

Good afternoon. I'm Commander Ibad Khan, and I'm representing the Clinician Outreach and Communication Activity, COCA, with the Emergency Risk Communication Branch at the Centers for Disease Control and Prevention. I would like to welcome you to today's COCA Call, The Role of Telehealth and Expanding Access to Health Care During the COVID-19 Pandemic: Considerations for Vaccine Uptake and Monitoring for Adverse Events. Free Continuing Education is offered for this webinar. Instructions on how to earn Continuing Education will be provided at the end of the call.

In compliance with Continuing Education requirements, CDC, our planners, our presenters, and their spouses/partners wish to disclose they have no financial interests or other relationships with the manufacturers of commercial products, suppliers of commercial services, or commercial supporters. Planners have reviewed content to ensure there is no bias. The presentations will not include any discussion of the unlabeled use of a product or a product under investigational use. CDC did not accept commercial support for this Continuing Education activity. At the conclusion of this session, participants will be able to accomplish the following: Discuss CDC's telehealth guidance and considerations for vaccine planning.

Summarize recent discussions with national telehealth providers. Cite current vaccine resources. For example, V-safe, COVID-19 Vaccine Confidence Consults, etc. , and how healthcare facilities can integrate them into existing telehealth services. And describe current telehealth experiences that can inform strategies to build vaccine confidence, address vaccine hesitancy, increase vaccine uptake, and expand vaccine adverse event monitoring.

All participants joining us today are in listen-only mode. After the presentations, there will be a Q&A session. You may submit questions at any time during today's presentations. To ask a question using Zoom, click the Q&A button at the bottom of your screen and type your question in the Q&A box. If you're a patient, please refer your questions to your healthcare provider.

For those who may have media questions, please contact CDC Media Relations at 404-639-3286 or send an email to media@cdc.gov. A video recording of this COCA Call will be posted on COCA's webpage and available to view on demand a few hours after the webinar ends. I would now like to welcome our presenters for today's COCA Call. We are pleased to have with us today Erica Tindall, who is a Public Health Analyst, Nurse Practitioner, and Infection Preventionist, currently serving on the Healthcare Systems Coordination Unit and working on telehealth initiatives as part of CDC's COVID-19 response.

Ann Mond Johnson, who is the CEO at the American Telemedicine Association. Please note that Ann's presentation will not use slides during today's COCA Call. Next, we welcome Michelle Rizor, the Strategic Partnerships Principal on the Virtual Health Team at Spectrum Health, followed by Daniel Smith, the Lead Provider Informaticist at Spectrum Health, and our final presenter today will be Dr. Todd Vento, Medical Director of Specialty and ID Telehealth at Intermountain Healthcare. I'll now turn it over to Ms.

Tindall. Ms. Tindall, please proceed.

Thank you. Hi, everyone, and thank you for joining us today. Again, my name is Erica Tindall, and I have been leading CDC's COVID-19 telehealth initiatives, alongside Dr. Tony Neri and Param Sandhu. During this presentation, I will provide updates on CDC's COVID-19 response telehealth activities, discuss considerations for the use of telehealth in vaccine planning and implementation, and present CDC's telehealth tools and resources for clinicians and healthcare systems.

Next, please. Most of our participants are probably aware of telehealth and telehealth modalities, but just in case, I would like to quickly cover them here. The Health Resources and Services Administration defines telehealth as the use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education public health, and health administration.

Telehealth involves three types of modalities. The synchronous modality includes real-time telephonic or live audio-video interaction, typically with the patient using a smartphone, tablet, or computer.

The asynchronous modality includes store and forward technology where messages, images, or data are collected at one point in time and then interpreted or responded to later. And remote patient monitoring allows direct transmission of a patient's clinical measurements from a distance to their healthcare provider. Next. During the COVID-19 pandemic, CDC has recognized the importance of telehealth to prevent COVID-19 exposures, preserve personal protective equipment or PPE, and reduce patient surges in healthcare facilities. We also -- CDC also appreciates that telehealth, when implemented correctly and equitably, can promote health equity and improve both infectious and chronic disease surveillance and management.

Most recently, CDC has been heavily engaged with key telehealth federal and non-federal partners to monitor the trends and impact of telehealth since the start of the pandemic. CDC has used these partnerships to inform guidance, disseminate information via these COCA Calls, and publish articles highlighting the telehealth landscape over the course of the pandemic, and these publications are listed here. Next slide, please. With more than 20% of U. S.

medical visits conducted virtually last year, it's important to recognize the opportunity for telehealth's role in augmenting current vaccination efforts. Telehealth has applications across the COVID-19 vaccine implementation and administration care continuum, and I would like to present them here. First, telehealth can be used as an opportunity for potential vaccine recipients to engage with the healthcare professional for vaccine consultations. Telehealth modalities can serve as a low-resource, high-impact strategy for healthcare professionals to answer vaccine-related questions, to address recipient-specific health concerns, to screen recipients for vaccine eligibility based on current recommendations, and to connect recipients to a place where they can receive the vaccine. This is also an opportunity for clinicians and public health professionals to debunk misinformation and build vaccine confidence with potential recipients.

Telehealth has the potential to serve as an effective way to address COVID-19 post-vaccination concerns and augment vaccine adverse event monitoring and reporting. In the event of a vaccine side effect or other vaccine reaction, telehealth services offer immediate access to a clinician for evaluation, triage, and referral if indicated. From a healthcare capacity perspective, using telehealth as a tool to evaluate vaccine reactions could also reduce unnecessary patient surge in clinics and hospitals. Lastly, telehealth services can be incorporated in efforts to rapidly scale up resources and sites for vaccine administration. Virtual readiness consultations could support mass vaccination clinic sites or mobile sites to ensure operational efficiency and coordination, site setup and safety, adherence to infection prevention and control and injection safety standards and provide real-time assistance for troubleshooting any issues.

