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>> Good afternoon. I'm commander Ibad Khan and I'm representing the COCA with the Emergency Risk Communication Branch at the Centers for Disease Control and Prevention. I'm welcoming you to today's COCA call COVID-19. The CC button is locate on the top or bottom of the screen. All participants are in listen-only mode. For participants to access the Zoom platform, if you are unable to gain or maintain access or experiencing technical difficulty, please access our Facebook www.Facebook.com/CDC outreach and activity. The video will be available immediately after the live call on CDC's Facebook page should you wish to view it at a later time. Again, that web address is emergency.CDC.gov/COCA.

Continuing education is not provided for this COCA call. We will send your questions to viewers after the webinar ends. For more clinical information you can contact the clinical call center at 770-488-7100. The center is available 24 hours a day. We would like to remind clinicians to please refer people to state and [indiscernible] departments for testing and test results. They should not refer people to CDC for where or how to get tested or get test results. Also please remember to visit -- COCA call announcements will also be sent very email. Please share the call announcement with your clinical colleagues. Before I introduce the presenters, it's my honor to announce we have a special guest speaker, Dr. Robert Redfield.

>> Thank you very much. And good afternoon. I appreciate the opportunity to speak with you today. I think as we all know, we are confronting the greatest public health challenge to our nation in more than a century. The current date indicates the pandemic is reaching a peak and declining in many parts of the country where we see decreased activity.

I would like to personally tell you how grateful we are for all you do. The healthcare workers you putting your own health at risk are truly the heroes of our pandemic response. We always understood the healthcare workers would be essential combating pandemics but I think you can see with this one it's more true than many of us anticipated. You're in the front lines and face an unprecedented situation.

I want you to know that protecting healthcare workers, yourselves is a colleague at CDC and we continue to try to focus on our public health response collectively. We've been working aggressively to advise healthcare personnel how to keep one safe in this crisis. This virus is clearly one of the most aggressive viruses. We're trying to update our tools that can be used to prevent infections among healthcare personnel as we learn more and more about this virus and how it is spread. We have released strategies to help healthcare facilities to make the best use of PPE as we hear from many of you on the ground as there have been lack of supplies.

We have had to alter strategies because of the crisis mode of the current outbreak in our country. You've seen strategies to reuse N95 masks, etc., but these all reflect the hard realities of the crisis we have to respond to and keep healthcare workers safe.

I know myself and CDC workers are inspired by dedication we see in healthcare professionals.

Earlier this week we did release the first report of healthcare workers infected, it was up almost 10,000 individuals and majority of those did not require hospitalization. I think yesterday the numbers now are up to almost 16,000 healthcare professionals have become infected.

I wanted to take a moment to just remind us all we'll get through this together. The other day many of you saw the announcement of guidance to try to begin to open up America again. When this outbreak first started, back in our first case in I think January 21st, 22nd single case return from China all the way to February 27th, this nation had 14 cases all linked to China travel. I will say a majority of those cases, 11 were diagnosed because of astute clinicians and was able to establish that diagnosis based on that link. Since then we've seen community transmission throughout our nation and I think many of you know the state of the outbreak.

In opening up America again, I want to come back to how important the work that you as healthcare providers is going to be. In the early outbreak in January/February we were able to use containment as our major public health strategy and it was an effective strategy of early diagnosis as I said many times because of the healthcare providers following contact tracing with public health colleagues, isolation and quarantine.

And we were able to really have the containment strategy work. But then we saw that unfortunately the epidemic spread, we had sustained community transmission. And the public health containment strategy was no longer able to be conducted with the public health system we had and went into aggressive mitigation and that's where we have been since. We're now at the stage of reopening America. Each state will develop their own timing to do that.

The goal of that is to go back to re-embracing containment as our central public health strategy which is then further supported by different degrees of mitigation and that containment is 100% dependent once again on astute healthcare providers to be able to make an early diagnosis, isolate, work with public health individuals to do contact tracing, then new diagnosis of the contacts, isolation, and then contacting their contacts. And you can see over and over again so we can prevent this virus from being able to reenter into our society in a way that it has sustained community transformation.

And I just want to emphasize it's the backbone of our health system, health providers like you which will determine whether we're successful in being able to bring containment back as the principal strategy to contain this virus. We have some time to do that as nation opens up. It's critical cases that are identified are identified quickly and contacts are evaluated effectively. But it's also important we build this team together because it's very, very probable that next late fall 2020, winter 2021 that we will be back in the throws of fighting a substantial outbreak against this virus.

And hopefully this time we'll be able to stay in the mode of high containment because of astute diagnosis, contact tracing, isolation and you will be a critical component of. I have confidence in the American spirit to get this done. I have enormous confidence in the medical professional. I am confident if we continue to work together you will not only protect your patients and coworkers but protect our nation by allowing this public health response to basically challenge and defeat this virus.

Lastly I would like, you know, this is a bidirectional learning. We learn a lot from each of you. Obviously, you have insights, issues, concerns, things you think need to be done better in the public health response -- I truly do invite your comments. And I would appreciate them. So on behalf of everybody at CDC, I want to thank you all for what you do. Thank you.

