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ARIA JAVIDAN:

Hello, everyone. My name is Aria Javidan. I'm the project manager for the National Consortium of Telehealth Resource Centers. Welcome to the latest presentation in the NC TRC series. Today's session is on 'The Southern Regional Disaster Response System (SRDRS) - A Comprehensive Overview' as hosted by the Southeastern Telehealth Resource Center.

These webinars are designed to provide timely information and demonstrations to support and guide the development of your telehealth programs. Just a reminder, little bit of background on the consortium. Located throughout the country, there are 12 telehealth resource centers, two nationals, one focused on telehealth policy and the other on telehealth technology. Each serve as focal points for advancing the effective use of telehealth and supporting access to telehealth services in rural and underserved communities.

A few tips before we get started today: your audio has been muted. Please use the Q&A function in the Zoom platform to ask questions. Questions will be answered at the end of the presentation.

This also note that closed captioning is available, and that's located at the bottom of your screen.

Today's webinar is also being recorded, and you will be able to access today's and past webinars on our NCT RC YouTube channel. With Akamai will pass it over to Boyd Mark.

BOYD MARK:

Thank you very much, Aria, for getting things going today. Very well done, as usual. Welcome to today's webinar. I am the program director at the Southeastern Telehealth Resource Center. We are responsible for telehealth and virtual healthcare initiatives in Alabama, Florida, Georgia, Porto Rico, south Carolina, and the US Virgin Islands.

We have a really great program today. We are going to hear from the physicians at the Southern Regional Disaster Response Initiative, also known as SRDRS. They are from Emory and Augusta University. SRDRS is funded by Health And Human Services, and they have the mission of complement in the existing frameworks from the healthcare coalitions.

All physicians will highlight the signature SRDRS program, including tele-critical care, tele-EMS, tele-observations, and more. All of these are designed and operated to increase regional surge capacity following emergency events. The speakers will tell you a little bit more about themselves very quickly. I will let you know that we have Doctor Michael J Carr, Emory University, Doctor Michael Ross from the Emory University Tele Observation Surface. From well\*MCG health and tele-critical health services, Doctor Matt Lyon, and from the SRDRS initiative, Doctor Alex Isakov.

I would be remiss if I didn't mention Heather Miller from Emory University, who has been invaluable in making all of this possible today.

With no further ado, I will turn it over to you, Doctor Carr!

MICHAEL J CARR:

I think I'm going next! You can go ahead and advance to the next life. Again, Michael Carr, nice to meet you all. I'm on faculty at the Emory University school of medicine. I work as a board-certified emergency and disaster medicine physician in the prehospital and disaster medicine section. As it relates to this, I am the Principal Investigator and director for the Emory rural Tele EMS network which has developed a very recent partnership with the Southern Regional Disaster Response Framework. We will talk about what that partnership looks like.

Next slide. Next slide?

I'm going to hit on five major things, but I first want to disclose first that this has been initially offended by HRSA, Health Resources and Services Administration, and of course, I'm obligated to say that everything I talk about in our grant project is not an endorsement by the US government.

Just five things... Next slide. Sorry, I'm used to advancing these myself, so I apologize. I want to hit on five major things. The big three that I'm going to cover are really the Why of our program and how we got started. I'm going to hit on our software connectivity and our equipment. I would like to talk about our sustainability plan, especially as it relates to our partnership with SRDRS really about SRDRS and the vision for integration. I will touch on that throughout her presentation, but these last two, number four and five, will be highlighted in greater depth by Doctor Isakov. I will touch as much on them.

First, the Why. We got this program started, it was early March 2020 when this was first conceived. We thought about the rural disparity throughout the state of Georgia and how we could use Virtual Care to support that disparity. In other words, how could we put equipment in the back of ambulances in areas throughout the state that have a rural designation where access to healthcare is unfortunately severely diminished.

That access issue becomes a major problem for time sensitive and time critical conditions.

Next slide.

This is... Next slide. Thank you. This is presented in a way that I'm going to focus on kind of our challenges as they came up, and really, the success and the outcome that we are currently functioning under. Next slide.

This is a multifactorial problem that I'm talking about. The rural disparity is historically as a result of rural hospital closures. When rural hospitals close in a rural county, all of a sudden, we remove an access point to the healthcare system. If you can picture calling 911 in one of these counties, it takes a

lot longer for the ambulance to get there in many cases, but really, to get from the scene of where that scene was made to get to the closest hospital, we often look at 30, 40, 50 minutes to get to the closest facility.

If we are looking at a time sensitive or critical condition like stroke, trauma, high-risk labor delivery, sepsis, undifferentiated shock, these are all conditions we know the longer it takes to get to definitive care, the worse the outcome is going to be. So, think about that from a problem perspective: how can we use Virtual Care to support that problem and that disparity?