These virtual readiness assessments could be conducted remotely by federal and/or state or local public health officials, infection preventionists, or patient safety or vaccine safety experts. Next slide. Based on the considerations just presented, here is a table depicting how current telehealth modalities could be applied across the vaccine administration care process. CDC recognizes that this is not an exhaustive list, and the upcoming presenters will share more about their innovative approaches to integrating telehealth in their vaccination efforts. Next slide.

In the next few slides, I will share CDC's COVID-19 vaccine resources and telehealth tools for clinicians and telehealth providers. Next slide. It is imperative that all clinicians, including clinicians using telehealth, are up-to-date on all COVID-19 vaccine-related information to adequately inform their patients and also to monitor and report adverse events. CDC has created new web-on-demand, self-paced modules for healthcare providers who will be administering the COVID-19 vaccines. These modules will provide information to healthcare professionals

about the COVID-19 vaccines, vaccine administration procedures, documentation and reporting procedures for adverse events, and guidance from the manufacturer.

Next slide. CDC has also developed a number of resources to support and empower healthcare providers and healthcare systems with the most up-to-date information. The COVID-19 vaccination communication toolkit provides resources designed to help -- help to educate healthcare teams, as well as the tools needed for providers to educate patients. Examples of those tools include How to Build Confidence in COVID-19 Vaccines: A Short Guide For Immunization Coordinators in Medical Centers And Clinics and Quick Answers for Healthcare Professionals to Common Questions People May Ask About COVID-19 Vaccines. CDC also has support lines and resources for healthcare worker questions.

Inquiries can be directly submitted to the Clinician On-Call Center by calling 800-CDC-INFO or submitted electronically via the CDC-INFO submission page. Lastly, Confidence Consults are an opportunity to consult with a CDC COVID-19 Vaccine Confidence Expert. These consults are designed to provide technical assistance specifically to public health professionals to help build vaccine confidence and promote COVID-19 vaccine acceptance in their jurisdictions. To request a 60-minute consultation with a Vaccine Confidence Expert, state and local jurisdictions can send an email to confidenceconsultscdc.gov.

Next slide. V-safe is a smartphone-based telehealth tool that uses text messaging and web surveys to provide personalized health check-ins after someone receives the COVID-19 vaccine. Through V-safe, vaccine recipients can quickly tell CDC if they've had any side effects after getting the COVID-19 vaccine. Depending on their answers, someone from CDC may call to check on them and get more information. V-safe will also remind vaccine recipients to get their second COVID-19 vaccine dose if indicated.

Next slide, please. VaxText is a free text messaging platform and telehealth tool that providers can offer to vaccine recipients. Vaccine recipients can opt in to conveniently receive text message reminders to get their second dose of COVID-19 vaccine, again, if indicated. VaxText also offers the added benefit of reminding recipients to sign up for V-safe. Next slide.

This concludes my presentation. Please be sure to check out the tools shared during this presentation, as well as more information and resources listed under the Additional Resources tab in this COCA Call link. Thank you again for your time and attention. And now, we'll turn it over to Ann from the American Telemedicine Association. Ann?

Thank you, Erica, and thank you for inviting me to participate in this webinar and share insights from the ATA's perspective. I am excited to be here today. And as a reminder, as noted on the slide, I do not have slides. So, I'm just making a few comments, again, sharing from the ATA's perspective. By way of background, the American Telemedicine Association is made up of over 400 organizations including delivery systems, payers, and solution providers.

These organizations share our vision that people should get care where and when they need it and that when they do, they know it's safe, effective, and appropriate while enabling clinicians to do more good for more people. Earlier this year, the ATA partnered with the CDC to facilitate three listening sessions with ATA members. The listening sessions were held in January and focused on telehealth experiences including best practices and challenges in the following areas: Telehealth implementation and scalability. Telehealth in rural communities. And finally, how telehealth supports reducing health disparities that can be used for dealing with vaccine implementation and acceptance.

The goal of the listening sessions was for participants to better understand how telehealth services and tools can be augmented to support vaccine information dissemination and planning. And while we intentionally limited

participation to keep the sessions manageable, there was meaningful participation with the total of 26 companies representing the diverse membership I referenced earlier. Both Intermountain and Spectrum Health, who you'll hear from shortly, are active and committed members of the ATA and participated in the sessions. A few things we learned from these listening sessions: The first is that participants, ATA members, continue to be active and committed to ensuring we work together across the public and private sectors to address the challenges brought about from the pandemic. The next is that telehealth services and platforms continue to expand and provide value, and this is across a range of capabilities, not just synchronous and asynchronous and remote patient monitoring, but in specific and addressing specific patient populations including primary care, behavioral health, ambulatory care, and provider teleconsultations.

Telehealth platforms and services provides scalable and high-impact solutions to disseminate healthcare and vaccine information, and many healthcare organizations and telehealth companies are already working to integrate CDC guidance in virtual screenings, assessments, and COVID-19 vaccine adverse event monitoring protocols. There is an opportunity to guide the integration of existing CDC telehealth tools and resources into existing telehealth platforms and virtual healthcare services. Our members and companies writ large are interested in efforts to improve digital tech literacy, expand network access, decrease the digital divide, and ensure equitable access to telehealth services. The lessons that we've all learned in the pandemic so far is that, during COVID-19, that millions of Americans connected with physicians and other providers using telehealth beyond primary care visits including chronic care, oncology, postoperative care, and cardiology. The pandemic has demonstrated that telehealth and virtual care can increase access to care and provide safe and effective and appropriate care over the phone through devices and through remote monitoring.

The other lesson we've learned is the regulatory complexity of pre-pandemic Medicare has flowed the adoption of telehealth. And now that millions of Americans are benefiting from telehealth, it is essential that policymakers in state capitals and Washington D. C. act now to ensure that no patient lacks access to care when the pandemic ends. HHS OIG Principal Deputy Director Inspector General Christi A.

Grimm noted in a recent statement that early in the COVID-19 pandemic, OIG recognized the value of expanding options for accessing healthcare services. Telehealth is a prime example. Where telehealth and other remote access technologies were once a matter of convenience, the public health emergency made them a matter of safety for many beneficiaries. So, in conclusion, access and consistent quality in healthcare services were problems pre-pandemic. We cannot solve these problems of access and quality without using telehealth.