>> Dr. Redfield, thank you for your time, expertise and insight and especially for your leadership. At this point I would like to introduce our presenters for today's COCA call. Our first presenter, Dr. Aaron Harris is the team lead for the healthcare systems coordination team for CDC's COVID-19 response. Nancy Foster is the vice-president of quality and patient safety policy at American Hospital Association. Third is David Reich is chief operating officer at Mount Sinai Hospital in New York and then Amy Phillips vice-president chief clinical Officer. I would now turn it over to Dr. Aaron Harris, please proceed.

>> Aaron Harris: Thank you commander and thank you, Dr. Redfield. CDC's healthcare coordination team is tasked with monitoring the impact of COVID-19 on the national health system. As part of this effort we are really excited to learn early lessons from hard-hit health systems responding to cries on the front line the. Number of cases continues to rise quickly as we are in the acceleration phase of the pandemic. As of April 16 -- most US states now report some community spread of COVID-19. Of those, 30 states report COVID-19 cases are widespread.

The overall cumulative COVID-19 associated hospitalization rate is 12.3 per 100,000s with highest rates in persons 60 or older. Hospitalization rates for COVID-19 in older people are higher than typically seen early in a flu season.

CDC is also modifying existing surveillance systems to track COVID-19 impact on healthcare systems. CDC and state and local health authorities have been listening to patients, clinicians and healthcare facilities to learn which challenges are most pressing and CDC has been issuing guidance based on best available evidence to address these challenges.

Certain jurisdictions and healthcare facilities have already experienced intense pressure on their health system due to COVID-19 and have learned what strategies worked for them and which didn't regarding their staff, space, and supplies needed.

Other jurisdictions and facilities may still be in the pre-crisis period and learn from those already there. It's important to note the health systems had existing plans in place which highlights the importance of being prepared.

We are fortunate to be joined today with Dr. Reich from the Mount Sinai Health System and Dr. Compton-Phillips to share values experiences including staff engagement and training, including integration of [indiscernible] staff, telemedicine, creating COVID-19 wings of their hospitalling, doubling ventilator capacity, therapeutics and clinical trials, and respecting the mental health strain on their staff.

The insights shared today on the call as well as through the webinar chat function will a aid CDC for developing further systems.

>> Nancy Foster: Thanks so much. Let me begin by thanking you and your colleagues at CDC. I know that the AHA has been extremely pleased to be able to push out your guidance to member hospitals and all hospitals across the country. It's been extremely helpful as they prepare and learn about COVID-19 and began to deal with it. We constantly hear from our members they want more from CDC. So I guess that is the challenge in front of all of you. But it's been such a great pleasure to work you and your colleagues. And we count that as one of the great opportunities

that continues to be there for all of us going forward.

Let me talk a little bit about healthcare systems just to set the groundwork for what you'll hear from the other doctors. Healthcare systems that the American Hospital Association has the pleasure of representing all across the country but they are highly varied.

Some are multisite, multihospital systems that have a presence across a large number of states. Some are more regional and surround a core hospital like in an academic Medical Center or another large hospital in a region taking responsibility for and working with a series of smaller hospitals. Then there are smaller regional coalitions of hospitals that came together to share information, share resources, and make their communities healthier.

The special strength of working together in a health system are many, but let me highlight just five of them that have proven to be really instrumental in the response to COVID-19.

The first one I want to call out is that many of the health systems we have a privilege of working with have their own data teams, have a strong analytic team and using that constantly to understand what's going on with their communities, what kind of patients are coming to them, what medications are working, what strategies are worth and so forth. it really drives decisions for their system and they take the decisions and strategies working in one hospital and share that across many hospitals.

It is complemented by the fact that they often have individuals who are -- who have the habit of following the literature in their particular field and who share those learnings in a way that is digestivable and useful to their colleagues so everyone can learn from this consensus of the literature about what is most useful.

That strength has provided such a unique opportunity for many of our healthcare systems to really get ahead of the curve before it came into their community in ways that I think will prove to be one of the best practices ever for addressing any kind of emergency.

The second one I want to call out is the ability of a system to be able to move resources as needed. They often have more purchasing power, they have greater access to capital. And those are very valuable resources when you have to do something quickly, you have to stand up tents or new structures so that you can appropriately house additional COVID-19 patients or screen for COVID in a parking lot or some other structures. These kinds of resources are very effective. One of the things that we saw from some of the hospitals and some of the systems is that they were able to move needed resources like PPE or ventilators around within their system in order to feel like the wave that was about to hit one community was well-resourced in that community.

And then to shift those resources back if another part of the system was now faced with an outbreak.

I want to come back to this notion of great financial stress because as we look across the country, we are seeing more and more hospitals under extreme financial stress -- many of them run sort of at razor-thin margins anyway. But the double whammy of having to invest resources in preparing to address an outbreak in your community and having to curtail normal operations in your facility, normal elective surgeries or other procedures that could be safely put off has really caused financial strain on many hospitals.

We believe that our systems are more able to sustain that kind of financial

stress. They have a deeper set of resources. And I am critically worried about the small stand-alone critical access hospitals and other stand-alone hospitals in this country experiencing that stress but don't have that same depth of financial resource to turn to.

It would not surprise me to hear more and more of those hospitals talking about thinking about bankruptcy or other severe steps in order to recognize the financial stress that they under.