In a nutshell, if we put – which we have done – if we put telemedicine equipment in the back of ambulances, which I will show you some visuals of how that looks, rural EMS crew can call in and speak directly to an emergency physician. So, with patients who have these critical, time sensitive conditions like stroke, trauma, they are immediately connected with an emergency physician to weigh on treatment guidance. Certainly, these EMS personnel have protocols they can follow, but these patients are complicated. Not all of these patients read the protocol manual, right? That physician can help pull the pieces together, and we can weigh in on clinical guidance.

Probably, the second leg or the right-sided component of this diagram is the most valuable service that we provide. We are able to facilitate that patient's care, what they receive in a small access hospital or a critical access hospital. With a stroke, we can call in and say, "You're getting a stroke patient. They are 20 minute out. Here's their information so you can get them register before they arrive. Go ahead and clear your CT table so we can scan that patient as soon as they get their. By the way, if me the number for your on-call neurologist. I will give them the story so that they are ready to go by the time that patient has arrived."

In the setting of a time sensitive ischemic stroke, all of these facilitation actions we are doing are really improving that time to definitive care for the patient. So, getting the emergency physician involved earlier in many ways is going to help facilitate that downstream care.

I want to point out that the biometric data from the back of that ambulance, everything we are seeing on a monitor, can be streamed in real time to that emergency physician who is up in a control room at Emory University in Atlanta. Oftentimes, these physicians are also working from home doing telemedicine work. We can see all of that data from the monitor, and we can also share that information with the receiving hospital.

Next slide.

Our current footprint, you know, in terms of our rural coverage and also, we have added a few counties to fulfill the disaster response framework initiative, all of these highly counties have an ambulance deployed with equipment. Most of them are online and able to call. Many of them are still... We are still kind of on boarding and bringing the crews up to speed and configuring our equipment.

We have a plan to expand to the additional highlighted counties over the next year with the hope of really fulfilling or meeting the goal for SRDRS, which is to have an ambulance present in every

hospital-coordinating region throughout the state.

Next slide.

Long-term, we hope and plan to expand and develop this model throughout the Southeast. Now, with our SRDRS partnership, this model we see being replicated in states throughout the Southeast region, in HHS Region 4. Whether that is a hub and spoke model with Emory and Augusta physicians answering the call for other states, or they replicate our hub and spoke model in their state and we serve as infrastructure support, I think there's going to be a lot of variety and how that model licks from state to state.

Next slide.

A bit on software and equipment. I know I am under the gun here, so I will try to wrap this up quickly.

Next slide.

We have exceeded our initial goal of 30 ambulances. We have a software vendor called swyMed who specializes in developing telehealth in rural and austere environments. The software has really helped us pull everything together.

Next slide?

We used DT research tablets. We use an AXIS pan tilt zoom camera. We have a Yamaha speaker mounted on the side of the ambulance. We have mostly integrated with Zoll X-series monitors. That being said, we have developed relationships with other agencies and have multiple monitors. That is very difficult as you have different competitors across the market. We want to be able to work with everybody so we can touch as many agencies as possible.

Next slide.

You can advance through these just to give a visual. Here is the tablet. We have a pan- tilt zoom camera in the ceiling. We have a noise canceling speaker mounted on the side, a Zoll X-series monitor that can integrate via Bluetooth with our software, which you see here. Vital signs can displayed in real time during that call.

Next slide.

I always get questions about our connectivity. We are primarily using cellular, so Verizon and AT&T are primary providers. That being said, and this is a problem for tele-EMS problems all over the world, connectivity is probably one of our greatest barriers. In many regions, what happens is the antenna has -- on an ambulance doesn't have enough power or gain to really see the closest cellular tower, so there are potential solutions where we can get higher gain antennas to add to the top of the ambulance to enhance our cellular connectivity.

Satellite in its current form is just not good for a moving target, and we are seeing, you know, ambulances are a moving target. Satellite, I think that technology will continue to improve.

You can advance to the next slide.

You know, especially with companies like Starlink working on mobile solutions for satellite coverage, there satellite switching technology that is increasingly available in commercial environments. We are going to see satellite, and I think higher gain antennas, really make their presence within our network so we are really able to highlight that connectivity.

Next?

Sustainability real quick. This is really just speaking to our partnership with SRDRS. You know, our financial viability relies currently on a number of different models. Fee-for-service in our current environment is just not going to work. Subsidizing our network with government, with additional grant support is really going to be a key component moving forward.

Next slide.