Access to telehealth is no longer an option in today's society. It is an essential component of care deliver -- delivery. We continue to look forward to partnering with CDC and others that are working to ensure that we mitigate problems that have arisen associated with the pandemic and ensure that all Americans get vaccines safely and effectively and quickly. Thank you. And now, I think I'm turning it over to Daniel Smith.

Good afternoon.

Let's see if Michelle is on. I think Michelle might have been able to connect.

Yeah. Hello, everyone. Can you hear me okay?

Yes. We can hear you. Daniel, is it okay if Michelle goes?

Yeah, of course. Go ahead.

Great. Proceed, Michelle.

Great. Thank you so much for having us today. We are so grateful for the opportunity to talk about our virtual health program. I'm Michelle Rizor from Spectrum Health, and I'm here with my colleague, Daniel Smith. I think before we get started, I just wanted to share that our theme or a main takeaway from our presentation is to stay focused, yet flexible.

So, when I say that, I mean stay focused on your strategic direction, yet remain flexible in the approach that you take to achieving your goals. Virtual and digital health is an extremely dynamic space to be in. So, just remember to stay curious, and don't be afraid to pivot. Next slide, please. So, a little bit about Spectrum Health.

We are an integrated health system serving Southwest and West Michigan with 14 hospitals, 4600 physicians and advanced practice providers, a 1-million-member health plan, and lots of other stats that you see here on this slide. With a team of our 31,000 employees, we strive to deliver personalized health made simple, affordable, and exceptional. You'll see here that in 2020, we conducted over 208,000 video visits, and this does not include any telephone-only or COVID hotline encounters. Next slide, please. So, a little bit about our virtual health program overall.

Spectrum Health first began prioritizing virtual health in 2014. Our efforts started really with the rollout of a direct-to-consumer service we called MedNow, and this service provided low-acuity video visits at a low set price. Steadily over the last 7 years, we've had the opportunity to expand and add new use cases in multiple service lines. Clearly, COVID-19 accelerated I think everybody's virtual health strategy, so we were able to grow a lot in 2020. I'd love to cover a few items here along the healthcare continuum because we really see health, virtual health, as another modality to deliver care, not as something separate.

So, looking at the left side, we have on-demand video visits that are delivered 24/7 by a dedicated team of our Spectrum Health providers. You can think of this kind of as a virtual urgent care model. We also have scheduled video visits with our Spectrum Health primary care and specialty providers including our Helen DeVos Children's Hospital teams. All of our ambulatory practices conduct video visits at this time. We also use virtual health for community partnerships.

So, for example, we have several school-based behavioral health telehealth clinics. Right now, we have four of these in regional high schools, and we're expanding to six more this year. We also leveraged a tool called Care Channel to help us when we had hospital visitor restrictions. Care Channel allows patients in the hospital to connect with friends, family members, and loved ones, even when they can't physically be together. If we look at the middle of this continuum, I'm excited to share that back in April 2020, we entered a partnership with TytoCare, and they developed an FDA-approved consumer device that pairs to our video visits so that a Spectrum Health provider can conduct an ear exam, look at a patient's throat, check a patient's heart rate, assess breathing, take a temperature and do so much more, all while the patient is at home.

TytoCare has really enhanced what we can do virtually beyond the traditional audio-video encounter. We're also leveraging AppScript, which helps our clinicians find and prescribe the highest quality digital health apps for their patients, all using their existing Epic Workflow. Shifting all the way to the right on this continuum, our virtual ICU allows us to provide real-time monitoring from our Central Grand Rapids hospitals to all 54 of our regional hospital ICU rooms across the system. And lastly, I'd like to highlight MyChart Bedside. This really improves our inpatient experience by helping our patients and their families better connect with their care and with their care team.

Next slide, please. So, back in fall of 2019 or in pre-COVID times, Spectrum Health really set virtual care, virtual health, as a system priority. We set this ambitious strategic direction to truly promote a virtual-first model of care. Our three-year goal at that time was to deliver 50% of eligible primary care visits virtually and 25% of

eligible specialty visits virtually. COVID very much accelerated our road map, and I'd love to share a few data points.

So, in 2020, we shifted from an average of 98 video visits per day in March to more than 2000 per day in April 2020. So, we saw a 1900% increase as a result of the COVID-19 pandemic. Over the course of three weeks last spring, we trained 1600 providers and 1200 additional clinical staff on how to deliver virtual care including documentation and billing. For some perspective, prior to COVID, we had around 75 providers that were regularly conducting these video visits. We had hundreds of laptops deployed in a matter of days.

We quickly spun up marketing campaigns to help bring about awareness to our community, and we are just so grateful for the purposeful collaboration that we had between our staff, providers, Information Services, Informatics, Operations, Rev Cycle, Legal, and so many other teams. So, throughout this whirlwind of COVID-19 and rapidly expanding our video visits, we truly remained focused on our goal to deliver the best-in-class virtual experience, yet we stayed flexible on our approach and pivoted a few times. So, for example, with the rapid growth in virtual care and many patients having their very first video visit, we quickly saw the need for more patient support. So, our Digital Support Team at one time was experiencing about a 77% call drop rate with up to hour-long wait times, so we quickly adapted, redeployed some staff to increase our team from 4 to 25 members, and this helped us result in drop rates close to zero and wait times minimized to only a few minutes. So, later into the summer, we realized that our experience we were delivering could be better.

So, in July, we made some big moves. We merged our separate patient portal and video visit applications, integrated with Epic, and shifted to maintaining a single primary video visit platform. We stuck with our system commitment to provide the most secure, compliant, and scalable solution, and so that really pushed us toward a single app experience to help drive personalized care. As a result, we didn't use many of the consumer video platforms such as Facetime or Skype. Further back -- or further ahead in 2020, we shifted our mindset from this rapid training and deployment to truly optimizing the experience.