The third thing I want to call out is that our large systems have greater numbers of staff with the appropriate expertise to address the COVID-19 patients. And oftentimes they have relationships with universities or companies that are engaged in innovating in the community. So coupling that expertise with wanting to innovate. We've seen a number of innovative strategies, new ways -- I'm hoping Dr. Compton-Phillips will talk about providence standing up the 100 million masks campaign and disperse masks, engage with new novel providers of face masks and face shields and a variety of personal protective equipment so desperately needed.

The fourth thing I want to call is the existing telehealth platforms many of these systems had that they were able to augment and strength in order to do virtual visits and keep people healthy, especially those with chronic diseases without having to come into the hospital. So critically important in this era and set a pattern for I think what we will see going forward in the future. Certainly I hope that will be a part the transformation of coming out of this whole experience.

The final strength I want to call out is this notion of being able to use the real strengths of a centralized system. Not all of our systems are centralized, but those that are, that have this common EHR platform that have the ability to share data readily across all of their hospitals across their system and that can think strategically about how to cohort patients in a community so they have a single hospital taking the bulk of patients COVID-19 in a community or Marshall the most seriously ill patients to intubate them and use those strengths across the healthcare system to bring them to bear on the patients in a particular community has been remarkable.

In addition to strengths, I think there are special challenges I'd like to call out. One, those that cross state lines and have to deal with multiple jurisdictions have this particular challenges in this outbreak. In fact, as we've talked to hospital systems that cross multiple state lines, one of the challenges is trying to keep up with all the different state-wide decisions and community decisions on who should sell [indiscernible], who can come to work, what's the surge plan, different data collection strategies. Those things take a lot of time and sometimes take resources away from care of patients.

So when you have to manage it across a lot of different domains, it is indeed a challenge.

I think strategically the nation needs to think carefully about how to work more effectively across the states and with the federal government to have a more unified approach to many of these that will be essential for addressing any kind of outbreak going forward, whether COVID-19 or different pathogen that comes at us.

The second challenge which may also be an opportunity many faced that we heard from is that they are seen as the coordinating force in a community, the largest healthcare delivery system and therefore seen as that coordinating force which is a good thing in many respects but for some of the hospitals and some of the systems they were so busy trying to prepare themselves to take cake of these critically ill patients it was a challenge to be able to spare the resources to help others get

prepared as well, including nursing homes and smaller hospitals and private physician practices and others.

So we need to think about that carefully and how we can make that happen more effectively going forward.

And then finally, probably a challenge that many systems have routinely is the larger they are, the harder it is to maintain this link to the community that is so vital to maintaining the trust of the community and delivering the right care for them. And particularly at a time when everyone in the community's feeling stressed, that trust is so important. So how they've been able to engage with their local communities while still maintaining this national or regional presence has been varied across the country but on the mind of our system leaders as I know.

In conclusion I just want to point out that we'll talk a lot about some of the ways in which systems have responded. And I'm like all of you looking forward to hearing how Mount Sinai and the providence health system responded even as we return to recovery and to the next stage which would be rebuilding, I think in all of that systems will play a critical vital role -- maybe a little bit different depending on their own structures. But working together, sharing these kinds of stories will be vital through each of those strategies of response, recovery, and rebuilding.

With that, I'd like to turn it over to Dr. David Reich.

>> David Reich: Thank you very much. I'm the president and chief operating officer of the Mount Sinai Hospital, one of the eight campuses of the Mount Sinai System. I think I'll go through this relatively quickly but start with the disclaimers.

Next slide, please.

So being 8 hospitals located throughout New York City with one hospital in Long Island before COVID-19 we would say we had 4.1 million annual visits, 410 -- mainly challenges can be thought of in these four buckets. As far as person protective equipment, you already know supply chain is extremely challenge when everyone around the world is competing for the same equipment. Training our staff has been extraordinarily difficult especially when the equipment seems to change day by day. "I saw pink and blue gowns today and yesterday they were green." And then contingency planning is extremely difficult in circumstance where there is maybe two to five days of supply on hand.

Extended use and limited use of PPE has become important to us. I'll come back to that. Workforce management is key. We'll go over communication later. But once again communicate, communicate, communicate. We have to be constantly in communication with our staff, sometimes email works, etc. it has to be tailored on the moment at hand. Employee engagement has been so important because the employees are true heroes. But it is definitely so true. But making them feel they are the most important thing to us is a challenge especially when there are shortages of PPE, etc.

I want to make a key point right now about leadership redeployment. With the vast number of incredibly ill patients that came into our health system, three of our campuses are outside of Manhattan. One is in Brooklyn, in queens and Nassau County. They were overrun. One of the hospitals had a problem that key leader became ill. And the key message I want you to remember is when you have to send substitute leaders in, we sent in a team -- chief operating officer, a chief nursing officer, and delegation to people from the department of surgery and other departments because we really had to almost swarm into that hospital and acted like a system and transferred as many patients out of that hospital as we could. We'll come back to that.

Increase the workforce is very challenging. Once again, everyone competing for CRNA's. And team-based care models effectively means when you stretch nursing beyond their normal capacity you have to embed advanced providers with the nursing team so the team blurs. And they blur fairly effectively because in a moment of crisis people do come together.