Real quick, our, you know, our current work that Mike Ross is going to highlight is also covering the physicians who are covering tele-observation and tele-triage in our network. Those physicians are able to answer EMS calls. That is how we get around having to fund a dedicated physician. That contributes to our sustainability.

And that's me working a tele-observation shift. Next slide.

You can advance quickly through these just to give a visual representation of our state-funded model. State-funded plan. You know, as we need to build out our sustainability, there's going to be a multifactorial approach to this. You can advance through these next slides because that will tee up Mike Ross to talk about our integration. If you need more info, you can certainly QR that to get more info on the program.

And I will hand it off now to Mike Ross!

MICHAEL A ROSS:

Wow, that was a whirlwind. Thank you, Mike! Mike Ross, Chief of Observation Medicine, Practicing Emergency Medicine at Emory. Also Director of Emergency Medical Care. Next?

Telemedicine is simply a tool that we use to manage our patients. Let's talk now about how telemedicine has been developed and adopted at Emory to manage observation patients. And furthermore, how that can be in turn used for disaster preparedness. We will cover a background on what it is, observation medicine is, talk about tele-observation and the evidence behind it, and wrap it up with disaster preparedness and what I believe is a win-win.

Next?

There is often confusion with observation because it is both a verb, noun, and an adjective. What I mean is observation patients, the ones that I talk 6-20 for our patients, are ones that need care beyond an ED visit but not quite an inpatient stay. Observation services is defined as "management to determine the need for admission". Notably, these patients represent 20-35% of all patients staying in any hospital.

Now, where they are cared for is defined by -- for the settings as defined by two variables: the use of protocols and the use of units. If you have a protocol-driven, dedicated observation unit, that is a type I setting. No protocol, wild West? That is a type IV setting. Unfortunately, for two thirds of households in the US, there is no observation. The type 4 is the only setting available.

Next?

There have been nine randomized trials showing the superiority of a Type 1C over a type 4 setting for conditions such as syncope, asthma, with outcomes such as lower rates, lower cost, improved medical outcomes, less diagnostic uncertainty, improving patient provider satisfaction.

Next?

So, to help get our head around this, let me tell the tale of three hospitals for what works and what doesn't. Hospital A has observation patients indicated by the blue beds in this graphic scattered throughout the hospital mixed with inpatients. Their length of stay will be about 33 hours. The cost per case is about \$1978.

Hospital B might take these patients and cohort them in an inpatient unit and manage them by protocols. Thereby, they decrease the length of stay to, say, 28 hours and cost about \$1800.

In Hospital C, they take it a step further and move those outpatients completely out of an inpatient setting, and the cost per case comes down to about \$1342 and the length of stay goes down to about 17 hours.

As you can imagine, if you run the math on that, comparing C with A, hospital C, hospital with about 3000 observations per year, hospital C will save \$1.9 million per year and cost alone. Not only that, if you divided the bed days, hospital C will save 4125 bed days per year. With the contribution margin of a bad day being \$1000? That will bring in, between cost savings and revenue enhancement, that will realize a \$6 million benefit per year.

Now, are these hypothetical, imaginary numbers? No, let me share a real world Emory data with you for four hospitals within our system that managed both type I and type IV settings. For those four hospitals over the course of the year, they saved \$24.8 million in cost. They opened 10,526 bed days. Not bad for a days work.

Next slide?

And these differences are not one-off. They are sustainable. I have graphed them over time. There is consistently about a 24 hour difference in length of stay and about \$1000 in difference of cost is a big impact on hospital operations no matter what size of hospital.

Next slide?

For hospitals, it's great. For physicians, it's not always so great because with emergent physicians, their ability to bill for the service is driven by some nuances and a critical number of beds.

I won't get in the weeds, but where we basically show that for physicians to provide this service in a financially sustainable way, just breaking even level, there needs to be at least 20 beds.

So, here in we introduce telemedicine. Telemedicine, as mentioned, is a tool used in medicine for things like critical care visits, emergency visits, and now, also observation visits. It helps hospitals maximize use of resources, be equitable, provide better care. Next slide?

When the pandemic hit, we were working in tele-observation. We now provide a full spectrum of telemedicine services for emergency medicine with tele-EMS, as previously described, a direct to consumer nurse service that we staff, and other things that I will talk about now.

What we have done is taken, of our four observation units in this scenario, we have taken two high-value observation units and had the physicians staff those two units with one physician, giving a combined number of beds of 29 with an annual census of 8713 patients.

Thanks to the support of the SRDRS grant, we are expanding. We are about to double and expand this program for two more hospitals, which will give us a combined visit of 22 beds and 7295 patients.

