

THE CITY OF NEW YORK
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TRANSCRIPT: MAYOR DE BLASIO HOLDS MEDIA AVAILABILITY

Mayor Bill de Blasio: Well, good morning, everybody. We've got some important things to talk to you about today. And really what it comes to is understanding New York City, understanding who we are, understanding how we confront the challenges we face in normal times, but even more so in a time of crisis. There's something about the city that when the going gets tough, just the best comes out in people. And, you know, I've said before, but it bears saying again, this is a city where people make things happen. Folks don't shirk from a challenge, they meet it, and then they go farther than they ever thought they could. And it is part of who we are. It's in our blood as New Yorkers, there's a reason we are known as this great capital of entrepreneurship and creativity and ingenuity. It's been proven time and time again over generations and it's certainly been proven in the middle of this crisis. I've seen amazing things, and no one for a moment can underestimate how much pain there has been, how much loss there has been, but that has not stopped New Yorkers from doing things big and small to make a difference and to fight back and to prove that nothing and no one and no disease will ever stop us. New Yorkers, by our nature, we're resilient, we're tough, and we know how to take care of ourselves. Well, now, I think it's a time in our history where we're learning an important lesson about how self-sufficient we're going to have to be, going forward. We have watched in these last few weeks when we called for our federal government to help us, sometimes we got an answer, sometimes we didn't. When we went out on the open market, internationally even, trying to find the things we needed to protect our people – sometimes they were there, a lot of times they weren't. So, what we're seeing right now are the profound limits – limits to a globalized world. We were all told how many things would come from globalization that, in theory, are going to help us. We're starting to see the things that don't help us at all, in fact, have made our lives tougher, because so many of the things we need, the medical equipment, the medical supplies aren't even made here, not only in New York but in the United States anymore, and that's left us vulnerable. And we New Yorkers are learning that lesson and we're not going to be fooled again. We're going to be ready. We know we have to protect ourselves and we know we have to be ready for whatever comes next.

Now, I've got to tell you, even though it feels like this has been going on for months and months, it's only been six or seven weeks we've been in the thick of this, and what's happened in those six or seven weeks is absolutely remarkable. New Yorkers, creating products we didn't make here at all. New Yorkers, coming together to do things to protect our heroes, our health care workers, our first responders out of love, out of a deep, deep concern for those who protect all of us. And that compassion didn't just come out in words, it came out in deeds. So, we have seen amazing progress in just a few weeks, and I've taken you to some of those places to see the face shields being made in the Brooklyn Navy yard. I showed you the surgical gowns also being made in the Brooklyn Navy Yard, but now more and more parts of the city are coming into the game to help

out, more and more companies are doing remarkable things. I talked to you a few days ago about the fact that when we found, despite every attempt, we found we couldn't get the test kits we needed from the federal government. We couldn't purchase them anywhere in the quantities we needed. We said we're going to make them right here, and you're going to be seeing the results of that in just days. So, it has been a remarkable journey against a very painful backdrop. But now, today, I want to tell you about another important step and it has a lot to say with how we will protect ourselves now, but it also says a lot about how we will protect ourselves in the future. And today I want to talk to you about ventilators. You see one here and we're going to get a little demonstration in a moment, but as you can see immediately this is not a simple piece of machinery. This is something complex. This is something challenging to make. Nothing like this was being made in New York City just two months ago, even one month ago. Nothing like this was being produced here, but extraordinary entrepreneurs came together for the good of all New Yorkers and said, we can do it, we can do something. Whether it seems possible or not, we're going to find a way.

So, I want to take you back just to remind you, just a few short weeks ago – and I use that specific day, Sunday, April 5th was the day where we felt based on every projection, based on all the evidence that we were going to be at a point where we might run out of ventilators. The number of people who needed them was growing every day and it was a very fearful time. Supplies were running short. We needed answers. At that moment, it looked like we could get to a point where there might not be that ventilator needed for the next patient. Thank God, right around then was when things started to improve and it's all because of everything you have done, all of you, the social distancing, the shelter in place, all of the things that are making a difference. So, today, we can say that, thank God, we have the ventilators get through this week. We have the ventilators for the immediate future. But as recently as the first days of April, the numbers were staggering. Approximately 220 more New Yorkers each day – more each day needed a ventilator. That's what it looked like at the beginning of April and that's when this valiant effort was going full bore to make sure that ventilators would be available and would be ready if they needed to be pressed into emergency service, these homegrown ventilators. And this is the epitome of that kind of wartime production model, people coming up with an idea and making it happen. Because if it hadn't been for these ventilators being ready, we might've been in a situation where there would not have been one for someone. By April 10th, we were still seeing an increase in the number of people needed them each day, 75 day, but it was slowing, thank God. Now, today, it's actually leveled off and we hope to see a situation where it really declines consistently the need each day. But having gone through that terrifying moment, I can tell you, I am determined to make sure that New York City never ever is in a situation in the future where we need ventilators and we can't get them. We have to protect our people. And so, these bridge ventilators that have been created are part of what will protect us now and into the future. This is something we now have that can never be taken away from us. This is something we make here that no one else in the world can deprive us of. We are now increasingly self-sufficient. We've got a long way to go, but this is a remarkable achievement. You're going to hear from some of the people who made it happen. I want to tell you, these ventilators, right now, ready to go being moved into hospitals so they will all have a reserve that need them. FDA approved – and I want to thank the FDA. I want to take a moment. I always try and give credit where credit is due. Dr. Steven Hahn and his remarkable team at the FDA. I spoke to him several times, I know Dr. Mitch Katz did as well from Health + Hospitals. They moved this process in record time and I

will really want to give them credit. FDA is not historically known for speed, but they have in this crisis really stepped up and they were tremendous partners in getting this ventilator approved and ready.