Physical plan and increase capacity. Expansion of our critical care capacity was dramatic. I will go over that in the next slide. At one point my estimation we had about four times the normal amount of people on ventilators. We increased the number of rooms by an order of magnitude. We built tents but also in lobbies and hallway and our use of telemedicine skyrocketed by about a thousand-fold. All of a sudden it became the only way anybody could see a patient. We went from maybe 25 in the month of January to something in the range of 2,500 in the month of April or averaged out over March and April. Testing and therapeutics. Getting in-house testing was not easy. Laboratory professionals want tests to be reliable and valid and so do all of us. And doing that in days instead of weeks and months was not easy. We'll go back into ventilator acquisition and management.

And I've learned an awful lot about convalescent plasma. And providing access to clinical trials not just at the university hospital, that's what I call this campus but across all campuses was something was extremely important to all of our campuses. And finally I'll go into the anticoagulation protocol. This is not the totality of our health system, this is five of our eight campuses. The growth rate and slope gives you some very important to look at.

If you look at the point of about March 22 through 25, everyone from the governor and down was in extreme anxiety because we were doubling at one point every two and a half days. Thank goodness social distancing and all other mitigating factors were put in place in the state of New York because we reached the point where the plateau was this week and we're finally starting to slowly come down from the peak of the curve and then the post-peak plateau.

This timeline was put together painstakingly by my colleagues in infection and prevention. These slides are available afterwards because I won't spend of time on it. On February 29, a day I'll never really forget because I was having a very nice dinner when I got a call from our chief prevention infection said our first patients were coming in for testing who traveled to a nation and the tests were positive. It wasn't theoretical, it was real. And the New York pause followed shortly thereafter. By March we had implemented social distancing and were able to bring in-house testing live on March 17. That was extremely important for us because we were burning at PPE through a crazy rate because the patients under monitoring and investigation were waiting up to six dates before the external labs could get us results. We used one of the company platforms, and that was a game-changer for knowing in 12 hours. And that eliminated the patient under monitoring category.

Also we were blessed on March 24 because we imported a test for antibodies into our laboratory. And then just recently about two days ago we received an emergency use authorization from the FDA. This was extremely important because within only a few days we were able to begin the convalescent program. Although I want to be clear the FDA has only given us an authorization for qualitative testing but we did do titers.

On March 26 we started something that still exist to this day, we started putting two patients in ICU rooms. And we still have over 30 of those. And that is extraordinarily challenging for our staff but something that was very much a key to our success in managing four times the number of ventilated patients. On -- we had

the opening the field tents. And then greater than -- on April 8 opening our first COVID unit.

In personal protective equipment it was extremely important when we were able to establish special droplet precautions as a standard for staff outside the aerosol. It's not the N95 mask but the N95's had to be preserved. I will say there's a psychological benefit of wearing a an N95 under a surgery mask. So as much as this was so important to us in the early stages of this because we didn't have enough N95's, it did not achieve the psychological needs of our staff and I think that's the fair point to take away from this slide.

In creating a better psychological spirit, sort of the sense of well-being that need to be there for the floors, we moved to what we call extended use PPE units. Now, using what's probably a few miles of red, yellow and green tape by creating zone markers on the floors what's a hot, immediate, and clean zone, we were able to provide a better system for our staff to understand exactly how we should have limited reuse and extended use of the N95 respirators. If a patient is not on contact for another pathogen, if the gown is not damaged it is reused. People felt comfortable with the extended use of isolation gown and reuse of the N95 respirators.

I do elbow bump rounds and try to walk the COVID-19 hospital. It's 9,000 steps. And doing twice daily huddles with local leadership. Crisis communication broadcast messages generally come out from the system as a whole and we try to -- we restrain ourselves from doing site-based messages to things that are very specific. We do twice daily calls with our bargaining units. We have extensive unionization of our workforce in New York City and maintain close relationship is very important. We do weekly town halls and I do those on this campus with the dean of the school of medicine. They're very well-attended, at one point we had more than 3,800 people and we have 10,000 people on the campus.

And then I think -- ensuring a stable workforce meant redeploying staff and leadership. We have specialists that are now working with hospitalist teams and critical care teams. Everyone lost their original title and became something new. We've put out educational materials about the management of basically respirator failure and critical care of these patients. And the team-based care model I referred to before is everyone forgot about their original role and figured out their new role. And people were very innovative and thoughtful. We used volunteers and crisis staff. We used crisis staff to everyone except physicians -- nurses, support services. We had incredible food donations, sleeping stations to give our staff support and set up wellness initiatives in the form of crisis hot lines and other means of supporting the staff.

These holes you see white panels with little holes are negative pressure rooms created by putting hepa filters in regular rooms. We transitioned 10 adult units to ICUS. We doubled the occupancy. We converted a total of 260 patient rooms to negative pressure rooms. Incorporated remote patient monitor and care of monitoring and expanded telemedicine services.

These are tents in Central Park. I joked to my staff for years it was such a waste to have Central Park and we need to put patient care there. It has been extraordinary and we have right now 47 patients being cared for in those tents in Central Park with our partnership with samaritans first. They came with excellent physicians and nurses and doing something we could not do -- they're caring for bed. The first lesson learned is you have to wait 21 days to make sure you had adequate titers and absence of viral shedding.

