Introducing the Rural Community Paramedicine Toolkit – 9/24/2020

Kristine Sande: Hello, everyone. I'm Kristine Sande, and I'm the Program Director for the Rural Health Information Hub, and I would like to welcome you to today's webinar introducing the Rural Community Paramedicine Toolkit. 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 the webinar. If you have questions for our presenters, please submit those towards the end of the webinar using the Q&A button on the bottom of your screen. We have provided a PDF copy of the presentation on the RHIhub website, and that's accessible through the URL on your screen. And we have also just sent the link via the chat function. If you have any technical issues during the webinar, please visit the Zoom Help Center at support.zoom.us.

And now it is my pleasure to introduce our speakers for today's webinar. Our first speaker will be Sarah Hodge. Sarah is a Principal Research Analyst with the NORC Walsh Center for Rural Health Analysis. She has conducted rural health research on a variety of topics including opioid misuse and prevention, HIV/AIDS prevention and treatment, non-medical transportation, mental and behavioral health needs for farm and ranch families, and community paramedicine.

With the Walsh Center, she has supported or led the development of six evidence-based toolkits on behalf of RHIhub. Currently, Hodge leads a mixed-methods cross-site evaluation of the Office on Women's Health Prevention Awards Grant Program, which supports 20 grantees conducting primary and secondary opioid prevention activities.

She is also the Project Director for HRSA's Evidence-Informed Behavioral Health Models to Improve HIV Health Outcomes for Black Men Who Have Sex with Men Initiative, a cooperative agreement that provides training, technical assistance, and evaluation support to eight demonstration sites.

Matthew Walker is a Doctor of Pharmacy and has practiced in just about every pharmacy setting that exists. After expanding pharmacy services and growing programs at various locations, he decided to go back to school and get his Master's in Healthcare Administration. In 2014, Matt became the CEO of William Bee Ririe Hospital, one of the most rural hospitals in the lower 48.

There he enrolled the hospital in the 340B Program, expanded the medical footprint, and added two additional rural health clinics, brought in numerous additional specialists to provide services to the area. He also expanded telehealth to include teleNICU, teleICU, teleburn, teleoncology, and telesleep medicine. He opened a Cath Lab Center and started a community paramedicine program. Matt's broad experience has led him to come up with creative and innovative solutions to problems that are faced in rural America.

Jared Smith has been a Paramedic with the Queen Anne's County Department of Emergency Services since 2008. He holds a Bachelor's degree in Emergency

Health Services from UMBC and a Master's degree in Bioethics and Health Policy from the Loyal University of Chicago. In addition to serving as a Paramedic, Jared also functions as the Program Manager for the Queen Anne's County mobile integrated community health program. Jared's interest and current work focuses on developing and implementing innovative approaches to population health management. Jared currently resides in Baltimore County.

Dennis Russell began his career as a Certified Athletic Trainer in 1999 at the University of Maine and later at Bowdoin College. In 2005, he received his paramedic certification, and in 2014, he completed Hennepin Technical College's Community Paramedic Certificate Program. He soon earned his Master's in Education from the University of Maine.

Dennis is now the Dean for United's Accredited Education Department and the Community Paramedicine Program Manager for United Ambulance Service. Dennis also works as a Community Paramedic with SmartCare at Cataldo Ambulance Service in Massachusetts. He is currently collaborating on the development of standardized education curriculums for Community Paramedicine and has been an adjunct professor for Hennepin's Community Paramedic Program.

Dennis currently serves on the Maine Ambulance Association Executive Board, Mobile CE Executive Board, ReelDX Editorial Board, the Maine EMS Board, the Maine EMS Community Paramedicine Committee, and the Maine EMS Education Committee. He also currently serves as the National Association of Emergency Medical Technicians Education Coordinator for Maine.

Daphne Russell has been employed at United Ambulance Service since 2003 as a full-time paramedic. She was one of the first paramedics in Maine to obtain a Community Paramedic Certificate, and her primary focus has been to assist in the development of United's first home visit program. In 2010, Daphne was appointed the Prevention and Wellness Coordinator for United Ambulance.

She has been working with the Maine CDC, evaluators, and other implementers in the development and implementation of the In-Home Visiting Asthma Education Program since 2016. In 2018, Daphne obtained her National Asthma Educator Certification from the National Asthma Educator Certification Board. With that, I'll turn it over to Sarah to tell us about the Community Paramedicine Toolkit. Sarah.

Sarah Hodge: Great. Thank you, Kristine, and thank you all for joining the webinar. Today I'm excited, I'm happy to introduce the Rural Paramedicine Community Toolkits. All right. So 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 the Health Resources and Services Administration.

The project was conducted by the NORC Walsh Center for Rural Health Analysis, and a key focus of our work has been to establish a rural evidence base including evidence-based toolkits that share information about the experiences of FRHP grantees and other rural communities. Evidence-based toolkits are an important step in disseminating successful programs.

Our toolkits have three aims. The first is to identify evidence-based and promising programs. The second is study the experiences of these programs to figure out what's working in rural communities and why. The third is to disseminate best practices from their experiences so future grantees and other rural communities can learn from these programs and replicate them.

Today we're focusing on the Rural Community Paramedicine Toolkit. Community paramedicine is a field of healthcare delivery in which paramedics and emergency medical technicians or EMTs become certified to provide additional healthcare services to patients outside the scope of traditional emergency and first responder services.

Community paramedicine is just one type of program that provides these services under the broader umbrella of mobile integrated healthcare, but I'll primarily be using the term community paramedicine during this presentation to describe these activities. The goals of these programs are to increase access to primary care for medically underserved populations and to reduce avoidable use of emergency care resources.

It's an emerging model that enhances the role of EMS providers so they're partners in public health and community healthcare delivery. In the Rural Community Paramedicine Toolkit we share these promising approaches and resources to help rural agencies and providers explore whether this model is a good fit for their communities.

Next, I want to show you how to navigate through the toolkit. This is the snapshot of the main page of the toolkit which is organized into different modules as shown on the menu on the left. Each module includes information and resources for planning, implementing, evaluating, sustaining, and disseminating community paramedicine programs in rural communities.

