consultations.

Since this slide was provided and this program has been implemented, the health system decided to also hire a respiratory therapist and an RN, so they now have two care coordinators, care managers with one specifically designated for patients with COPD and the other care coordinator handles everyone else. They are working closely with the Bay Aging to coordinate and at our local community services board, which is a behavioral health organization serving the region to provide home visits for chronic disease self-management education. They support the patients in setting up and using their remote patient monitoring equipment. They're also providing that behavioral health coaching. And if they find that referral is needed for a higher level of care, they can refer them to the behavioral health services.

We feel like that constant process of training and evaluation is an important aspect of this program to make sure that we're getting it right and our project team continues to meet monthly to ensure that there's good coordination between the organizations involved. We recently have been able to create access for our Bay Aging coaches to the electronic health record of the health system so that provides that close coordination of care.

This is just a schematic of how this all fits together in providing the care from that. It's coordinated from the primary care medical home with the chronic disease management supports, the community services board, Bay Aging, which also coordinates are regional transportation system and Meals on Wheels, the options counseling for things like home health, and other available services in the region. The Bay Aging coach visits the home and supports the care coordinator and the remote patient monitoring nurse in helping that patient. Of course, the remote patient monitoring nurses, which monitor and communicate with the care coordinator about any concerns regarding the patient's metrics.

This is some information on how the patient can be eligible for the funding. It is funded by the Federal Office of Rural Health Policy, so it is for folks who live in the defined rural counties and have that high risk scoring, which includes the diagnosis of congestive heart failure and diabetes, and as I mentioned COPD was added by the health system. It's important as we've noticed that the patient and/or the caregiver is willing to participate in the remote patient monitoring and the health coaching system.

We continue to look for strategies to make sure that these services can be sustained after the grant is over and Medicare continues to add billing codes to support complex chronic care and remote patient monitoring. Also, the Medicaid Advantage plans also give incentives to the managed care organizations to reduce costs, so it's to their advantage to implement these kinds of programs and that's one of the benefits of being able to evaluate and provide this kind of ROI information to payers to encourage them to adopt this technology. We also in our surveys found that many patients were willing to pay for this technology if it was affordable because they came to really appreciate the daily monitoring.

I just put a slide in here for those of you who are interested in the technical part of how do we stratify the patients who were high risk and you can take a closer look at that in the slides. I want to thank you all for inviting me to participate, and if you have any questions, we're happy to respond. Thank you.

Kristine Sande: All right. Thank you so much for those great presentations today. At this time, we will open the webinar up for questions. We have just a few minutes left, and we might stay over a few minutes into the next hour for those of you who can stay with us. You will now see a Q&A box on the lower right hand corner of your screen, and you can enter your questions there. As you enter those questions, please the select the option to send the question to all panelists, just so we don't miss your question.

While we wait for a few questions to come in, I'd like to mentioned that RHIhub just published a couple of rural monitor articles this morning written by Dr. Kay Miller Temple about diagnosing COPD in a rural setting using spirometry. As Tricia mentioned earlier, that early diagnosis is so important. Those articles are hot off the press. We also have a video on our YouTube channel that talks about rural COPD, and we encourage you to use that and share it to help raise awareness about how COPD affects rural people and what we can do about it.

A couple of questions. One for Stephanie about the geographic location of your program, asking was the program across the state of Tennessee or a specific area? Stephanie?

Stephanie Williams: It was in a very limited region. If you're familiar with the state of Tennessee, it would be the area that we would call the Upper Cumberland. It was three different counties that would be included in that region. We had five different skilled nursing facilities within the same organization that were found in that local region. That made it easier for us to reach out to them. It made it easier when we were trying to plan that in person workshop. I wanted to make

sure I had a place where I could reach out to several different facilities but then have them all come together on that one day for that workshop.

Kristine Sande: I believe this next question is for Donna. It says, can you better specify the characteristics of the remote interaction? Wi-Fi, yes or no? Cellular connectivity, etc.

Donna Dittman Hale: Yes, the tablets that were shown in the picture of the remote patient monitoring equipment are cell activated. They're using the local cellular provider. On the other end, at the provider, they can go online at their office, in their car, wherever to a web-based portal to access all of the patient's biometrics, so that could be using cellular or web-based portal or whatever way they want to connect. It gives them a lot of flexibility. They have an app, so they can look at that on their tablet or their desktop or their smartphone, so the provider can pretty readily access the biometrics from the patient that they're about to talk to, and then also have that face-to-face virtual visit with the patient via the tablet.

Stephanie Williams: If I may clarify something, this is Stephanie from the COPD Foundation. The app that I referenced in our presentation, that can be utilized anywhere. While the program itself was specific to that one region, the COPD pocket consultant guide app can be used by anyone anywhere, just to clarify that in case that was the question.