And I think I'll just say that this slide is available to everyone to review later. This is just a basic algorithm for treatment that worked for us. But the idea is that stratifying patients since -- into mild, severe, and critical was very important to help rationalize what could have been a chaotic enterprise.

And I think the response of the New York community to the call for plasma donation has been nothing short of miraculous. We have identified at this point close to 3,000 patients with high titers of antibodies and several hundred of them have donated to our plasma program. As of this morning 91 patients at our system has received plasma.

So the convalescent plasma is a heavy lift logistically. There's the Mayo Clinic, I encourage everyone to go to the website and learn about it. If you can afterwards, come back to this slide because logistics are a bear. But you can do it and we're hoping it works.

I think I'll skip over this slide in the interest of time.

Increasing ventilator capacity was very important. We used our human simulation to ramp up home ventilators to deliver higher concentrations of oxygen. Even though I don't like the idea, we came up a ventilator-splitting protocols. Email me and I'll share that with you.

This is the respiratory device use, we're using a lot of devices. This is very respiratory support disease.

We and other centers in the nation come to the realization there is molecular thrombosis. And we are even looking into -- we now have a case series of patients receiving therapy. This is not evidence-based but it is something all of us feel strongly about because we've seen so many thrombosis issues.

We think this is plateau week and we're very happy about that.

And I think it's important to thank everyone. We're putting up a massive sign to thank our healthcare workers. And I want to thank all of you for listening. We very much appreciate your attention.

And that is my email address and I promise that our team will get back to any of you who send a question. It is now my honor and and privilege to introduce Amy Phillips

>> Amy Compton-Phillips: Should I go through the talk or have questions?

>> I would like you to resume your presentation. We have time allocated that if we need to go over we can do the Q&A after you're done with your presentation. Please proceed as normal.

>> Amy Compton-Phillips: Thank you all. I'm the chief clinical officer at Providence St. Joseph. For those of you who don't know us, we're a large health system up and down the west coast and extend from Alaska down to Southern California to Orange County and as Far East Texas. We have 51 hospitals. We had the fortunate or misfortunate of getting the first patient with COVID-19 back in late January of this year. What that did for us is it made us realize exactly like you did, Dr. Reich in New York that this was real.

We'd been following it from afar like our infection specialists do, but when it hit Everett, we put together our emergency command center knowing it was here in the center. And we started doing the work in the clinical sphere and rapidly particularly with the first case of community transmission in February went into full-on mode. So I'll talk about these different elements into the talk, how we actually ramped up our care and playbook. We're now in the post-crisis as we're calling the new abnormal for what does this mean for the future.

We realized early on this was going to be bad and we needed to be ready. And

we figured we would hope for the best, plan for the worst as people do. And if we planned effectively and we stayed ahead of the curve, we didn't have to be in reactive mode that we could actually start helping people realize we could be the port in the storm.

And so that's really what we've been planning from the beginning is we need to stay ahead and be ahead of what came our way. Our initial framework was we had as we were thinking back in early February that we had to be ready to triage a number of people that didn't know what was going on with them, to get them access to testing capacity. And to be able to treat them effectively even though we didn't know what effective treatments was, we had to be able to manage their symptoms. And we had to do that in a way people could understand and flow through.

We're based in Seattle and have a lot of tech talent near us. We said we'll leverage what we had in place which was our telehealth capability and build on that existing. We set up drive through testing that everybody has now.

We also had the capacity to click onto now I think everybody's doing it to virtual visits that could help decide whether or not you need testing. We also built something because we knew we wouldn't have bed capacity or anticipating we wouldn't have bed capacity, we built a home monitoring program if people were at risk in a high-risk population and we were still waiting for 24/48 hours, at one point 7 days we'd send them home with a pulse ox and thermometer. So we could do self-monitoring at home. And we started by using our teleICU nurses to staff that instantly because we turned it in on I don't know two days. So now we've had about 2,000 patients go through the self-monitoring program and it keeps 88-year-old people who might be at risk.

And we rapidly upped our telehealthcare and turned on our repeat ICU monitoring and we support New York as well as telehospitalist. So we could actually ensure that hospitals in rural areas or underserved areas where there is a demand/supply mismatch were supported through telehealth. So having that to build on instantly was a huge help.

Last year in 2019 we did roughly 70,000 in a year now it's 70,000 in a week. We also started out with like everybody I think probably in February and in early March we were going we've got to figure this out. And then we realized the implications of what could happen. We did on the in have it quite happen because we did social distancing early. We put together a pandemic playbook that everybody in our system could be ready. And we really thought through what are the people, places and products we need? We went through our assets. We put together an entire people plan. We have an HR system to say who has what skills to rapidly redeploy.

We rapidly pull people -- anesthesiologists turn their machines into ventilator machines. We also did the same thing with redeploying beds to be able to make ICU capacity be rapidly turned up. And in the product category, we did sourcing from all over the planet but as the supply lines broke down we got desperate and as you heard ended up sitting down in our conference rooms and starting to make masks. And the news heard and that's how we ended up starting the 100 million mask campaign and recruited a significant number of corporate partners of ensuring the PPE supply is manufacturing onshore to keep our people in the PPE supplies we need.