There's also a program clearinghouse that contains information about promising programs already being implemented in rural communities. Today I'll focus on module two, our community paramedicine program models. Module two describes evidence-based and promising program models implemented in rural communities.

We organized the models by five different strategies that a community paramedicine or mobile integrated health program may employ to accomplish their goals. Some programs may use more than one strategy depending on their available resources and community needs. You can find more information on each model in the toolkit.

The first set of models describe prevention and health education strategies through home visits, telehealth appointments, and telephone check-ins community paramedics can identify medication errors, observe environmental risks, or discover problems that are not often identified in a traditional, clinical, or healthcare setting.

Medication management activities can include setting up reminders, explaining dosing instructions, identifying medication management issues like improper storage, and uncovering errors in their medication list. These steps may be done in conjunction with a community pharmacist.

Safety assessments include checking the patient's home environment for hazardous or risky conditions, particularly for families with young children or elders. Similarly, community paramedics can provide safety or maintenance checks for durable medical equipment in the home or manage community lending closets that offer equipment to people in need. Finally, chronic disease management activities can include checking and counseling patients on blood glucose levels, conducting regular weigh-ins, and discussing new disease management strategies.

Next, community paramedics can deliver basic primary care services in the patient's home without requiring them to travel to a clinic. In rural communities where transportation may be difficult to obtain or distance is a barrier, community paramedicine services can ensure prompt

care and identify health issues that need to be escalated to another provider. Community paramedics can also help the patient establish a relationship with primary care.

Another approach is regularly and routinely monitoring patient's vital signs in the home and sharing the readings with providers. Some rural community paramedicine programs use in-home patient monitoring devices to send data remotely using Bluetooth or Wifi connectivity. Other primary care functions can include blood or urine specimen collection, vaccination, or wound care.

Early follow-up is the key intervention to reduce avoidable hospital readmissions and help patients get comfortable with new health routines. Protocols generally call for an initial contact with the patient no more than 72 hours after their discharge. If the patient can't be seen by their local home health agency, community paramedics can fill the gap by conducting early visits for patients who are waiting for a home health appointment or those who may be ineligible for home health services because of their insurance status.

Their responsibilities can include reviewing next steps and discharge instructions, discussing and planning for lifestyle changes, and ensuring people have appropriate temporary or permanent physical accommodations and medical equipment to support their recovery.

Next, the toolkit includes models focused on reducing the use of emergency resources. Traditional models of emergency medical services involve rapid response to the scene, life-saving or stabilizing measures, and then transportation to an emergency department or other facility that can provide higher-level care. However, this isn't always a good fit for every situation when a person may dial 911.

ED care is expensive and the ED may be providing a level of care that is not aligned with the patient's needs. In rural communities with limited EMS and ED capacity, community paramedicine programs can help conserve resources for emergent issues and provide more cost-effective, beneficial care to patients. This type of model is particularly interesting to payers, including CMS and some state agencies.

Strategies to apply this approach include focusing on high ED utilizers by identifying key social, mental health, or physical resource supports that can help them better manage their conditions. Community paramedics can also transport people to a detox center or mental health services facility if that's better fit for their needs. Finally, community paramedics can work with hospice agencies to limit ED visits for enrolled patients.

The last category of models focuses on referrals for social services. Community paramedics can provide support to patients through care navigation and linkage to the Social Services sector. Because they are in the patient's home, they can ask questions or identify issues that are otherwise not visible to a provider in a clinic.

Community paramedics can build relationships with other Human and Social Services Organizations in their community and identify contacts, referral options, and resources. These types of resources can include nutrition, phone and internet assistance, substance use treatment or support groups, older adult services, legal services, and housing assistance.

The toolkit provides information and resources about planning for, implementing, and evaluating community paramedicine or mobile integrated health programs. When planning a rural community paramedicine program, it's critically important to obtain buy-in from local leaders and organizations like home health, hospitals, public health agencies, and law

enforcement. Having these conversations early can help gauge community readiness and avoid services duplication.

Additionally, programs will want to establish a plan to support and retain their community paramedics by hiring the right team, establishing clear roles and responsibilities, and protecting against burnout. In module four of the toolkit, we provide information and materials to support implementation approaches to address these and other topics.

So thank you all for your time today. We hope you'll visit the toolkit. I'm very happy to introduce Matt Walker who will speak to us about his team's work at William Bee Ririe Hospital.

Matthew Walker: Thanks, Sarah. My name's Matt. I'm with William Bee Ririe Hospital. We're in Ely, Nevada, which is pretty rural. I got a picture here of Nevada and neighboring states, and you can see right there in the center the red dot, that's Ely. Over to our northeast, there's Salt Lake. To our west is Reno and south is Las Vegas. We are pretty much the only healthcare for a 200 mile radius or more. It's 230 miles to Vegas and Salt Lake. It's about 350 to Reno. You'll see up north of us is Elko, and they also have a hospital, but we provide about the same amount of services. So we're pretty rural out here.

Some of the local challenges that we have here is a lack of services. Our home health agency, we're grateful for it, but it is not real robust and does not take Medicaid, it doesn't take a couple other insurances, and they have a limited scope of services. We also don't have hospice or any of those in-home care agencies that oftentimes can help with simple things like bathing and that sort of thing.

We don't have any public transportation out here. No Uber, Lyft, no buses, and of course, it's pretty expensive to get to another area. So another challenge that we face, and really everyone faces this, it's pretty common in medicine is the high utilizers or frequent flyers. We have a number of unnecessary ER visits, unnecessary clinic visits, ambulance calls that are almost more like social calls, and hospital re-admissions that oftentimes are due to a lack of understanding or education.

So what we did is we looked at the community paramedicine program, and we thought that it would be a good fit for us. And so we decided to really target the population that utilized the healthcare system really more than what was really necessary. The focus was our patients that our providers felt could use help, additional help outside of the medical system that might be able to reduce some of this waste.

Early on we talked to our providers, we got buy-in. They were pretty excited about the program, the idea that we could send someone out to help these people, to check on them, check on their meds, make sure they got their meds, look at their house, make sure it's safe, these types of things. And also, bringing out additional education and then bring back questions to the providers. So immediately, the providers were pretty excited about the idea, the concept of the program, and we really had buy-in immediately.