So, in December of 2020, we switched to yet another video vendor, meaning that we used three different platforms in 2020. Each platform shift required intense collaboration for building, training, educating, and communicating, and we still continue to reimagine our workflows, processes, and staffing. So, to remain focused on our goal, yet stay flexible in our approach, we make sure to continuously listen and seek feedback from our consumers. And in virtual health, we know that consumers include not only our patients, but also providers, staff, payers, employers, students, and many other stakeholder groups. As we all know, these consumers are increasingly expecting a better experience from health care, especially with digital and virtual interactions.

So, we're excited for this challenge to continuously improve and simplify the experience as we continue to deliver convenient and accessible high-quality virtual care. Next slide, please. So, now, we wanted to shift gears and focus more on what virtual and digital solutions we created specifically for COVID-19 testing and vaccine efforts. Next slide, please. So, two virtual health services related to COVID-19.

One was COVID at Home. So, this is remote monitoring for patients who have been discharged from the hospital after a COVID-19 stay. So, hospital care managers will identify these patients who are ready to go home, but still need some monitoring or care. So, each patient goes home and has an initial visit with one of our hospital's team members and then has ongoing monitoring by the home nursing team. So, here, we also pivoted because originally, we leveraged our home-based primary care provider team to do these visits and then later shifted to the hospitalist team.

On the right, we also stood up video visits for COVID vaccine adverse reactions. These visits are supported by our Occupational Health Provider Team, and patients will contact the COVID phone line or take a MyChart

questionnaire and then are scheduled to these visits. So, in January, we had 93 of these visits. And in February, we had 80 of these visits. So, I will now hand it over to Daniel to discuss our digital approaches for COVID testing and vaccine efforts.

Thank you, Michelle. Really good job on that. Well, one of the things I'll just briefly mention before I jump into the next slide is just back when this journey started for Spectrum Health in 2014, I had the pleasure of being one of our first providers to actually offer virtual visits, and it's just been incredible to see how this program has grown and developed over the last few years. You can go ahead to the next slide, please. So, we faced many challenges, like multiple organizations across the country, in meeting our patients' needs as it came to screening and testing for COVID.

Immediately, our initial approach to this relied very heavily on our Virtual Health Team to help mitigate exposure and risk to both our team members and also our community. But I think, as what many organizations have experienced, that process, although working well, became very resource-dependent on people and over time was quickly realized to be a bottleneck in the approach. So, very early on, we recognized the need to go even further to develop a digital approach that would be less people-dependent and a little more automated so we could continue to meet the high demand. Working closely with our EHR vendor, we were actually able to develop a very unique path using our MyChart or our mobile applications and provide a path for patients to go through a process that allowed them to self-screen based on what our current recommendations were from our local Health Department and the CDC to identify patients who were truly at risk, and it allowed us to balance our supply chain as it related to products that we needed to actually screen and test patients. This process, like I stated, was fully automated.

It was initiated by the patient, and we had multiple safety points to ensure that patients weren't progressing through inappropriately. This product took us a couple months to actually get fully stood up and it's been very iterative, kind of re-emphasizing that story that Michelle raised about our overall goals of being very focused and flexible. We knew that we ultimately needed a digital path. We were flexible on how we were going to get there. And ultimately, we were able to stand up a process that is now serving approximately 30,000 patients a month who are seeking the needed testing they are looking for.

You can go ahead to the next slide, please. So, as we started to look at our vaccine distribution, we quickly identified that we were going to experience similar issues in a process that was dependent on patients calling in or us doing outbound calls. We did start there just so we wouldn't have any delay in getting our vaccines distributed, but once again realized we needed a digital path and we needed a process that was easy and accessible to patients. Again, focused and flexible, we definitely pivoted many times in this approach, and our initial launch also relied on our mobile application to our EHR vendor. This was relatively successful, but we did realize there were multiple challenges for our patient that varied from patient portal activation -- the security questions can be challenging at times for patients to navigate.

It is not always as user-friendly for those who have tech disadvantages, and we actually even ran into technical issues where our servers couldn't handle the volume of patients that were accessing the system. So, please go to the next slide. As a consequence of that, we decided to just reinvent the whole process, and we departed from what our EHR vendor was offering and created our own homegrown products in which patients were able to self-identify that they were somebody seeking out a vaccine, which allowed us to get an understanding of, "What does the population look like on a whole? What's our demand versus what's our supply?" And through that process, we created a web form that lives on a dot org that we host and allows the patient to actually sign up for the vaccine, identify where they fit into the phases of distribution as were directed by our local Health Departments, and then allow us to actually take the initiative to contact them when we're ready, really relieving

that burden from our patient from having to return to a webpage or continuously call hoping that they'll be told that we have vaccine available. The system also supported multi-language, which was something that we were striving for and really created a scenario where we were able to notify the patient both that we're ready for them to schedule when we were, but also to let them know that we have their registration, they're still in line, we'll be in touch with them as soon as possible. As we advance this method forward, we are looking to continue to enhance this with an actual digital platform for scheduling.

So, current state, everything happens at a digital level when they're signing up for the registration. We also have the inbound call methods where team members can assist patients who have access issues to technology. And then, once we notify them that we're ready to schedule, they actually reach out to our organization with an inbound call, and we've created a gated path. So that way, we release one-time use codes to each of these patients to ensure that we are actually seeing patients call in to schedule who we had directed to and ensure that they actually meet the current qualifications as were directed by the Health Department. Our future enhancements that we're still actively working on are standing up that digital path so that way we provide both an inbound call option, but also a digital approach so patients can go in and self-schedule that first vaccine administration.

And we actually look to have that stood up within the next two to three weeks. This definitely also helps reduce our need for scheduling via phone. And going back to the fact that people resources tend to be a bottleneck in a lot of these processes, it helps alleviate that burden off of our contact center. This has definitely been a very exciting process over the last few months and actually I guess now a year at this point, but I think some of the lessons we've learned and we've worked to emphasize throughout this conversation is just the need to remain focused and flexible so that way we are able to deliver the ultimate goal we're looking for in the most easy and accessible approach for our patients. This does cover the end of our presentation.