Kristine Sande: All right, thank you. Another question is do you have ideas to build community support? Open that up to anybody.

Donna Dittman Hale: This is Donna. I think this is a really important question for sustainability of these programs. We've done some research on that and we've found that the community is those folks who have used this technology really like it. At first, they may have been a little apprehensive, but once they've used it, they want to be able to access this technology. We've developed some briefings and some information to get it out there. It is not yet available.

If you were a consumer and said, "When I got out of the hospital, I had remote patient monitoring, I would really like to be able to use that." It is available through home health, but as we as consumers learn more about this and can let our healthcare organizations know we want this availability, I think it really helps for our healthcare providers to know that this has become an expectation of the consumer that we know it's there, we want this, and we also are whole people. It helps to not only have our biometrics monitored but also for somebody to understand that I have needs beyond my biometrics, my behavioral health, my social determinants of health, all of those things are part of what I need when I have a health care provider looking at what I need to manage my disease.

Kristine Sande: Anyone else want to weigh in on building community support for COPD programs?

Tricia Stauffer: I'll just chime in, in that in the toolkit we do have a section on sustainability that covers this topic a little bit. I think some of the program clearinghouse will have examples, will have some good information about what they've done specifically in their community settings to garner support from the community.

Kristine Sande: All right. It looks like we have another question for Donna. How do you handle poor cellular or internet connectivity when you're trying to use the telemonitoring program and who makes your telemonitoring tablet?

Donna Dittman Hale: I do have the answer to the tablets. The equipment used to be a Honeywell-owned company, now it's now by Resido, R-E-S-I-D-O. I can give you more information if you'd like to contact me,

on the product. I think that question about poor cellular connectivity is really important. This particular product is functional with one bar, which as you know, you can't even have a phone conversation with one bar on your cellphone, so that's pretty amazing to me. But there are some places that have absolutely no cell coverage. For those areas, there is a version of the remote patient monitoring equipment that will work through a phone line, so there is an option that does not include a tablet. You can use remote patient monitoring equipment that works through a regular phone line.

Kristine Sande: All right, another question for Donna. How many practices in Chesapeake are part of the program, and did any opt out? Are there plans to expand the program?

Donna Dittman Hale: We currently have three practices, three rural practices that are involved in our program. These are small practices and some of them barely have an office. We have two full-time care coordinators that travel from practice to practice, and they're actually out in the field a lot visiting patients. We started with the practices in those areas. We haven't had any of them opt out at this point. I think the feedback we've received from the physicians in these practices is that this really helps them manage their patients' health, especially the folks that have very complex health needs, having a team to support them has been really beneficial to the health outcomes for their patients. Within this particular project that's being managed in the primary care physician's offices, we can already document three emergency department avoidances and a couple of situations that were potentially lifesaving for our patients whose alerts indicated they needed some intervention. I think that the physicians involved are seeing that it really helps to have not only the information from the remote patient monitoring but also the system of support from the care coordinator and the coaching.

Kristine Sande: All right. What are common reasons that people maybe stop using the telehealth program?

Donna Dittman Hale: I'm assuming we're talking about why the patients stop using the telehealth program. I can tell you when we first implemented this a few years ago, I was a caregiver for my mom who had been hospitalized and actually ended up in a rehab facility after her hospitalization, and then we got home and we had several dozen doctor's appointments and home health. I was working full time. The first reason we heard was it was just too much after a hospitalization to try to also set up this equipment and have a daily task of stepping on a scale. I would say caregiver overwhelm, which I could really relate to personally, and we did hear that from several other people in our project that was part of the hospital discharge care transitions.

The other reason is that people feel intimidated by technology and so that's why I think the chronic disease self-management aspect of this, the training that's provided by the coaching, that human touch is so essential. I think the bottom line of our research is because we compared a month of remote patient monitoring only to three months of remote patient monitoring with coaching is that technology alone won't make the difference. You have to have that human touch and that coaching aspect to accompany the introduction of technology for it to really make a difference.

Kristine Sande: All right, thank you. I think at this point we will wrap up the webinar. On behalf of the Rural Health Information Hub, I'd like to thank our speakers today for the great information and insights you've shared with us. This is such an important topic, and it's great to see so much discussion about COPD and what we can do about it. Thank you for helping to add to that discussion and the momentum that's building.

I'd also like to thank our participants for joining us today. A survey will automatically open at the end of today's webinar and we do ask that you complete the survey if you're able, to provide us with feedback that we can use in hosting future webinars.

The slides used in today's webinar are currently available at www.ruralhealthinfo.org/webinars. In addition, a recording and a transcript of today's webinar will be made available on the RHIhub website and will also be sent to you by email in the near future so that you can listen again or share the webinar with others. Thank you for joining us today and have a great day.