Our program set up was incredibly simple. We really because it was new to us, it was a new idea, we kept it extremely basic. We hired an EMTA, an advanced EMT, and he was with the county looking for other opportunities, so we hired him. We put him in an office here in the clinic, which is attached to our hospital. We sent him off to some community paramedicine trainings so he could get that endorsement, and then we equipped him with some basic stuff.

I guess I should preface this, on the opening screen, we did get a grant from HRSA, and that grant helped us pay for 50% of the wages and then all the materials. So that was obviously extremely helpful to get the program started. So we gave him a cell phone, a hospital car, and then our charting software, which we got through Health Call which is specific for community paramedicine.

Then we had a number of Bluetooth enabled equipment that gave real-life biometric feedback. We gave it to patients depending on why they were being seen and what the provider wanted. It included, and could be all of these, a scale for weight, O_2 sensor, a Fitbit to track motion, and blood pressure cuff.

After the program, we pulled all the data together, and I can tell you just anecdotally our providers just love the program. Our ER docs, our hospitalists, our clinic docs, they would constantly drop into our community paramedics office and be like, "Hey, I got another patient. Will you come see him before I discharge him or her so that you can get that face-to-face and they know to expect you and understand what your role is."

So just from patient satisfaction and physician satisfaction, it was big toward the end of the program especially, everyone loved it. Then I'm going to show you some raw data. Now, these numbers, they need some work. They are factual, they're real, but I'll explain some of the variables that are missing, I guess here in a second.

What we did because of COVID, it's kind of ruined all our lives as far as time management goes, so I haven't had a chance to really dig in; but what I did is I had our IT just take data analytics. They took all the patients that were enrolled in our community paramedicine program, we took two years of data prior to their enrollment, two years after their enrollment and this is the information.

In the red, prior to for the patients that were in the community paramedicine program, they had a cumulative total of 118 ER visits and 28 hospital admissions. After the program, they had 60 ER visits and 14 hospital admissions. Now some of the reason this data needs some work is because some of our patients... we just recently stopped the program, and I'll get to that in a minute, but we started this in 2018, and obviously, it's only 2020 now.

We had some patients that were enrolled in early 2020, so we don't have two years of data yet after they were enrolled. So that's obviously an inherent issue with the data, but we could definitely see a definite benefit in the numbers. When we took the patients who were early enrolled and we just looked at their two-year data, so it was actually two years to two years, we saw an absolute difference in ER visits and hospital admissions.

Another note that throws these numbers off, we did have one patient that was an outlier that had 24 visits to our ER just one year prior to the community paramedicine program. One year after the program, they only had three ER visits. There's also, that's a big number, and there were some social issues and psych issues, so that throws it off a little bit as well. The data though, I think although it needs work some analytical work to really show and be perfected, but you can see that it certainly was helpful and made a difference in these people's lives and in the use of the medical care here in Ely.

Getting to this point, I just want to throw out a few things. Early on, we had been looking at the community paramedic program, and so in 2015 we actually talked to the state through the Hospital Association, and Medicaid added community paramedicine as a service that could be reimbursed by Medicaid. Then it was also recognized by a few other insurances locally.

Obviously, Medicare did not, and that was one of our issues, one of the problems that we ran into, but I'll get to that in a minute as well. Once we had a payer source, we then applied for the grant through HRSA, and then we were awarded it in 2017 and then we started planning it, then we started in 2018 seeing patients.

Some of the lessons that we've learned through this process is getting early buy-in is so important. When you explain this model to the providers and how it works, they immediately love it. The idea that they can get this information, that they can work better with their patients outside of the clinical realm, and that someone else is doing part of the work for them and some of the data collection for them. They just love it.

Home health, when we first started, they were irate. They thought we were stealing their business, and they were just livid. So we sat down and talked to them and explained that we're not looking to do home health services, we're actually looking to do services that home health can't do. This actually led to referrals on both sides.

We started referring patients that were above our community paramedicine scope back to home health, and home health was referring stuff to us like people who were having difficulty remembering which meds they should take or spilling their pill caddies or things like that. Our community paramedic was able to go out and help with those that our home health agency wasn't getting paid for.

We also put information out on social media, and patients were pretty grateful and excited about the program. We received a ton of positive feedback. We had a number of individuals who, I think we all know this, a lot of times some of these medical services are used almost from a social standpoint, and they immediately got some of that social impact from our community paramedic. They just really enjoyed the program, enjoyed the education they were receiving, and we got a lot of really good feedback.

Again, getting that early buy-in from Nevada Medicaid specifically and other pay sources is important because obviously, in order to make the program long-lasting, you have to get paid for it. So that was something we worked on early on as well. Then making sure the employees understand the program and the why behind it, again, it really helps them to be able to make this program work.

We also found that we were able to connect people with resources. We've learned that you can get medication coupons, you can get samples, you can get glucometers for free from manufacturers. So our community paramedic was really proactive, and he actually reached out to a number of companies and just got a ton of free stuff. We actually were getting 15 glucometers every month, and he just has a file cabinet full of them.

Anyone who's diabetic he goes, and if they need a new glucometer, he gets it to them. We had one that had glucose strips that were four years expired and was readmitted all the time for ketoacidosis due to the diabetes uncontrolled, and this completely turned it around. We actually haven't seen him in the hospital since because he's been able to monitor properly his glucose levels.

Then also connecting with other resources. Meals on Wheels, Medicaid, and food stamps, and other substance abuse counseling, things like that. Because we're so remote, there's not a lot of resources that people know about, but there's actually more resources than they realize, so we're able to get some of this out. Then the financial model still not great because Medicare

does not cover the service, or at least they hadn't. So we found that was about 40% of our population that we were serving, so that was one of the issues that was difficult. Let's see.

Next steps, unfortunately with COVID and some of our health issues that our EMT suffered early in about August of 2020, just last month, he actually had to stop. He had to retire, and we stopped our program. Then we tried to get another EMT out to get the training, but because of COVID, they stopped all that training. So we weren't able to get the community paramedic endorsement, so we had to stop our program just recently the end of this last month.