Very simply, the way it works is the physician comes to his or her shift. They set up their computer, and in the observation unit, the CDU, they turn on the rounding card. After the desk, they go room to room with the cart and see all the patients. They discuss plans, answer questions. The data rows and the physician rounds are in the second unit. In the end, they help comanage patients in these two units for the duration of their shift.

We have been doing this for three years now. January of this year, we published a study where we show that virtual rounding in a type I unit is not inferior to in-person rounding or a sample of 20,861 observation units. Not inferior in terms of the patient's length of stay, the inpatient admission rate, the cost per case, or adverse events – defined by ICU or death.

This slide gives details which I will not get into, but they are available. Which is the breakdown of the controls that we used and the difference over time.

Next slide?



What we are working on now is what I call the superiority study, which is the benefit of tele-observation relative to care in a type IV setting in an inpatient bed. In an example of two hospitals over two years of tele-CDU over traditional setting, over two years, the savings are \$52 million and the bed days saved our 17,547 bed days. Again, not bad.

So, this is not an inferior practice model. It is superior to traditional inpatient care. It addresses a lot of physician staffing issues. More importantly, it helps the hospital prepare for disasters.

Next slide?

In my career, I have seen six examples where just as the ED is the safety net of the healthcare system, the observation unit for the ED (indiscernible) the setting of a disaster. There were two inhalation disasters, two environmental disasters, one epidemic and one pandemic. In all cases, the observation unit was leveraged to help the system prepare and accommodate the sudden influx of patients that came with the disaster.

Next slide?

Again, things to the support of the SRDRS grant, we are developing a model where hospital can adopt a type I observation unit using telemedicine equipment at tremendous advantage to the hospital in terms of cost and operations. But more importantly, by having daily use of telemedicine equipment, when a disaster strikes, they have that equipment running and ready to use.

We are developing observation unit protocols for unique CBRNE chemical, biological, radiation, nuclear, explosive disaster patients for things that physicians don't usually treat, like radiation sickness. If you think about that, with any disaster with that sudden influx of patients needing hospital care, there's going to be a sizable portion that need 6-24 hours of care. If you manage them efficiently, they can be discharged safely and appropriately, which is better than holding them up in a hospital bed and tying up an inpatient.

Number three is that it provides immediate subject matter expertise for the unique conditions that people don't regularly see, like radiation sickness, chemical, etc. In that context, it provides flexible staffing, a pool of physicians that can suddenly be deployed to help cover the disaster patient. It brings and subject matter experts pretty things. And it preserves scarce resources such as PPE and inpatient beds.

With that, I will turn the microphone over to Doctor Lyons.

MATT LYON:

Hey, everybody. I Matt Lyon from WellStarMCG Georgia. We are going to talk about our Virtual Care network. Very similar to what Doctor Carr expressed and the how you use it in a disaster that Doctor Ross talked about, we are going to talk about how our program helps rural hospitals take care of rural patients and also is helpful in a disaster.



Next slide.

It all starts with the rural community hospital. Next slide. With the rural community Hospital, what you find is that there is, you know, smaller populations – otherwise it wouldn't be rural – which means there are less businesses and less economic resources in the community. Because of this, there's often less physicians and other healthcare resources, and because there's less resources immediately available – and as Dr Carr said, time sensitive conditions and distance are two bad things to combine – you often have worse healthcare outcomes. Because you have a less quality of life, you often have people leaving rural counties, rural towns move closer to city centers.

There is also other health disparities that come in with this which leads to less life expectancy in rural counties, which then feeds back into a smaller population.

Next slide?

What I like to -- the way I like to describe this a little bit differently is the negative revenue cycle. So, rural community Hospital often doesn't have the resources they need to take care of the patients are seeking care at the hospital. Because they have less resources, they often transfer patients to other hospitals. This is necessary in many cases, you know, if you don't have a Cath Lab, stroke, stemi capabilities. It also leads to a mindset which is, "We are going to transfer this patient because we are afraid that they are going to get sick."

Because you are transferring more and more patients, you have decreased revenue in your hospitals, you are unable to reinvest in equipment and people, and so, it is a self-fulfilling cycle that you often end up with less resources over time, which decreases your capabilities over time.

Next slide?

This has a dramatic effect on the rural disparities we just talked about. Because you have less resources close to home, you often have delays in seeking care, whether that is for an emergency or chronic conditions. It also, as was explaining before, you have a decrease in the ability to shake care of emergency conditions locally, so you have an increased delay in taking care of those conditions and delays in specialty treatments.

There is also less coordination in care. Because were transferring from your local community to another city, that coordinated care between the specialist, the primary care doctor and the rural community, and maybe even the health system, it's just not there. You can't get people through the cycle of their disease, and making sure they don't have readmission. And ultimately, this leads to higher morbidity and mortality in the rural community, or the rural-urban disparity in healthcare.