We'd definitely like to thank the CDC for inviting us to be a part of this conversation. And I do believe it is Dr. Todd Vento who is following me.

Yeah. This is the Dr. Vento, and I'm just going to do a quick comms check, as it were. Can you hear me okay?

Yes, Dr. Vento, I can hear you.

All right. Thank you. And I do want to reiterate our -- our gratitude for this opportunity to share our experiences, and I really do appreciate the incredible amount of hard work and coordination effort and just fantastic communication from the entire CDC and COCA Call Team staff in particular. So, it's really a privilege to be able to work with you folks on this. Next slide.

So, actually, it looks like we got a little bit to change on our slide, but this is what I was asked to share, so I'm going to give a little bit of overview on our Intermountain Healthcare programs and talk about where we were with our telehealth program specifically going into the pandemic and public health emergency and then talk about how we accelerated those and how they apply to many aspects of COVID care, as well as potential uses for vaccine care. Next slide. So, just before we get going, always nice to reset our epidemiology because the reality is, if I could emphasize any points, I would say a couple of things going forward. One, really telehealth, I think this pandemic should have cemented in so many people's minds that it is not just an individual clinical tool for individual patients, but it is a form of public health, and I'll emphasize some of the things that we recognized very early on with some integration with our Department of Health, our County Health staff, our State Department of Health staff, that really we were performing public health duties because they were also overwhelmed, as many were during this process early on as we were learning what to do quickly. So, I just want to re-emphasize -- you can hit the next slide.

It should advance -- there we go. So, remember who actually gets hospitalized or has severe illness, it's really older patients, although we also have contribution from pre-existing conditions and comorbidities. I think this is a good slide to think about the fact that we're not going to stop all COVID cases, but we certainly want to decrease the burden on our hospitals, our clinical staff, while maximizing opportunities to take care of patients in places where they maybe can stay and not go to another facility. So, you can see this down here, there's a role for possibilities for early therapeutics, preventing disease progression, and preventing hospitalization. There was already some questions in the chat about home health and remote patient monitoring.

So, I personally feel that there are just tremendous opportunities for telehealth on so many fronts. If you start from an exposure all the way down, all the way through to hospital care, as well as now using telehealth to coordinate for vaccine care, to actually go slide towards prevention of COVID infections. So, next slide. And I think this, the time and age of people resisting telehealth, if you were a late adopter, as they say, I think nothing like a public health emergency to make you be an adopter of this care. So, if you look at the number of claims, almost a 4500% increase in claims for telehealth, but also attitude changes toward telehealth, which is not patients.

This is providers. So, use of telehealth in 2019 from multi-healthcare system surveys showed 11. And now, we're looking at 76%. And I would venture to say that that number is climbing. Next slide.

We personally looked at this when we implemented our infectious disease telehealth program in 2016-17 and had across the board acceptance by leadership and providers. In terms of 100% satisfaction across six categories related to the use of telehealth, which was brand new for these small community hospitals, for a subspecialty clinical program. In terms of patients, we actually surveyed and looked at some demographics to see who was using it, and we had a median actual age of 63 years and more men than women, but very high satisfaction scores, despite the fact that most had either no prior telehealth experience, the vast majority, or even use of, say, any of the devices to actually use telehealth. And we did a follow-on study that showed in 2019 that about 2/3-plus actually preferred to do a video visit over an in-person visit, so we didn't need the pandemic or public health emergency to tell us that this was something that was -- that was really needed and accepted and wanted. What we needed was to have support in CMS and other parity coverages for telehealth, which I think we've made some progress on.

Next slide. So, I'll give you an overview of our program, and then we'll keep going on the telehealth. Next slide. So, this is a light source map, electrical activity for our country, and you can see this dark area in the Intermountain West, and that's really right where we are -- we are situated in the center of all that, and that's our -- our goal and our purpose right now is to actually provide as much access in the form of telehealth specialty, subspecialty, and other care to -- from the Canadian border to the Mexican border in this entire region, and I think this slide is a nice example to show where you can benefit from having subspecialty and specialty care for individuals, say, in rural communities, all the space there that you don't see lights. Next slide.

So, we are an integrated not-for-profit health system. We have approximately 195-plus clinics and 25 hospitals, which include -- which actually includes a virtual hospital where we center all of our patient transfer activities and our coordination for all of our telehealth programs. It's headquartered just south of Salt Lake City, and we actually serve over 50% of the residents' needs in Utah and a large proportion of the healthcare needs across the entire Intermountain West region. Next slide. And recently -- that also includes recent acquisition and integration of the HealthCare Partners in Nevada, so we're actually going to expand a lot more care into Nevada as the year progresses.

Next slide. Okay. Let's talk about where we were pre-COVID-19. Next slide. So, this is our curve, just basically looking at volume by visit.

So, we really had -- TeleCritical Care was our biggest pilot, which is about 7 or 8 years old now. And then, we added some core teleprograms including TeleStroke, TeleCrisis, and in 2016 Tele-Infectious Disease and expanded with oncology. And you can see, we -- actually, we're right at 1 million visits, and we've actually gotten closer to 2000 access points, meaning places where someone can get on a teledevice. That doesn't include their personal device at home. If you click advance, please.

You can see that we went from 1 million pre-COVID to over 2.3 million. Next slide, please. And essentially accelerated. It took us 7 years to get to a million telehealth visits.

And basically, the next million came in 6 months. Another I guess silver lining as it were, if you can even say that about a horrific public health emergency, but at least it allowed us to increase access for our patients and get our providers on board. Next slide. So, in terms of our telehealth services, I won't belabor this, and I'll -- actually, just a forewarning, I'll be skipping a few slides so that we don't have -- so we can limit some of the redundancies on messages that were already given by some of our panelists, but I just wanted to point out that it's not just about having the access, but it's about measuring not just how you've improved patient access to these services, but also what's the quality improvement. So, we've actually had some data to show not just decreased length of stay and transfers, but improved mortality, to include specific conditions that are common in infectious diseases such as Staph aureus bacteremia showing some improved mortality by having access to telehealth.