On the bright side though, I've talked with our local county EMS, and they want to start this program up. As soon as COVID lifts, they're going to send someone out, and we're going to figure out a way to do communication because they won't have an office in our hospital. But we think that this is going to be a real benefit for the community for this program to continue. We probably would have continued it but the county EMT, they're not real busy, and they were looking for a little more work. When I talked to them about this program they thought, "Yeah, that sounds great. We should definitely do that."

Overall, I think this is a just a great program. I really can see as quality becomes the focus that and payment starts getting worked into community paramedicine, I could see this becoming a standard because the benefits are so great. Just the numbers I showed you, it truly makes a huge cost difference for companies, so I can see them buying into it. So that's our community paramedicine program, and with that, I'll hand it off to Jared.

Jared Smith: My name is Jared Smith, and I am the Program Manager for the Queen Anne's County Mobile Integrated Community Health Program. It's a program that we started in 2014. I'm going to get into that here in a few slides as to why that came about.

One thing to know about our county is that we're pretty rural. We have a population of about 50,000 with about 20% of that population being folks who are 65 years and older. We have five EMS transport units that are spread throughout the county, so that's one unit for every 10,000 people within the county. That becomes important for us because in Queen Anne's County, we're something that would be referred to as a medical desert.

We are one of only two counties in the state of Maryland that does not have a hospital within our county lines. We do have one freestanding emergency department pretty much in the center of the county, but we do not have any definitive care hospitals within our county. So that means that a lot of our community members they all have to leave the county to go to these hospitals to receive treatment and for our EMS transport units that results in significant transport times.

Usually, the typical turnaround time for even just a basic call can be anywhere between an hour and a half and two hours depending on traffic. With that said, when we identified our target population, we found that our high utilizer 911 service population were really putting a dent in the system, whereas they were using our transport units for non-emergency reasons tying up these units and leaving substantial gaps in coverage throughout the county.

Fortunately, our Medical Director, Dr. Joseph Ciotola, is also the Health Officer for the Queen Anne's County Department of Health, and that led us to really sit down and he pulled organizations together. He had attended a lecture in Florida or an EMS Symposium, and he saw that there was a program in Florida that were using paramedics in an expanded role to go out to community members especially high utilizer populations and to try to find out what was going

on inside the homes of the patients and why their health wasn't being managed effectively and figured out ways to mitigate those issues.

So we decided that we would also target our medical vulnerable adults who are almost always our high utilizer population. When I say high utilizer, I mean folks who are using EMS frequently, our emergency department frequently, and in-patient services frequently, and also patients who have high hospital re-admission rates. We find that this specific population are also the folks that are most medically vulnerable and also the folks who are the most at risk for falling through the healthcare gaps that are caused by fragmented and disjointed care.

Some of the challenges that we sought to address for our target population, we wanted to use an innovative approach to improve health outcomes for our community, and we wanted to improve our coordination of care. We wanted to really zero in and reduce unnecessary re-admissions. We wanted to reduce avoidable utilization of EMS. We wanted to encourage and increase use of preventative and primary care services, which is one thing that we find is pretty much an issue with every patient we have is that they're not utilizing preventative and primary care services the way they should be or as often as they should be.

We also with our stakeholders, our hospitals that are in neighboring counties, and for them, we are also trying to reduce unnecessary healthcare costs and reducing avoidable utilization of their emergency departments to help offset their load. Also, if we are decreasing their 30-day re-admission rates for patients, then they are less likely to receive a CMS penalty.

Stakeholders, these are organizations that we brought in very early on. Our program really mimics Matthew's in away because one thing that we found was extremely helpful for us as well was bringing our stakeholders in right from the beginning and engaging with them, asking for their input, and allowing them to become part of the development of our program. Because once the stakeholders became involved in the development of the program, they were less likely to provide any obstacles down the road.

They weren't blindsided by anything, they had some ownership of the program, and it really helped us to really take off from the start and develop at a quick pace. Some of our stakeholders are Department of Emergency Services; our Department of Health, MEIMSS, which is our state EMS licensing board; Shore Regional Health, that accounts for three of the neighboring hospitals; our county commissioners; Addictions and Prevention; the Queen Anne's County Department of Health and Mental Hygiene; our area Agency on Aging; and Anne Arundel Medical Center, which is another neighboring medical center.

Funding to get us off the ground, since we involved our hospitals right off the bat, they've brought to us what issues they would like to see us address. We all got together and figured out ways to do that, and because they were involved early on, they offered funding to help get us up and running. Shore Regional Health provided $50,000 to help start, Anne Arundel Medical Center provided $75,000, and then our Queen Anne's County Government, our county commissioners agreed to match the hospital funding.

The Queen Anne's County Department of Health provides some in-kind services, and then we did receive various sources of grant funding that helped to grow our program. For instance, about a year and a half, two years into our program, we were awarded a $400,000 CareFirst Telehealth grant, which is over a three year time period. But that allowed for us to put into place a televisit with a pharmacist from Shore Regional Health Hospital, which we find is probably the most valuable part of our program.

We also received funding from MRHA, and they gave us funding towards putting a peer recovery specialist on our team as well. So when we have folks who have some addictions issues or if we know that we're going into a home that probably has an addictions issue, we'll bring our peer with us, and the peer will establish a relationship with the patient and try to help them on the road to recovery moving forward.

Inclusion criteria. Initially, we looked at our dispatch data, and we looked for patients who had five or more 911 calls in a rolling six-month period. Then reached out to those patients, explained what our goals were and what we hoped to do for them, then we asked if they would like for us to visit. Our inclusion criteria are adults 18 years and older. They have to be a resident of Queen Anne's County, and the only exclusion is if refused to participate in the program.

Initially, and again this goes some of what Matthew's program went through, but we had to exclude patients who were involved in any type of home health agency. That's because in the very beginning the Maryland Board of Nursing also became concerned that we were encroaching into the home health field, and so we had to exclude any patients that were receiving home health services until we were able to sit down with the Maryland Board of Nursing and really show them what we were about.

That took for a few of them to come on ride-alongs with our program to see how our home visits were conducted and to see what services we provided the patients. Once they saw what we were doing for our patients, they really didn't have any problems letting us move forward. In fact, now we refer to home health services, and they also refer to us as well.