Next slide.

So, what we are good to talk about for the next couple minutes is a rural community hospital focused

telemedicine program. Next slide. Again, we have that negative revenue cycle. Our goal here is to decrease unnecessary transfers, and this is a moving target or moving goal. What we want to do is we want to keep more and more patients in the rural hospital. It's where the patient was going to seek care, so if we can prevent a transfer, that's going to have a positive impact over time. The more people we keep in the rural hospital, the more people they can submit bills on, the more income they have, and when they reinvest in themselves with that increased revenue, they have increased ability to care for more and more complex disease.

Patients also see that they are partnering with a larger health system, that they are getting great care in the rural communities, so they don't bypass that hospital as much. That then means they have more timely care, and the hospital has more revenue. This increases the community health care paradigm, which then feeds back on itself, and this is a spiral up instead of a spiral down.

Next?

So, what we have created, what I called is a Rural Hospital Virtual Care Network. You take care of patients anywhere from triage to discharge in that rural hospital. It's not just in the emergency department. We divide that for us into different buckets because it's the way we kind of think about things. It's easier for people to think about the continuum of inpatient being in the hospital, the ER being part of that, and then outpatient being clinic, but really, it's a continuum anywhere in there. We are using telemedicine in that ecosystem to provide connectivity to specialists in an academic healthcare Center.

Our goal is to decrease health care disparity, and that is primarily by keeping low complicity patients in the rural County Hospital. If it is exceeding what we can do by telemedicine or if it is exceeding what the hospital can provide, then we expedite this transfers to a higher level of care when necessary, which then helps decrease the delay.

We are also working on that coordination of care. We may talk about that just for a minute if we have time, but trying to work with the rural hospitals so that the patient is not lost to follow-up, not lost to that specialist. They are getting timely follow-up care.

Then, the last part which is really important is providing educational support for those practitioners in the rural hospital, whether it's the clinicians, the nurses, the respiratory therapists, the pharmacist, today for comfortable taking care of more and more complex patients.

Next slide.

This is just a few pictures here, but again, I wanted to emphasize that this is anywhere from triage to discharge for the patient when they come into the rural hospital. We use a variety of technologies. We connect via audio and video using a Cisco Kodak, and we have both carts and on wall equipment. We are able to see into the patient's room. We can also connect some of our hospitals to the monitor so we can see the hospital monitors real-time remotely, along with our video, very similar to what Dr Carr was showing you in the ambulance. This allows us to make really good clinical decisions on the

patients.

The bottom right down here is a patient that the helicopter had to come into intubate this patient from the left to the right, and we -- we used -- Emory was the medical director for this, so we had a little negotiation between Augusta, Emory and us to take care of this patient.

This is a list of our hospitals. We are the red dot, and Augusta is off to the northwest there. You can see that our hospitals are mostly south and west of Augusta. Coming out from Augusta and down towards the south towards Savannah and left towards Albany is not only some of the worst healthcare outcomes and the highest healthcare disparity in Georgia, it's some of the worst in the United States. We are targeting hospitals where there is a lot of disparity primarily and trying to make this connection.

Next slide.

Our program does come in phases. It does take time to build that positive revenue cycle because we have to establish relationships. So, we generally start in the emergency department to avoid unnecessary transfers and expedite transfers when necessary. That is really place to start, but the largest place, the biggest impact we have is on inpatient, which is more phase 2. We are starting to provide, starting to fill that complex care To provide that knowledge to those inpatient providers so that they can be willing to keep this patient in the rural hospital.

After we get through that phase, then what we try to do is increase the average daily census in a rural hospital by returning the transferred patient back to them for swing bed, rehab, and those types of things.

Phase 4 is regional care coordination between those hospitals and us, Emory, Savannah. We try to work so that patient doesn't get lost in the state because that specialist is in another part of the state than the rural hospital.

Next slide.

These are little bit out of date, month or two out of date. We have seen nearly 3000 patients in this program, nearly 10,000 encounters. Our overall transfer rate is about 20%. During COVID, it was about 20%. This is not a bad thing. What this is showing you is that over time, we have more and more complex cases being at least initially treated in the rural hospital, some of which are going to require services that have to be a higher level hospital.

And so, I'm proud that actually, our transfer rate has actually gone up a little bit because that shows our complexity is increasing. We also look at each individual hospital with the case in Texas, and we can see those are rising to correlate with this.

We don't always transfer to us. You can see that in the next time. We transfer wherever is the best place for that patient. If they already have an established relationship with the hospital, that is where

they go.