We actually have gotten to the point now on the west coast between conservation measures, between our reprocessing measures because now we're able to do reprocessing of surgical masks and N95s as well as through supply chain improvement, we're actually starting to phase back in going to N95 protection where previously we had all droplet protections. So it's been good being able to have those supply

lines start to improve.

If you go to the next slide, the pandemic planning was really important but then we started seeing about two or three weeks ago now on the west coast that we were probably over the peak of the curve or at least on the plateau. That our social distancing on this slide had actually been able to take us from what we were expecting which was the red line down to the blue line, that we had decreased the transmission we'd keep the surge within the capacity of the healthcare system.

Because that happened, we thought what is this new abnormal? What do we need to do now to figure out how to keep care happening in a post-COVID-19 world? Like how do we do things like ensure we have COVID-19-free sites to make patients comfortable to come back in? We've seen our rates of people coming in or heart attacks and strokes so things you would in the expect to be cured by COVID-19 go down by half. We have a significant number of people with completed MI's and strokes that are no longer reversible. We can't treat it. And because of that our belief is that it really is fear keeping people away.

And so now as we're starting to come down the back side of that wave we have to figure out how to people get the acute care they need and how to get people the ongoing care they need. And so at the moment we're very much focused on how do we actually start to get people back to ensuring that it's not everything else that's impacting their health the way that we worry about?

So what we've decided to do is we simply have to be able to use data to drive our decisions. So from the very beginning, we've done like what you did at Mount Sinai and we started doing this honestly in late January was building a data registry and platform that is incredibly helpful for us and not just looking at where we are at the moment but looking at where we think we're going.

And so we came in real time and this was a screenshot of Monday's -- last Monday's. So just saying, you know, where are we, how many vents are we using, what's our capacity, what can we do? You can see our number of patients with COVID-19 are significant down off of our peak. So we really do believe we're on this back side of the acute care but not filling our facilities and they're normally pretty full to the rim. So, again, this is back into the what does the clinical care recovery look like?

So the nice thing with the tool is it's not just planning on what's going on but we can look at outcomes. So this slides happens to be of people discharged from our facilities that use EP I C but it is the 34 on it. So we're looking in and able to do a little bit of both operational learning as well as we can start doing health services research and look at population level dynamics of saying what are the people -- things we're seeing right now about 25% of our admitted patients do die and about 75% live which is pretty good because this is a very sick population we admit.

We are seeing at the moment we haven't had the racial demographic differences that other parts of the country have seen, but our people of color tend to be younger than the Caucasians we admit to the hospital. So it will be really interesting understanding what's driving our outcomes as we go along.

One thing we know as we move and start talking about potentially reopening up the country, one of the tools we need to have is syndromic surveillance that unless we have universal testing for everybody on demand, given the fact that we recognize there's asymptomatic transmission, we need to see what's going on in our communities. We look for cough, fever, and shortness of breath.

So if you actually just look at what we're seeing in our data -- our urgent

care and emergency room, you can see in February it's more common than previous years, blue it's the same. You can see in early February we're starting to see a few pockets where we're getting slightly more cases than in previous years. In March we were seeing a lot more cases than we did in previous years. But by the end of March it start going down again. And that was in Portland and LA. It's telling us the social distancing measures have been making a difference impacting the spread of the syndrome. And it will be helpful as we keep monitoring and opening things up slowly to see whether or not we have early signs of recurrence of outbreaks.

As we're looking forward, one of the key things we're doing is thinking about okay as we come down wave one, what do we need to be doing to get ready? One in acute care, what's that backlog of people who have put off not only issues like strokes and heart attacks but also things like cancer therapy or surgery to debulk a tumor that they really need done but were afraid to come in? So we're saying how do we get restarted, who and how do we retest people? How do we make sure patients feel safe from staff and vice versa.

Right now we're looking at the moment to resume some component of clinical care on May 1. And so working hard to get that done.

In addition, chronic care, we previously had around 60,000 visits a day in our ambulatory clinics, about a third of the number of visits previously. We're thinking in chronic care, what can we do differential, leverage virtual care visits to ensure we're meeting the demand. In population health we're talking to our insurance companies and payers to say we think there's been something positive coming out of COVID-19 in people are now adopting to virtual care. We don't want to go back to the fee for service treadmill. So how can we use this moment to get primary care capitation so ensure we're providing access to care with minimal burden to everybody across our populations?

We're thinking of this moment right now with COVID not only how do we manage a pandemic and crisis but using it as an opportunity to revamp the healthcare system.

Our learnings is we absolutely had to plan for the worst. It says expect for pandemics but expect for waves. That we really need to think about ensuring that what we were able to do very rapidly in this pandemic creates lasting benefits particularly when it comes to remote health and remote technology because we know our patients are loving that.

I didn't tell you but we're tracking our net promoter score of our telehealth score which is well into the 80's, better than Amazon or Nordstrom. It's been very well received.

We know one of the challenges advocate together is we are working hard to solve this public health crisis with a privatized health system. And then last or one of the key points is the environment's chaotic. I liked the leadership message that Dr. Reich shared. It's been essential for us. We've had a very regular clear cadence of huddles with emergency operations group in the morning, and regional and system huddles and walk-arounds by leaders. By having a cadence, it's been a reassurance, it's some flotsam to hold onto in this storm of chaos. As long as leaders can be steadfast in chaotic times, it's been incredibly helpful in for our psyche of caregivers and patients. Also being a consistent voice is not just telling but we're listening. So we're really focused on ensuring that we have very clear two-way communication.