Our referral phases, like I said in the very beginning, we just targeted our frequent 911 callers. But one of the most interesting things that I found happened with our program is that our EMS providers were coming to us and saying, "Listen, I had a patient yesterday, and they don't meet the criteria of having called 911 five or more times in a rolling six-month period, but they've got a lot of issues going on. They need a lot of help. They seem pretty lost, they have low health literacy, their meds were a mess, the house was falling apart. Is there anything you guys can do?"

We've quickly realized that probably our most efficient and our best referral source was going to be our EMS providers because they're going into patients homes and they're getting a first-hand look at how they live, how they're managing their health, if their environment that they're living in is safe, if they really have any support systems in place, and whether or not a patient is using 911 services a lot, they may be using other services. It was really a way for our EMS providers to catch that and refer patients to us so that we were really catching them before they became high utilizers.

The next phase we opened up to our emergency departments and our free-standing emergency department within the county as well. Then we opened up to our post-discharge programs for neighboring hospitals. Then, again, our last phase was after we worked things out with the Maryland Board of Nursing, we opened up referrals to our visiting nurse agencies and our home health agency.

Our team consists of a Department of Health Nurse, a community health nurse, a Queen Anne's County Paramedic. We perform a televisit with a hospital-based pharmacist, and we have an addictions component, which includes a peer recovery specialist. If we think that there's a mental health component in addition to a substance abuse issue, we will also bring out a licensed mental health substance abuse counselor. Again, management is through Dr. Ciotola, who is both our Health Officer for our Health Department and our EMS Medical Director.

The home visit consists of program introductions and interviews. We receive the referral, we contact the patient, we schedule the visit, we show up. We have a EMS departmental chase vehicle, so it has our EMS lettering on the side that has all of our equipment. It also has a mobile wifi so that we can generate a televisit with our pharmacist no matter where we are in the county. Some parts that are the most rural, there really aren't any cell phone signals as well as homes with wifi, so we would bring that with us.

The nurse and paramedic together they will do program introductions and an overview. They will perform a physical exam, assessment of health history, medication inventory, review of systems, health and home safety, assessment of patient education, and assessment of support system. So they try to figure out how much does the patient actually know about their own medical conditions, do they have family nearby, are they miles and miles away from another human. So they really look into all of these things.

The paramedic will return and discuss all the home safety issues that they found and the need to modify any hazards. If it's something that they can fix while they're there, if they find overlapping rugs or something like that, they can fix that; or if they need to install a grab bar, say in a bathroom, they can do that as well. Then the nurse and the paramedic will discuss what issues they found, and together they will determine what services will be most appropriate for the patient, and from there, they will make referrals on the patient's behalf.

Again, the telehealth component is through a mobile wifi that's secured through our chase vehicle. We use Panasonic Toughbooks because paramedics are very hard on the equipment, and it's pretty much the only thing that will survive being used each day. For the software that we perform our televisit we use VIA3 Unity, and it provides end-to-end encryption, and they were willing to sign a BAA to satisfy the HIPAA HITECH Act.

The health and home safety portion, again, some of the tools that the paramedic uses, we use the Hendrich II Fall Risk Model, and that helps us to assess the risk that a patient would fall. We look at the PEAT Scale, the physical environment assessment tool. We use the Alcohol Use Disorder Identification Tests and the Drug Abuse Screen Tests. We perform a quality insurance and quality improvement every month, and we review the home visits that were performed the month prior. We really have a pretty good group of folks that meet up for that.

We include our nurses, paramedics, representatives from the hospitals, case management, clinical supervision, our pharmacists, behavioral health, and addictions. We all sit in a room, and we go down the list, and each patient is discussed. If we feel like we missed anything or if our team encountered any obstacles that they need additional help with, the group will brainstorm and try to figure out how to get it passed these obstacles to help these patients out. That occurs again on a monthly basis.

Just I'm going to go through our demographics really quick, and that's just to show you what the patients that are our target population, what they typically look like. As you see, the majority of our referrals come from our paramedics, that's the red portion of the pie. When we first began doing visits, they averaged between 90 minutes to an hour, and now we've got it down to they're averaging about 71 and a half minutes per home visit. You see that the vast majority, almost 80% of our patients are 65 and older. Our oldest patient was 100, and our median age is 76. So that gives you an idea of what we're seeing on here.

The majority of our patients, almost 64% are Medicare, and almost 10% Medicaid, and then the rest are commercial insurance. With the age group target population, I don't think that was a big surprise. One thing that we noticed is that the highest level of education, almost 50% of our

patients, the highest level of education was a high school diploma or equivalent. Many are retired, but 21 to 22% are unable to work, and 2% are unemployed, so we do have a lot of folks that have some income issues here too.

Top ten diagnosis that we see with our patients, number one is hypertension. But one interesting thing here, if you look at the bar four bars from the left, you see that injuries from falls actually is high on the list of existing diagnosis that we see. This is from ICD-10 codes, but what that tells us is that our patient population has a lot of issues going on that are causing falls. When we looked into the data, that is what was accounting for a very large portion of their visits to the ER and 911 calls.

Average number of diagnosis per patient is almost five. Results from our medication inventory, almost 50% we found a problem with their medication inventory. Average number of medications per patient, nine. That's something that I find that's pretty impressive because it's hard enough to remember to take one medication every day let alone nine. A lot of these as you see, a majority of our folks are 65 and older and have up to five comorbidities on top of that, so that's one thing to consider.

Top ten linked services. The biggest thing that we link our patients with are safety-related referrals, whether that's off performing safety checks in the home and mitigating issues while we're there or referring out to housing, or for whatever reason it seems like safety is always a big service that a lot of these patients need. Average number of linked services per patient, seven. So while we're in the home, we're averaging seven referrals that we're making on the patient's behalf, which means that we're finding a lot of issues when we go in to do the home visits.

Again, the PEAT score, almost 33% are less than optimal. So a lot of our folks are living in pretty scary conditions. These are just some of the hazards that we've run into. One that I always like to point out is that we did find a 98-year-old woman who had an issue with her light socket. She plugged a light into an outlet and screwed a hook into the ceiling and dangled the light over her bathtub so that she can see while she was taking a bath. So that was pretty scary.