End-of-life care is a little less now that COVID has decreased some, but it is better for a patient to have that end-of-life care in their home community.

Next slide.

This is just a couple quotes. When I want to point out is on the bottom right from the Candler County Hospital in Georgia. It's a little hour south of Augusta in that kind of felt that I was telling you had poor healthcare outcomes and health care disparity. They, in 2018, were listed as the number two most likely hospital to close in Georgia. They had approximately an average daily census of without 4-6 patients. After we brought in telemedicine and also a new hospitalist group committed to using telemedicine, we have increased their average daily census to over 20, sometimes even closer to 30. Their case mix index has gone from one to about 1.5.

That has resulted in a 35% increase in their net revenue and a decrease in transfers by over 50%. This had a major impact on their operating margin. I can safely say that they are not on that risk for closure list anymore.

Next slide.

So, how does this help in a disaster? Well, you have heard a little bit about this from Dr Carr on the EMS side and Dr Ross on the observation site. It is very similar to both of those. If you can augment those rural hospitals with telemedicine to increase their complicity of care and revenue, they have more equipment and are able to invest in disaster support. They are able to invest in better-trained staff, able to tie into them with education so we can deliver them disaster education so that they are up-to-date on what they should do.

It also helps with connectivity, like a Dr Ross said. If you are using this daily and something bad happens, you are able to just flip a switch and know what to do. It's ingrained in you. You know how to get the coordination. That allows you an immediate connection with specialists, to be the poison center, so that they can help you in that disaster.

It also helps you with surge management from a statewide perspective. We have 16 rural hospitals. If a disaster happens in one of those hospitals and our academic centers or tertiary level hospitals are starting to have capacity issues, we can also assist in another hospital, rural hospital where they may not have normally been transferred. We can come in and help them.

We also understand those rural hospitals capabilities, so if a disaster happens in a rural county, we know how much capacity that rural hospital has and what the capabilities are. We can stage those transfers out of that rural hospital.

Again, I cannot overemphasize that avenue for education and training, but you have that relationship, then we can help augment them over time.

Next slide.

This is just our QR codes if you want to learn a little bit more about this, and thank you for listening.

ALEXANDER ISAKOV:

Thanks, Matt. I'm the anchor. You guys are definitely smart about telemedicine than I am, but I wanted to let the audience know how this is all wrapped into the Southern Regional Disaster Response System and what that is. I'm Alex Isakov, emergency medicine and EMS physician at Emory, director of our section within our Department of emergency medicine.

Really grateful to represent the executive committee of the Southern Regional Disaster Response System. These are principles from Emory University, Wellstar MCG, the Georgia Department of Public Health, as well as the Georgia Institute for disaster management.

Next slide, please.

For those who may not be familiar, this is an initiative funded by the Administrative-- Administration for Strategic Preparedness Response. This is a grant called the Regional Disaster Health Response mechanism, and we were the fourth region in the US to be awarded this grant. The first two were awarded in regions one and seven in 2018 and 2020. There was an award in region eight, and we applied and were given this award in 2021. And again, grateful for doctors Lyon, Carr, and Ross for being partners in our efforts to improve the capabilities and management for patients. There was a consequence of CBRNE through the capabilities of telehealth medicine in the southern states.

There are broad aims of the SRDRS. Largely, the aim is to improve management of patients that come from the CBRNE incident, improve access to medical subject matter and expertise, improve capacity for management of this patients. In some of the ways in which we hope to do that we have heard described through those various telehealth medicine programs.

Just broadly on the augment, improve, and facilitate, in putting our collaborative group together, we certainly wanted to serve as champions for existing public-private partnerships in our region to access their clinical subject matter expertise and their knowledge of the care of complex patients. That includes some programs that we will talk about later that are also federally funded, like the National Pathogens Training and Education for example, or the Regional Special Pathogens Training Centers, the Poison Control Centers, Radiation Treatment Hospitals... We Will Go over That.

We also have initiatives to try to improve bidirectional sharing information, largely through efforts and development of model of operations coordination, centers themselves across the Southeast region, and, of course, facilitating greater access to clinical subject matter experts to telemedicine means.

Next slide.

We will get into a little bit more detail, but I briefly describe some of our regional partnerships here. We

will talk about one of our major initiatives in the development of medical operations coordination cell capability in the southeast. Of course, expansion of telemedicine systems. And then, the development of a repository of resources for CBRNE mass casualty management.

I think on the... Since this talk is largely aimed at how telemedicine systems can be used to augment patients coming from a CBRNE incident, I wanted emphasize the way that these to augment our systems. You have heard this already in some ways from the previous speakers, but let me say that it's a program that started in Georgia, the Southern Regional Disaster Response System, but has a geographic scope of the southeast region.