That's actually in process of submission for publication. Next slide. This is really our -- I have to reset my brain because it's inverted on my slide, but essentially you can see our virtual hospital, and this is where our team of patient safety monitors, some of our telehospitalists, TeleCritical Care care coordinators all sit, in one central hub, kind of a spoked wheel. And this is Dave Guidry, one of our TeleCritical Care, our TeleCare Director, who can actually provide not just the care of the patient, but actually look at the resources during COVID to see where the patient should go, and that's actually integrated with other healthcare systems throughout the entire state and the region so that we can actually cross-level patient care if we have some hospitals that are, say, overwhelmed or moving past contingency care for COVID, which actually we did have to implement during some of our surges earlier this year -- or last year. Next slide.

And I'm just going to leave this in here and skip through in a second, but just to show you the different technologies. The second block with the room kits is really -- most of our facilities and small community hospitals of Intermountain facilities have a built-in camera so we can just get on at any time, particularly useful for our ICUs for TeleCritical Care access, but we also have multiple mobile carts, and we -- with the pandemic, as was discussed earlier -- I think for Spectrum Health folks -- is, you know, having access to tablets, say, in the emergency department so that they don't have to go into a room every 5 or 10 minutes, but maybe they can check with the patient on a tablet. For example, we activated a lot of those features as soon as the pandemic hit and we realized that we need to limit contact to improve infection control. Next slide. So, I want to pause here for a second to kind of talk about direct-to-patient services.

So, we had already had -- established this Connect Care Urgent Care, similar to what was described earlier by the Spectrum folks, but this 24-hour access to provider to get Urgent Care via Connect Care. I'd like to just highlight, if you look at that -- that completed visits, this is not an epidemic curve or epi curve. I get the CDC folks excited right now, they heard the word epi curve. Especially the EIS officers. Hit next slide, please.

And you can see that those visits just represent spikes during flu season. That is an epi curve based off of Connect Care visits. And as we saw that and we realized we had other issues -- we started to see concerns for potential measles exposures a year or two years ago -- we integrated into the Connect Care Portal that patients can access immediately and be seen within, say, 5 to 10 minutes, see a provider, that we actually integrated with infectious disease service and some of our infection prevention folks and all of our emergency departments

so that we wouldn't have, say, a measles scare case show up in an emergency department, which you can imagine has a probably 5 to 6 or even higher times increased risk of transmissibility than SARS-CoV-2. And so, with that in mind, we actually transitioned that to screening in January of 2020, as early as the first week of January, to look at patients returning from both China and Asia, as well as Europe, to identify very early on Connect Care individuals who might actually have been exposed, and we used the CDC screening criteria and linked that with the Health Department and linked that with our InstaCares and emergency departments even as early as early January to start testing and screening for that. And actually because of this program with Connect Care that had already been established, that's how we identified our first patient with COVID.

Actually, they had come out of Italy in Park City, Utah. Next slide. So, you know, just to -- that was to set the stage of how we decided to transition. Of course, just like everyone else I'm sure on the call, it was a rapid -- it was a steep learning curve and rapid transition and not without a lot of anxiety and even, you know, by minute-by-minute changes, so I'm going to highlight -- [Inaudible] Just one more slide. So, well, it looks like we advanced without the suspense.

So, what we realized early on -- and if you can look at that blue peak, that was very low early on, and you can see the darker blue line shows the Connect Care visits and the lighter blue or teal line shows our nurse call line. What happened in one day, even though we had already had our first case transferred on 28 February -- and our actual next case, that was also from a cruise ship, so we had several cases from cruise ships -- is, if you can remember -- click next slide. I hope it shows up. Nope. Back -- go back one, please.

Thank you. So, what really set everything off is those didn't scare folks to change their habits. What scared folks was Rudy Gobert was diagnosed with COVID, who happens to be a Utah Jazz basketball player, and that's what you saw in the 24-hour period with our nurse call line. We broke the nurse call line. One of my younger, recently graduated ID docs actually was on-call and got 70 calls in a matter of, say, 8 minutes because the care line had actually been -- the doc line had actually been inadvertently given to patients as well.

So, it was needless to say a harrowing 24-hour period, but what we realized was we can't continue business as usual, even with our telehealth access. So, Connect Care was not going to be sustainable. We had to shift to telehealth in the form of telephone and really expand our telephone -- telephone triage for COVID screening. And not only that, we realized when that got overwhelmed we had to go to a web-based symptom checker. So, the Urgent Care video visits and Connect Care actually went down, and the other sort of high-capacity services like triage nurse -- triage advice -- advice line actually expanded.

In addition to that, we quickly transitioned to a lot more video visits, as was described by the Spectrum folks, to really take advantage of the fact that folks were now not wanting to come in, and you can even see that with the decline in the red line of InstaCares and the decline in the emergency department use with the purple line. And so, quite a difference in what people did and wanted to do. You can see, they want to talk on the phone, but they don't want to go anywhere. And so, I think this is a nice slide that dictates that. Next slide.

This was the -- no joke -- after Rudy Gobert, "Quickly, let's figure out where we can optimize flow of a patient to make it so they do not have to come physically to a physical location and try to maximize the greens and minimize the reds." That was literally our initial like, "How are we going to do this on short order?" And that's kind of how we did it. So, next slide. And I will emphasize again here that this wouldn't have been possible without the bottom three circles on the right. We had members, myself included, on the Governor's Task Force.

We had the Department of Health, strong link, and we were already well connected with them, and we had all the healthcare systems, not just Intermountain Healthcare, but the university and other systems in Utah and surrounding states where we realized this is going to have to be an integrated public health effort. And so, the

early proof of concept we had for Connect Care screenings, we knew that we could actually accelerate the use of our telehealth resources, but I will tell you the one thing, and I showed you a picture of that telehealth virtual health center really became a command center. And so, it was essentially like a command center to look at all hospital availability, all of our screening operations, our remote patient monitoring, our coordinated efforts to get multi-specialty telehealth disciplines on communicating with one another, and we sort of took it from there. Had we not had that structure; I think it would have been a lot more difficult to then just rapidly implement all of these quick services that came about within a matter of days. Next slide.