Our 911 reduction analysis, we do a pre-post analysis. So we look at one month pre versus post-enrollment to our program, three month, six month, and 12 month. Here you can see for the vast majority that there are pretty significant reductions in use of 911 services by our patients post-enrollment to our program. All this data is taken from our health information exchange CRISP, which was a game-changer for us. They run all of the data analysis for us. We literally just input a panel of our patients, and we are able to pull up so many different reports, but my favorite report is the pre-post analysis.

You can see here that the average percent change in ED visits and in-patient visits, they track with each other. So at one month, three month, six month, and 12 month we're seeing pretty significant reduction in emergency department visit and in-patient visits for our patients. At one month, we're looking at 58% for ED visits and almost 67% for in-patient visits, so that's pretty significant.

As far as hospital costs, these numbers track along with the reduction of visits as well. But we're seeing it's one month post-enrollment, we're seeing almost 65% reduction ED cost and 66% reduction in in-patient cost. So you can see that as one, three, six, and 12 month as we get closer to 12 month, the numbers kind of creep back into almost baseline. That's something that we have had to address with our follow-up procedure. We've been watching the data for a while, and we've seen that this has been the trend for the past two fiscal years.

So we realized that our follow-up procedure probably wasn't as robust as it should have been. We would perform a home visit, and then we would call the patient a few weeks later and check in, and then we would really just keep an eye on their HIE. If we received a notification that they went into the hospital, we would contact them and find out if we needed to come back out and check on them. We just realized that just wasn't good enough.

So we changed our follow-up procedure to be at three months after their initial home visit we do a telephonic phone call follow-up; at six months, we do an in-person follow-up that lasts about 90 minutes; at nine months, we do another telephonic follow-up; and then at 12 months we do a final home visit that lasts about 90 minutes, in-person home visit. That's when decide if the patient essentially graduates from the program or if we need to keep them on longer.

Our satisfaction survey we send out about three months after the visit. We give the patients time to go to all of their referred appointments and to receive the resources that we've referred them too. The vast majority of them said that they're better able to manage their personal health, that they felt the referrals were appropriate and useful, that they would recommend our program to others, and that the medication review was helpful. So a lot of our patients are pretty happy with the program.

Biggest challenges for us were communicating our findings to providers. In Queen Anne's County, we were finding that a lot of our providers use different PCRs, so we're having a difficult time finding ways to get the same information out to different providers. Some wanted the information faxed, some wanted it emailed, and some wanted it put into their PCRs, so that's always been an issue.

Early on, we had a lot of issues with patients declining visits. I think that's gotten better with time because we've learned how to really advertise our program better essentially, and we've been able to educate our hospital providers a little bit better so that they're able to pitch the program a little better too. Social isolation, mental health, financial sustainability, and medically complex patients, these are all the issues that we're faced with.

Advice for new programs. Stakeholder engagement, engage early and often. Get as many people in the room as you can. Build your team, this is important. Choose only team members that reflect the core values of the program. For us, we had to make sure that we were finding people who actually wanted to do this type of work because the majority of EMS providers like the adrenaline rush, they like fast-paced calls, and this is a significant change from that. We wanted to make sure that these were people that were going in that wanted to do the work.

Allowing the program to be fluid in this development. Don't make a decision and think that you're stuck with it. If you are picking up obstacles or facing new obstacles, don't be afraid to change your program to address those issues. For us, the future holds, we want to broaden our referral sources, we want to figure out how to better close the loop with the primary care physicians. We're still on the search for better financial sustainability, and we want to use our telehealth services more.

With that, I'll leave the last presentation for Dennis and Daphne Russel.

Dennis Russell: Hello, everyone. Thank you very much. We'll try to keep ours brief, but if anyone has any questions, please notify us at any time. We are brother and sister just to throw that out there for folks. United Ambulance some of the challenges really that we've had as we go through we'll talk about a little bit later. For our target population, typically underserved population, ED high

utilizers. We have been doing a program with medication assisted treatments that's been started in the ED, and then helping to support that afterwards, and also asthma.

With our program, as we continue to grow and move forward, it really depends on the patients that we see; but everyone that we do see, we really emphasize on not duplicating services. So if there's home health, we typically really move towards referring back to them and having them take care of those patients if they do qualify for that.

Some of the other challenges, social determinants of healthcare to disparities and transportation. Like a lot of rural communities, transportation is a huge issue here in Maine. As we look at some of the various populations that we have in our local communities, there are some large challenges with social determinants of health and the healthcare disparities.

We do have a wonderful team. We have Medical Director Dr. Mike Wilcox is our Medical Director. We do have 1.5 FTEs dedicated to our Community Paramedicine Program, which we've been doing since 2013 in our state. One of our .5 is an advanced EMT, and we do have a paramedic that is full-time dedicated towards this as well as some other folks that help to contribute. Consulting pharmacist has helped with various education on MAT, medication-assisted treatment, and some of the other projects that we've been doing with asthma and those type of things.

Some of the services, Daphne will go over that.

Daphne Russell: I will say the referral process is different here and has developed since we first started in 2013 over time. The term referral here in Main is really a signed document either by the ED physician referring to our program or the primary care. So here it's really request for services.

So I'd say request for services can come from EMS whether they're on scene with that individual, we can either clear them from that call, take over, or do follow-up as far as if it's a frequent person who is having multiple falls. Relaying the information back to the primary care, whether we see them or not, is really vital.

We have a Meals on Wheels with our agency local. It could come in from them, it could come in from their primary care directly, the ED, many different agencies in which that may come through. But then again, seeking out the referral from the primary care or the ED doctor recognizing that we have a huge population that may not have a primary care. So how can the community paramedic go into the home and connect them with a primary care whether it's to overcome the barriers of transportation or health literacy or that sort of thing.

I feel like the services here I feel like we offer a lot more. Sometimes it is that social component but it's really looking at those barriers, the health determinants. There's time somebody is discharged from the hospital with CHF and they're going home after being in the hospital to no food. I work with the local food pantries, for instance, and get them a box of emergency food for when they go home. So sometimes that's how I get my foot in the door.