What you heard today from these three clinicians and experts in telemedicine are ways in which telemedicine capabilities, whether it be from tele-EMS, tele-observation, or tele-critical care has been implemented for day-to-day use to address the needs of patients in our communities using technology, but also, the Clinical Subject Matter expertise that the health systems that are contributing to the ongoing maintenance of those telemedicine programs.

There is also a commitment by this program to develop the concept of operations to pay for that capability through the means of CBRNE casualties. We know that there is not really enough capacity in any single health system to manage the numbers of casualties that you might expect from one of those instants, so developing capabilities that expand the ability to do that. So, plugging the needs of the patient with the right Clinical Subject Matter Expert's is one of our objectives and initiatives.

That ability to take sustainable programs is day-to-day, for which a good business case exists actually, for the sustainability. It's a pivot capability, and the needs of CBRNE patients is one of the foundations of our program.

I mentioned the develop of medical operations coordination cells. We started working with our partners here in Georgia. The Georgia Coordinating Center is an initiative funded by the state really to better match the needs of patients in the prehospital setting being transported by EMS with the capacities and capabilities of hospitals in a service area or region.

It's... Through that center, there's some visibility on the demand for services in various emergency departments. There's an understanding about where patients are being engaged by the EMS service. And there is a day-to-day use for that center to best match the patient with where capacity exists for them to be cared for. And we are working with our partners there to really utilize their communications availability and sub technology that they have made investments into enhance our ability for patient distribution after a CBRNE incident as well.

One thing that is clear, and actually, reasonably well documented during COVID is that there is excess mortality associated with hospital surge. So, hospitals that are trying to deliver care really beyond their capacity to deliver experience some excess mortality because of the surge.

The administration for strategic preparedness response recognizes that, and really, they are strong advocate for the development of operations coordination sales. Our work with the Georgia

Coordinating Center to develop some of those capabilities is one example, but as we reach out to partners across the Southeast states, we are really looking for other medical operations coordination cells' capabilities that we can learn from, that all of our partners across the eight states can share experiences from. And then also, work to develop some new linkages across the center so we have original approach to patient redistribution when there is a surge in activity.

Next slide, please.

On the issue of using telemedicine or other technologies to address the needs of CBRNE casualties, we worked to develop regional collaborations with subject matter experts that have the knowledge and expertise to manage patients that are suffering chemical injury or radiation injury or bomb blast explosives or bio threat. This regional collaboration of region four poison control centers led by our associate medical director for the SRDRS, clinical toxicologist at the Georgia Poison Center, is an example of that.

Trying to develop dialogue and coordination across the 10 regional poison centers that we have in the HHS region to better manage a volume of patients and provide the appropriate clinical subject matter expertise for their management at hospitals both in the community were those without capabilities as academic health centers.

Another example of working to develop regional collaborations for patients with radiation injury beyond the expertise of the clinical toxicology groups within the Poison Control Center's in the southeast is trying to leverage the Clinical Subject Matter Expertise represented by the Radiation Injury Treatment Network Hospitals who have through arrangements agreed to care for the sickest of patients that would come as a consequence through exposure to ionizing radiation and are also home to significant clinical subject matter expertise that would inform the care of those patients in a clinical hospital setting as well.

I have mentioned previously our relationship for buyer threats with the National Emerging Special Pathogens Training Education Center. Emory University Hospital is one of the principles for that national initiative, funded also by the administration for strategic preparedness and response in the department of Health and Human Services. In region four, we have two federally designated pathogen treatment centers, when it Emory University Hospital and one at UNC Chapel Hill. It is through the network and the development of relationships that this initiative that we are tied to is developing across the Southeast that will have access to the clinical subject matter experts necessary for managing consequence is of a bio threat.

Next slide, please?

Again, this is a very high-level interview. Our 10 minutes left in the hour, and I know that we want to invite opportunities to answer questions. But largely, what the regional special pathogens... Sorry, what the Southern Regional Disaster Response System is doing is from a core of partners, seeking partners across the HHS region for clinical subject matter expertise in bio radiation, chemical exposure, trauma and burn, to have a more collaborative opportunity to better manage patients and



the large volume of patients he might have for those types of incidents.

As described, the telemedicine programs are a major and significant tool or strategy to increase access to Clinical Subject Matter Experts and provide the guidance that's necessary for hospitals across the Southeast region to care for those patients in their local community and transfer those that are most appropriate for transfer.

Next slide, please.

I think this brings us, Boyd, to our question session. Thank you again for everyone's attention and for including me in the presentation.