So, I'll just highlight the fact that we had hundreds in the Connect Care, and you can see the slope going down. Next slide. And then, realize that, "Look, we have to have another way to screen people fast," and that might be the same situation that you're seeing with vaccines as they break the call lines and break the online sites because there's so many people having an interest. And so, what we did was we just went all in on expanding our call center resource. So, those were hundreds on the Connect Care, but thousands on the actual calls.

I will tell you that the line broke the COVID Call Center for the entire state. And so, Intermountain, for a period of 24 to 36 hours, which was that day of slope increase, took over all of the calls for the Department of Health for the state of Utah. That was a service offered by our CEO, and we quickly adapted to that offer of support. Next slide. This was actually a boon to helping relieve the call line, as well as using a commercial online symptom tracker using a function called Scout through GYANT company, and you can see the increase, that we went really from minimal use -- I actually didn't have the pre-existing numbers, but even the 65,000 of use of this symptom tracker, that would then get integrated into -- if there were the proper -- the specific questions that were answered a certain way, they would lead to an actual test that could be obtained by the patient and have them sent to a drive-through testing location.

Next slide. Just a comment here that this -- this is just proof of concept of accepting the scheduled video visits. We went from essentially nothing in terms of the number of folks using scheduled video visits both on consumer video platforms, which I know there were some earlier questions in the chat on the security of these systems and the fact that these were allowed by federal legislation quickly to adjust to the public health emergency, but have since -- you know, even those can have fairly good security nowadays, but, you know, we've obviously since switched back to our established telehealth platform now that we've expanded the access and reach to all of our specialty and subspecialty locations. Next slide. Same thing.

I just wanted to show you 60,000 visits in one month from essentially nothing two months prior. Next slide. We're currently at about 6000 a week on our video visits. It's about 17% of our -- of our care visits. Honestly, I think those should be higher, but I think folks felt a lot of reassurance by the improvement in the numbers, and they're now going back to their clinicians, which is a good thing, but can also run the risk of having other issues with regard to a public health emergency.

This is really important for us is that we implemented Tele-COVID-19 rounds for 30 hospitals including non-Intermountain facilities, and we had a multi-disciplinary approach so that -- even though we wouldn't do consults on every COVID case in this entire Intermountain West region, the individual providers who were at those facilities who didn't have comfort with current therapeutics -- because as you can imagine, and it's still happening, since we've been here on this talk, I'm sure there's been three more studies that have changed the way we might do COVID care. It was so important for us to have centralized expertise to look at the data, published and otherwise, and try to sort through whether or not we should be giving hydroxychloroquine, which we shouldn't, or whether we should be doing other things. And so, what we realized is our providers out in the rural facilities can't be expected to understand and have access to this because they're very busy, but we can actually provide that resource. So, we did a daily COVID rounds for all of these facilities where we would run the

list of their patients and help them decide whether or not they should get remdesivir, whether they should be transferred for a clinical trial at a major medical center, and this was the composition of the team. And the only reason why that worked is because we already had the virtual hospital that had this multi-disciplinary integrated communication that we just flipped the switch and said, "Look, we're going to dedicate this to a COVID resource for our rural facilities.

" And I will tell you that the carryover for vaccines is that there's been a lot of use of that and also ECHO programs for telementoring so that we can improve vaccine hesitancy issues in our providers, which then translates to vaccine hesitancy in our patients and our residents and our communities, and we've actually identified that as well. Next slide. So, this is our emergency department flow, and I'll just highlight a few things, we really quickly implemented a COVID remote patient monitoring with and without home oxygen, implemented a hospital at home equivalent program, both on the front end, where we eventually allowed patients to not be admitted. If they met certain stability criteria, they could actually have a full hospital at home or they could get a remote patient monitoring on the right lower side. And then, they could also get followup with a video visit from primary care or specialty care.

If they were admitted to med/surg or ICU, we would have immediate TeleCritical Care consultation or subspecialty consultation from ID, other services. And then, we could also, on the back end when they got discharged, continue with home oxygen if they still had oxygen requirements. So, quite the integrated effort, but it was certainly iterative, as was discussed previously by Daniel. Next slide. So, I'm going to skip this concept, the remote patient monitor.

I think it's well-established, and folks can read this in the PDF file. Next slide. I will talk about some novel uses that maybe people don't realize or remember. So, we have an example here. It was a patient that was transferred from Navajo Nation and actually was brought to our attention by the hospitalist team in one facility, so we did a teleconsult for ID, mostly to assess her willingness and ability -- eligibility for plasma versus monoclonal antibodies versus remdesivir and other, and we did that all by tele, and she consented to therapy based on her reading and then talking to her family that wasn't on-site and were able to enroll her in trial.

Next slide. And another thing I would say is we've now done 1000 monoclonal antibody administrations using this teleconnected activity, as well as digital tools. For example, the right side on the top portion of that figure shows how we do our screening for eligibility for testing. And all that data is then incorporated. Once the test comes back positive, we have the demographic factors, we have the risk, and we do the calculation score, and we can automatically have a printout of that test -- of all the positive tests for our entire system in the region, and we will know who is eligible based under EUA criteria for use of monoclonal antibodies.

And if they're 7.5 or higher, as dictated by the state and the EUA processes, we can reach out to them, so we have individual providers doing screening every day, identifying these individuals as soon as they are positive because, you know, the most important thing to do with monoclonal antibiotics is to get to individuals earlier than later because that's where the benefit is. And what we've seen is we've gone from an estimated -- based on the risk factor and age of our patients in this population -- risk of 50% hospitalization by 66-year-old age and a median risk score of 9, which is fairly high, to 4% hospitalization. So, an immediate decrease in severity of illness and hospitalizations. And it's actually down to a number needed to treat of 8.