So addressing those things before I can even get to the medical component is really, really huge as far as our everyday process with these individuals. We offer the home inspection safety check, we review medications and do a med reconciliation, and that's the number one reason why people are referred. We see people come in and out of the program, it's really based upon their care plan. The community paramedic alongside their primary care, and recognizing how often does this person need to be seen.

There's some people I see monthly, some daily, some once a week, or bi-weekly, so every individual is different. We hope to graduate them, however, we recognize that we have a huge population that will come in and out as well as people that have been in there for well over a year, almost two years. So we also look at and do the fall risk assessments, review the medications. Sometimes it's simple as far as what we are trying to get them or get them to a point where they can better take care of themselves in the home.

So looking at maybe weight checks with CHF, but those big one, and educating them on how to better take care of themselves and their chronic disease. Sometimes on a very, very simple level, and meeting them in the home is a whole different social aspect and being on their level. Well-being checks, influenza vaccinations, which we think will be on the up rise obviously this year; wound care, health screenings, vital sign checks.

However, again, the primary care could call us that day and be like, "Hey, can you go see this person and check them out," so we really have a good connection with the majority of our primary care and that they'll really alter change medications based upon our findings or really connect them with the resources that they need. Again, with the referrals and I should have mentioned, we have a great working relationship with home health in that they refer to us, and sometimes it's vice versa, so how can we help them.

I had a patient that transitioned from us into palliative care, but really went into hospice before the palliative care nurse could even get there to assess. So it's really working closely with them, and we find ourselves being that gap for those individuals. There's a huge population that because of bed bugs or maybe other things going in the home, the home health may refuse, so we find ourselves getting those individuals as well.

Dennis Russell: Some of the key outcomes, results, successes, those types of things for our program, we've really honed in on asthma over the past couple of years. We've worked with Maine CDC on our in-home asthma program. We've actually done some education, Daphne's gone on and got her Asthma Certified In-Home Educator Certification, and that’s really had been a mainstay. That's the one program that initially we really worked with primarily 18 years and older.

When we started looking at asthma and some of the asthma rates in our local community, we actually really started to take on some of the pediatric patients as well and started working with them with the asthma program. We continue to do asthma, but as that grant has morphed, we see where that's gone. The other piece also with ED utilizers, high utilizer so to speak, we've worked with our local emergency rooms and really tried to help connect them with various resources.

What we have found that a lot of times in our populations, folks typically will use the ED as their primary care. Obviously, not cost-effective and those types of things, so we help to really connect our patients to primary care physicians. Initially, we'll get the referral from the emergency room physician and help link them up with a primary care, and then if any other further services are needed, then we help to link to the local resources really with the guidance of their primary care that we set them up with.

Medication-assisted treatment is one of the newer ones. We're actually doing that out in Bridgton, working directly with some of the ED physicians as they start prescribing Suboxone to patients and transitioning them into home and then into the local community programs. So it's really that initial going to the ED starting the medication that our community paramedics are typically going out doing a COWS assessment, seeing how they're doing, making sure that the patient is going to follow up with the local resources.

We'll go out a few days during that transitional time as they get into outpatient therapy or whatever they've been referred to. So it's that helping, again, really hitting that gap between the initial being seen in the emergency room and going through working with the prescribing clinician typically as far as what they've prescribed for the patient for in-home medication. If depending on that COWS assessment, depending on our medical assessment of that patient and direct communication with the physician, then they can change that prescription if needed.

That's one that we've really just started up in the past year, so we're still working through some of the obvious things with starting up a program. Some special considerations, and again, I think the overarching theme is transportation. In rural communities like ours, like I think everyone you've seen today, transportation is an issue. That's where I think community paramedicine, mobile integrated health programs can definitely help fill some of those gaps.

Access to healthcare services. Some of our populations that we service are very small, local communities that don't have a lot of resources, and then how do they gain that access. The education piece, we actually have patients, quite a large number of patients who are illiterate, who haven't completed school, who have those challenges, and especially their healthcare literacy is very low. So that's where we definitely try to help augment that with them and help them navigate the healthcare system.

Some of the challenges that we've seen with providing services our state was one of the very first states to really put forward community paramedicine and enabling the pilot program. In Maine, we really stick to our scope of practice as EMS providers, as paramedics, as AEMTs, and EMTs. Community paramedicine still really lives within that scope of practice that's been developed by the state, which can limit, but also really delineates where we go and what we do.

Over the past couple of years working with Maine, it's exciting that all community paramedicine programs across the state, which are about 17 or so now, all are putting their information into the state system where hopefully we can really start looking at some interesting numbers with data and what we're doing and how we're doing it. Resources have always been an issue and our biggest problem across the state of Maine, and definitely with our program it's funding and that sustainability of funding.

We're co-owned by two hospitals who have been extremely supportive. We've been very fortunate with grants and local partners, local mental health partners, and various folks to really help keep our program going, which we've been doing since 2013, but it continues to be lot of work with that. We've also talked to our local MaineCare or our local Medicaid, and eventually talking about how we can work that into the state system.

Successes. Again, honestly, Daphne and Dori, our paramedic and our AEMT are a huge part of the success. Community paramedics can make or break a program, and making sure that you select the appropriate personnel is impeccable for any program. They really are the face of what you do and how you do it, and what they do is monumental to your program. So personnel, and making sure you have the right personnel is absolutely critical. Not everybody should be a community paramedic, but there are some truly amazing folks out there that would be amazing providers as well.

Grant successes, we have been working closely with Maine CDC, various departments within Maine CDC. Tri-County Mental Health has been an amazing supporter over the years and helped us get grants. We've also had some local grants with our local hospitals moving towards that as well.

Strengths, again, we're inclusive for all patients. We do not overlap services whenever possible unless directly asked to help with certain services. So if they have home health, we make sure that we augment with them, and we would not duplicate with services. Sometimes they'll refer to us, sometimes we'll refer to them, as we've already talked about.

Access to healthcare information, we actually are fortunate enough that we have a direct access with our two local hospitals that our community paramedics can go in and review documentation. They can actually provide documentation within the local healthcare systems. We also do have a statewide data collection here in Maine that we have access to as well, so that has been huge.