**BOYD MARK:**

Thank you, all of you, for the excellent information. We have a few questions, but some of them have already been addressed. So everyone can hear the answer, the first one to Doctor Ross regarding the ED CDU observation studies, could you briefly address that and also make sure people have access to getting that information.

**MICHAEL A ROSS:**

Sure, this is easy. If you want to have information to that, just Google "Emory CBU manual", and a 65 page manual will come up. There have been lots of studies, so if you want that, I might have to email them to you. There are some nice overviews that exist as well. There are some other reviews of observation medicine.

For disaster preparedness, Heather Miller is working with the team to prepare kind of a disaster preparedness manual that will have a lot of the observation protocols that we are referring to. We are also preparing a manuscript summarizing the role of observation units in disasters that is not published yet.

By the way, if anyone has a similar experience with an observation unit disaster, please send it to me, and we will add you to the review. But those are probably be the two things, Heather's paper and the Emory manual. If you want literature, email me, and I can send you references.

**BOYD MARK:**

Thank you. Second question we have is for Doctor Carr. I will summarize it just slightly folded up the question is: what are your views for use cases on the other end of the spectrum, namely low acuity treat-in-place to reduce unnecessary transfers?

**MICHAEL J CARR:**

Absolutely, and this is a great question that I frequently get, and it's very reasonable. I mean, when we look back and think about tele-EMS networks, we have all kind of thought about this individually, right? At least those of us in EMS who are really excited about this stuff. We thought about how Virtual Care could support EMS systems, and low acuity treat and release, alternative destinations to the emergency departments comes up as something that would really benefit the system.

In the current landscape of EMS, most agencies rely on the transport to the hospital to get to generate revenue. So, in many ways, I think the capability is there, but especially in our rural markets, we don't want to incentivize EMS crews to call in when an agency may be relying on that transport to the hospital to get paid, right? And to continue to function.

That being said, you know, I think this is an important point. The goal for us is to build the network and build the infrastructure. When we, hopefully, see an ecosystem where EMS reimbursement changes and alternative models of care are reimbursable, we will be ready to go. (Laughs) And I think there are markets where we've been asked to support low acuity treat and release, alternative destinations, but we are not there yet. I really hope in the near future, we will get to a space where we can start to use the network for alternative treatment models such as that.

**BOYD MARK:**

Very good. Thank you for that information. I would like to touch on something while we have a couple of minutes left. Doctor Lyon, you mentioned that you might want or you might have a couple of additional remarks around better care coordination and the benefits of that. Would you like to address that?

**MATT LYON:**

Yeah, just if you think about your own health system the difficulties of getting a patient from an acute care into a clinic, it can be a little bit of a challenge when you start thinking about a rural patient having to be transferred to a city and then getting them back to their home. You know, some of the things that we are working towards is working with rural social workers, connecting them to our social worker so that they can make sure there are no drops between their connecting our pharmacy with the patient's pharmacy, to make sure that the medicines are provided.

Our future is in-home tele-health coordinated care, so that you can really make sure these transitions of care happen appropriately.

**BOYD MARK:**

Very good, thank you. And certainly, we are all mindful of the opportunity to reduce readmissions through better care coordination and the benefits that has for patients, as well as for the health system.

Doctor Isakov, if someone out there wants to get more involved, what would be the steps to go through?

**ALEXANDER ISAKOV:**

Thanks, pretty straightforward. If you look at the slide that is being presented now, you can send an email directly to [srdrs@emory.edu](mailto:srdrs@emory.edu). You can also go to the website and put in a query or an outreach message for collaboration. In some cases, perhaps some audience members here will have already received an engagement tool, something of a survey to see if you have active telemedicine programs or active medical operations coordination sales in your community. We would love to hear from you

and partner with you and link your teams to our teams.

Probably the safest thing would be to send a message to [srdrs@emory.edu](mailto:srdrs@emory.edu).

**BOYD MARK:**

excellent, that's a very clear and understandable path for everyone. Thank you. This has been an outstanding session. A lot of good questions. This is really great work utilizing telemedicine in various ways to address the challenges we have facing our communities and ensuring that people have access to healthcare when they need it urgently, over time, longitudinally. So, thank you very much.

**MICHAEL A ROSS:**

Thank you, Boyd. Thank you, everyone.

**ARIA JAVIDAN:**

Just as we close the session, please remember that our next webinar will be held on November 16. Registration is available on our website. Lastly, please take a few minutes to complete the survey that will pop up at the conclusion of this webinar. Your feedback is very valuable to us. Thank you again to all of our speakers today for their presentation, and thank you to the Southeastern Telehealth Resource Center for hosting today's webinar. Have a great day, everyone.

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