Because we know the other big thing we know is after the heroic phase of

responding to a crisis is to expect a the pit of disillusion. We need to reason and be ready for it because people can't keep going in hero crisis mode for a prolonged period of time. So we need to be ready and helpful and navigate the letdown on the way. Happy to answer questions and help with anything we possibly can. Because this is clearly something that we're not just all in this together across the US. To be honest, we're in this across the globe and it's an all-in approach to beat COVID-19. We're all hoping we can do that together. Thank you.

>> Presenters, thank you for providing our audience with such useful information on this pandemic and sharing your personal experience and insights. We appreciate your time and value you sharing such helpful information and lessons learned in your hospitals in the COVID pandemic. We'll go into the Q&A section. Click on the bottom of the screen and type in your question. We're loose looking for best practices and lessons learned.

First question, there was mention of telemedicine -- we've seen quite a few questions -- and they would like to know can you talk a little bit more about telemedicine strategies already in place and how did each of the healthcare systems work to scale them up and what that involved?

>> Amy Compton-Phillips: At Providence, before COVID, we had both a express care virtual which was our on-demand urgent care kind of platform. And we were doing about 50 to 70 visits a day with it. And we also had a telehealth program supporting about 110 hospitals using telestroke, teleICU, telehospitalist, telebehavioral health. And we had that functional platform. It was expanding the uses of that platform that we did very rapidly. And we used several different technologies because the B to B, the supporting hospital takes a different technology than B to C supporting patients.

One thing we did was turn on in the middle of this 7,000 primary care physicians the capacity to do telehealth visits in one day. So our IS group was absolutely amazing. In primary care we're using Zoom as the platform. The hospitals are using In Touch devices as well as epic functionality. As the platform. But having the platform that existed helped to rapidly scale.

>> Dr. Reich?

>> David Reich: Thank you. I think I pulled up the appropriate email. We went from about 25 visits per month to about 2,500. Overnight -- we're a smaller health system. But the majority of that technology worked out to be Epic-related. We used Epic telephonic visits increased by two orders of magnitude. And also there were a dramatic number of people who declared themselves as COVID-19 new patient assessments as part of that. And we set up a skin of a telehealth program called Mount Sinai Now and that also went from four to nine visits to -- it absolutely exploded with the social distancing.

>> Thank you for your responses. Our next question is regarding deferring care for your non-COVID-19 patients, something brought up during the presentation. The question is have you had time so far to go back and quantify the number of people who deferred care for non-COVID-19 conditions. Are you seeing more conditions than you would normally expect?

>> David Reich: It's actually shocking how empty our emergency department is. This morning there were 25 people in the emergency department in Mount Sinai Hospital; the number is usually four times higher. For whatever reason, people are hiding at home with their chronic conditions afraid to come to hospitals. We mentioned the telehealth component. It's unknown what will help in the New York area once people feel comfortable to come out again. But we have not seen any major in the number of

stroke codes or [indiscernible] within the city.

And so it is very strange, we had about a 98% reduction in overall surgery at the peak of the crisis and we are still much earlier in the process than the west coast specifically the Providence System. It's too soon to say whether there will be that bounce in the green line Dr. Compton-Phillips showed. Every region will have its own pattern and we have yet to see the New York pattern.

>> Amy Compton-Phillips: It's been really interesting and I think it will be really helpful for the CDC to look back and say what happened to the rate of sudden death or the rate of stroke during the time of COVID? We are now seek anecdotes coming in because ours are down by half. And the anecdotes coming in from our ER's are, like, talking with an ER doc yesterday and he was telling me about a gentleman yesterday who had lost vision in one of his eyes three days earlier and didn't want to bother his daughter whom he was social distancing from. And when he told her she made him call 9-1-1. With a stroke at that point. It's challenging but we know the acute cases are down by a half. COVID does not cure cardiovascular disease.

>> Next question is mostly for you, Dr. Reich, can you talk about how Providence optimized PPE and can you talk about if you optimized ventilator use?

>> David Reich: To both. So with our first patient we had a [indiscernible] level PPE. So it was incredibly strict PPE on January 21. We rapidly went down to contact airborne precautions with eye protection, double gloving. That was requiring six changes of PPE per shift when our first patient was on the floor and 22 when he was in the ICU. We realized we had to start conserving. By the way, because we had that early patient started ordering early additional PPP. We did go down to contact droplet protection and aerosol generators.

Now, because our supply chain as we have actually been able to start reprocessing both surgical masks and respirators as well as getting in large shipments from abroad, we just now this week are starting to go back to the CDC recommendations that say go back to having respirators when the supply chain lows. We're just now starting to go back to respirators now because as the supply chain is opening up. It's the same thing Dr. Reich talked about because suppliers are different than we normally have used, the staff it's challenging for the staff. It's like well, why don't I have my usual gown? Supposedly the flimsy yellow thing is just as good but not what you're used to.