The next steps really I think as a state one of the big things that we didn't do initially that we really need to really start looking at is data collection and looking at what we're doing across the state, across programs, how we're doing it, and what services that we are providing and how that impacts our local communities.

Funding I think is a theme that you'll see across states, but that's also sustainable funding, and that will come later on with some of the reimbursement, and when CMS eventually recognizes would be a huge impact. ET3 we all hoped would be the initial, but that's very different than community paramedicine and those types of services. Other than that, I'll throw it back to the group.

Kristine Sande: All right. Thank you so much. It does look like we are well over our allocated hour, but if our presenters are able to stay on for a few minutes and answer some questions, we maybe could take one or two if folks have those. At the bottom of your screen, you'll see a Q&A icon, and you can click on that button and enter your questions if you have some.

I'd like to just take this opportunity to say thank you to all of our presenters today. This information was just fantastic and just really good examples of what can be done with community paramedicine and mobile integrated healthcare. So thank you so much. There is a question, have the Russell's had any success with Anthem Blue Cross Blue Shield in Maine with funding for community paramedicine?

Dennis Russell: We have explored that. We are one of the states that they actually will do that. In order to participate with Blue Cross Blue Shield, you have to be contracted with them for that. We've explored it a little bit, but with the grant funding and other resources that we've had, we haven't had to really go down that path.

With that, there also within our local communities looking at the population of that provider, it wouldn't make as much impact for us. So we've explored it, we've talked with them, we've gone down that a little ways, but we really haven't gone heavy into the reimbursement realm with that.

Kristine Sande: All right. Next question is how many visits per client do you average?

Dennis Russell: Is that for everyone or for...?

Kristine Sande: Yeah, whoever wants to take it I think.

Dennis Russell: I can talk real quickly here, but definitely let others. I would say our average per client would probably be right around 10 or so for most patients who are in longer-term. Typically, we'll go

each week, and then we'll take and ween off as far as what we're doing and that type of stuff. We do find that sometimes we have a little bit more. But I'll let the others answer that as well.

Jared Smith: Yeah. For us in Queen Anne's, we do our initial visit, and then we do a telephone follow-up at three months; another home visit at six months; another telephone follow-up at nine months; and then at 12 months again, we do an in-person visit. I think I saw another question that said about the ED visits one month through 12 months in Maryland showed tremendous impact at one month and far less at 12. Well, I think that's because for the majority of our program, our follow-up procedure wasn't very robust.

So we weren't encouraging our patients to stay on track with the goals that we set with them, so I think they were falling back into old habits after about the six month period. So what we've been seeing with this, we've had one full solid year of our new follow-up procedure, and we're seeing that the data's not returning to baseline at 12 months like it was in previous years.

So I think that we figured out that you really have to encourage these patients a lot and really stick with them and make sure that they're sticking to the goals that you set with them. That was the biggest thing that we found.

Kristine Sande: All right, thank you. Another question is what are the different roles between a paramedic and an advanced paramedic?

Dennis Russell: We have both. Typically, their roles are their licensure here in the state of Maine. So again, we don't change our scope of practice for community paramedicine, we're just doing it in a different place. Our paramedic would be able to do any of the roles a paramedic would be able to do in the field just as a community paramedic. AEMT would be the same. Maine does go a little bit differently than some of the National Registry, so our AEMTs can monitor heart rhythms, acquire 12-leads, and do different things like that. But typically, it's within their scope of practice.

We are a general practice community paramedicine, which means that here in our state, each one of our providers, whether or not it's a community paramedic that's a paramedic or one that's an AEMT go through a national curriculum either through Hennepin, or we've developed a national program with a bunch of different partners based off the national curriculum. Again, it's the same scope of practice that we have for the state of Maine.

Kristine Sande: All right, thank you. For the Maine and Nevada programs, what role does your AEMT play?

Matthew Walker: This is Matt. In Nevada, our advanced EMT really does it all. He's the one that sets up the appointments, goes out and does the visit, brings back the information. He talks with the physicians here. Then we did have a nurse that was a liaison if there was more help needed. Then, of course, he follows the guidelines, the protocols, and doesn't go outside of his scope. If something's needed outside of the scope, then clearly it comes back to our physician or nurse at that point.

Dennis Russell: I would say that here in Maine, it's the same thing as well. Our AEMT will schedule her appointments, she'll go out, she'll do everything within her scope of practice, and she'll have her own patients that she follows up with. So really doing the same thing. It would only change depending if there was a certain medication or certain skill that was outside of her scope, but primarily, they actually work together in tandem. When one takes vacation, the other will take the other clients and patients and go through that process.

Kristine Sande: All right. I think this will probably be our last question, and it says it's for anyone. Did you already have your plan or protocol for your program drafted before you gathered your stakeholders and presented the program to them? This person is just wondering if having an established plan makes the meeting go easier, and better.

Dennis Russell: Here in Maine, we did initially start real slow, and when we engaged the primary care physicians and other stakeholders, we had some ideas of what we wanted to do. That has since changed as we've continued to develop our program, but initially, we did have some ideas as far as where we wanted to go. All of it's based off of our community needs assessment.

One of the things to become a program here in our state is that you actually have to look at the community needs assessments of your local communities. That truly, if you refer to those, will help engage your stakeholders because those are things that they're very familiar with. So whether or not you can work within that system has really been where we began. I'll let others comment on that as well.

Matthew Walker: Yeah. This is Matt again, real quick. We did our protocols, we looked at the needs first, and then we wrote up protocols to meet those needs. Then after the program started, we actually ended up adding additional protocols as more needs were identified. But we did do our protocols and plan first, and that's how we got buy-in from the providers and then expanded from there.

Kristine Sande: Great. Well, thank you so much. Thank you to everyone who joined us as participants today. A survey will automatically open at the end of the webinar, and we encourage you to complete the survey to provide us with feedback. The slides used in today's webinar are currently available at www.ruralhealthinfo.org/webinars.

In addition, a recording and a transcript of the webinar will be made available on the RHIhub website, and also sent to you by email in the near future so that you can listen again or share the presentation. We do encourage you to share it widely. Thank you again for joining us, and have a great day.