So, we can -- we treat 8 to get the benefit of the monoclonal antibody to decrease hospitalization or subsequent medical care needs. Next slide. Vaccine opportunities. I will say that when I was first asked to talk about this, the comment I had was that I wasn't sure what we were looking at to increase access, per se, because so much comes through our Health Department, but I will say that we do use the V-safe tool and have our folks, during their observation period after their vaccination, get enrolled right then. And then, as they get their reminders on

logging their symptoms, they're also given our Connect Care information, as well as our nurse hotline access, and those individuals can then make an assessment as to what they would need, and they can reach out to an ID telehealth or COVID-19 provider who can make a determination as to whether that patient needs to be seen more acutely in, say, an InstaCare or emergency department, but this was an opportunity to prevent them from having to go in if the knowledge can be given to individuals quicker.

And I will say that while we're thinking about all the things we have in terms of giving advice to vaccine recipients -- I have actually volunteered to give vaccines. I did that on New Year's Eve, and I will tell you there were a lot of questions that the nursing staff and others aren't prepared to answer. So, I appreciate the CDC tool, but I think others who are thinking about using telehealth technologies ought to think about having access to a knowledgeable provider on a local -- through tele would be optimal -- so that they can answer those questions real-time. I was giving vaccines, but I ended up doing on-the-spot curbside consultations at the vaccine center on that day to answer questions as to whether someone should truly get a vaccine or not based on some other conditions, which they're not always black and white, so I would just put that out there for folks to think about when they're doing these vaccine programs. Next slide.

I'm going to wrap up here. And then, I just listed some concepts, which I mentioned earlier. We not just had -- we didn't only have patient hesitancy, we noticed that we had a much lower rural vaccination rate than metropolitan rates, not because of vaccine access, but because of lack of providers pushing vaccines. And so, we actually used that as a telementoring opportunity on an ECHO program to actually get our providers to actually push more vaccinations in their rural patients. And then, I will say that the Health Department here has been -- as well as the Governor's Task Force -- has been very interested and very proactive now in targeting with mobile clinics to communities that are -- have health disparities and are disproportionately affected by access and also access to telehealth tools, and so really pushing forth mass vaccination clinics in communities where they need them.

Next slide. You can read that later, a summary of what we just talked about, and I think we have -- next slide. I wanted to reiterate Ann's comments that we need to have this federal telehealth legislation and policies continue, and I think there's -- there was just submitted a modernization -- Telehealth Modernization Act -- or is about to be submitted as a Senate-proposed bill and that it's important that we keep pushing for this on all fronts to make sure that we continue things like having this removal of this rural designation because you can see that most of the folks are getting telehealth in metropolitan areas and, you know, peri-suburban type areas as well. So, that that really needs to continue. Next slide.

And next slide. I'd just like to hammer home that telehealth is really a mechanism of providing public health, in addition to individual health care, and I want to thank again the CDC for letting us share our experiences today. And I'm going to turn it back over to, I believe, Commander Khan.

Thank you, Dr. Vento and the presenters. Thank you for providing our audience with such beneficial information. We will now go into our Q&A session. Since we're at the hour, we essentially have time for one question, and what I tried to do is take a look at the Q&A and compile a question that can address multiple sort of themes that people are asking about.

So, this is open to all our presenters. So, please feel free to chime in, introduce yourself when you answer the question, and the question essentially boils down to, "What are your comments or recommendations or lessons learned regarding telehealth when it comes to addressing health equity, A, and B, ensuring that patient telehealth data is secure?"

This is Todd Vento. I'll just comment briefly and have the others -- I'm sure others can comment even more so on the security. Honestly, the systems that we use nowadays are much more secure than I think they were in years past. Certainly, if you're using platforms that have been, you know, commercially developed for this specific function, then that's really a requirement for the encryption and the protected health information protection. So, I don't see that as much of an issue as before.

In terms of healthcare inequities and inequalities, I think the one thing, and I think it was mentioned earlier in the -- and actually, I can see it on there from [inaudible] as well -- is the issue of access and having bandwidth, as well as just simple access to internet. And I think what's going to have to happen is that expansion of access is going to have to have -- have to be in these communities where it might be that it doesn't get to folks' homes for lots of different reasons, but it needs to be something that needs to be put into the communities. And so, we've had, for example, InstaCares and other community resources where individuals can go and have private, sectioned-off areas where they can actually resource other telehealth specialists. For example, we have a volunteer clinic for homeless that actually we've put in systems to have better telehealth specialty consultation to those clinics when individuals come to their clinic and seek other care. So, those are the kinds of things I think we just have to be more aggressive with because we're not necessarily going to flip the switch, no pun intended, on getting everyone broadband access in every community yet, but that is something that we absolutely have to work on at the federal/national level for improving policies to make sure that individuals have that.

And that's not in rural facilities. That's actually in our communities that have persons -- a higher proportion of persons of color where the bandwidth access has been notably not as effective or broad as it should be. So, it's not just about being out there in those areas where there's no facilities. It's actually even in our metropolitan areas.

Yeah, this is Daniel Smith from Spectrum Health. I'll kind of piggyback off of that a little bit just to talk about that equity in -- in digital health, and I think what was just stated is very accurate and representative of our efforts as well, that we so often think of digital access being in the home, but recognize that that's not always feasible for all patients. So, thinking differently, our goal is to meet our patients need as directly and quickly as possible, so we've worked on setting up kind of central hubs in our communities. That way, patients can have access to specialists that maybe aren't readily available where they live but are digitally or electronically available as long as they have the tools they need to succeed.

And I think, in closing -- this is Michelle Rizer from Spectrum -- as we all know, virtual health is in this very unique position to either help with health equity or truly can exacerbate health equity. So, as we're planning, as we're listening to our consumers, as we're being flexible in our approach, this is something that we are always discussing and always talking about. And it's not only the technology or the internet bandwidth, but many other considerations as well.

Thank you very much. I want to thank everyone for joining us today with a special thanks to our presenters. All Continuing Education for COCA Calls are issued online through the CDC Training and Continuing Education Online System at <https://tceols.cdc.gov>.

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