It's been frightening for the staff and taken a lot of communication. I'm still not positive with all the changes we have the trust of everyone that we're trying to do the right thing. But it is part of why we're trying to go back to respirators as soon as we can. If we can't keep our staff healthy and whole mentally and physically, we can't take care of patients. But, again, as I anticipate coming down into the post-heroic phase into the cranky phase I know PPE is part of that. We by the way never had to get to any of the innovative ventilator options we thought we had to do. We never had to split them or create modified ones. We did at one point had to get to using our OR anesthesia machines as ventilators but that was very brief.

>> Thank you so much for that. Our next question is or all our presenters asking about strategies that your facilities may have had to use to move patients to facilities that had [indiscernible] to alleviate burden.

>> To this day our transfer service which is headquartered at the corporate headquarters for the health system has literally saved hundreds of lives by moving patients into the field tents in Central Park. It's nothing short to of -- of

miraculous to see. Effective transfer within a region will save lives.
>> Amy Compton-Phillips: Yeah. I would agree. We never hit the point that we were totally overwhelmed as I mentioned. We started trying to cohort all of the -- particularly in downtown Seattle all positive patients into one facility and realized that was a no-go because every facility had more COVID patients. We are thinking of putting all the non-COVID patients into one facility for doing these urgent surgeries we feel we need to get scheduled sooner rather than later. So we're doing the opposite now as we think about how to get going with non-COVID care again.

>> Next question, can you speak a little bit to your healthcare workers that may have been exposed or ill with COVID-19? Did you implement worker exclusion or paid leave policies and can you talk about the CDC guidance of healthcare workers -- was it helpful?
>> David Reich: When -- we obviously are New York City where we have an advanced medical health department, mental health and CDC guidance. And so there was a slight change from the recommended guidelines. So we are bringing people back to work after 72 hours with resolved symptoms. I'm supposed to do air quotes. And at least 7 days since diagnosis, not ten. So it is a little bit different than CDC but I think frankly the speed of trying to maintain a workforce which is so incredibly stressed led to a slightly different interpretation by the state and city authorities.
>> Amy Compton-Phillips: Yeah. And so at Providence we did use the same, CDC guidance. So really, really appreciated having that. But it was a lot more than that. We had lots of HR policies that we added in just because it was such a chaotic time. So we continued pay where services were altered through April 30. We had, for example, ASC's and primary care offices and urgent care clinics that literally just stopped doing work but we continued the pay of those people even if we couldn't repurpose their work. We paid some people to sit home. We gave people 80 additional hours of paid time off because we knew it would be challenging, added short-term disability coverage for people who couldn't have it. We provided backup child care. With schools closed particularly with parents of kids would be impossible to come into work. So we contracted with an agency that provided drop in child care. And if the agency ran out of child care, we gave employees $100 a day to provide child care. And we set up hard ship loans through the credit union. Because we realized it wasn't just COVID exposure but a lot of life circumstances keeping people out of the office. So worked really closely with HR to ensure our people could come into work.

>> Thank you very much and I think we have time for one last question. So let's talk a little bit about lessons learned so far even though we're not at the end of this pandemic. Question is are there any new strategies or lessons learned you have implemented during this pandemic you would plan continuing using even after the crisis is fully over?
>> David Reich: Well, I certainly can take that one. I think that we learned how to bring together five pharmacy and therapeutic committees and academic leaders to establish something knew like the anticoagulation protocol in about two days. And we learned it was feasible and possible. So I think that is a message that we can take away is that our normal bureaucratic and academic arguing over the details about how many viruses fit on the head of a pin ended quickly and we ended quickly.

>> Amy Compton-Phillips: We learned that same takeaway and absolutely loved it. The

other thing is that listening to great, but decisions are critical. So we made sure that we could be clear and decisive. The other thing as I mentioned simply even if you don't know anything, communicating you don't know yet is really critical that leaders have to be present, visible, reliable and that nothing should stop your ability to be available when you say you're going to be available. Because the front line staff living in the chaotic world need something to hold onto and I think our job is to be that rock. And I hope we can continue that on an ongoing basis.

>> This is Nancy. I respect what my colleagues have just said. I have very different learnings from my perspective. I have been amazed at the number of novel organizations not traditionally part of healthcare who stepped forward to help us through this crisis, being able to put up a red flag that says we're in trouble, we need help doing X -- whatever X is has brought forward people from the community, businesses big and small and a variety of others. I think that is a lesson we need to take to heart going forward.

And then as someone who's worked in Washington for a very long time now, I have to tell you, I've also learned federal agencies can move incredibly swiftly when there is need for that -- CDC, CMS, the FDA. They have pushed regulation out of the way so healthcare organizations can deal with this crisis at a pace I didn't even imagine possible. And thank you all for that.

>> Thank you very much for that. On behalf of COCA I would like to thank everyone for joining us with a special thank you to our presenters. And Dr. Rob Redfield. A closed caption video and transcript will be available shortly after this web call. A video recording of the call will be available immediately after this call on Facebook. Please continue to visit emergency.CDC.gov/COCA over the next several days as we intend to host COCA calls to keep you updated on COVID-19. Announcements will also be sent via email. To receive information on upcoming COCA products or other COCA services, visit the web major emergency.CDC.gov/COCA. Be to like us on Facebook. And thank you again for joining today's call. Have a great day.