Now, this story, again, it is about making something out of nothing, and that is a New York tradition, doing remarkable things against the odds. And there's three guys who deserve particular credit – Scott Cohen of New Lab; Marcel Botha of 10XBeta; and Charles Boyce, of Boyce Technologies. These individuals had a remarkable civic spirit, a remarkable desire to get something done. And I want to give special credit to Charles, because he also was one of the driving forces behind making those face shields that, right now, when you see them out there in our communities – in fact, just yesterday I was in Staten Island, deliveries of PPEs were being made to RUMC, to the in Staten Island, and there were those Brooklyn Navy Yard face shields being delivered. And that made me very, very proud to be there with those delivery workers, seeing the response from all the health care workers to that help coming. So, a special thanks to Charles for being a part of both these efforts. So, when we think of this city, we think about chutzpah, when we think about the incredible verve, the drive, the ability to do something no matter how brash or unlikely. So, literally, people who are part of this effort at to say to themselves, hey, we've never made a ventilator before, we're going to have to figure out how to do it, and then we're going to have to figure out how to produce thousands of them. You know, if you talked about a normal timeline to try and create a brand-new product like this, you'd think it would take a year. You know what they said? They said we have to do it in a month or less. And they went and did it. So, they put together a team, an extraordinary New York City team of scientists, engineers, entrepreneurs, physicians folks who knew the regulatory system, all sorts of folks who work together, nonstop work, literally alone, round the clock, 24-hour efforts over the past three weeks and they got it done.

So, what are these bridge ventilators do? Well, what they mean is, when someone needs that urgent help, that ability to breath without which they simply won't survive, these bridge ventilators are there to keep someone alive. They can play different kinds of roles. They can buy time to keep a patient alive who might need a more elaborate kind of help from a full-service ventilator. They can help to stretch out the capacity of a hospital so that as they're getting more of those full-service ventilators available at any given moment, they buy time to save lives. They also work with a number of different kinds of cases where there are less severe issues, but that people need that help breathing. So, there's many things they do. To make this possible, to save lives, to make sure we could be self-sufficient, we, the City of New York made the decision to work with these companies, to help coordinate their efforts, to work with the FDA on the approval, but also to make clear that we would fund the effort. And so, we placed an order for 3,000 of these ventilators – a \$10 million order. And that raises of crucial point, that what these extraordinary New Yorkers did was not only create a great product and a necessary product, but a product that was affordable – \$3,000 for each ventilator and that compares to \$40,000 or \$50,000 or more for a full-service ventilator. This means that we have already reserve in the event that this crisis continues, or, God forbid, this disease becomes stronger. It means we're in a position to protect ourselves and to help others who may need our help.

But it also is now the beginning of something much bigger that will help frame our future. Today, I'm announcing that we're going to create a New York City strategic reserve. We have

learned the hard way that we cannot depend on the federal government in the future. I hate saying that, but I think it's quite evident. We certainly cannot depend on the global market. We can't depend on our nation to produce products that, tragically, are not being produced enough in this nation as we've seen in our hour of need. I hope that will change. I hope our country gets the message that we have to start producing these things all over the country again and be self-sufficient as a nation. But until that day comes, New York City, we will protect ourselves. With the leadership of the Economic Development Corporation and working with our health care leadership, we will create our own reserve. We will take the production that's now been created in those four areas, the facials, the surgical gowns, the test kits, and now the ventilators. We're going to create a ready supply of those so we'll always have enough in the future and we'll purchase what we need and create a stockpile so we will never be in a situation where we turn to those who are supposed to supply this and they say, sorry, we're all out. We, New Yorkers, will take care of ourselves. Now, I have to say this all was created from scratch. And I remember the day I first went to the Brooklyn Navy Yard and I saw those face shields being made by hand. There's no machinery. It was all by hand. It reminded me that people would do whatever it took. We've seen it now for whole different kinds of products being produced in large quantities, protecting our health care workers, saving lives. This is our future to be able to take care of ourselves. And now, that we figured out we can do these things, whatever we need in the future, we can use as a blueprint to build more and different supplies and equipment, whatever the occasion may be, whatever the challenge may be.

I also want you to know that in the process of these good people figuring out how to create this ventilator, they found out that there was a lot of interest in this ventilator from hospital systems and absolutely in other parts of the world as well. So, in fact, there will be a market for hospitals and for parts of America and other countries that need lower cost ventilators. This has started to open up a new possibility of getting people help who aren't getting it right now because the cost is so prohibitive. And any of our fellow cities and states that need help, our reserve will be there to help them, just the way they've helped us. So, we've been so appreciative to other states, other cities that have stepped up to help New York City. Any of them that need our help in this crisis, we will be there for them, because we will have a reserve that's available and that we can depend on.

You're going to hear a little more in a moment about these ventilators, but let me give you a couple of other updates first, because we know – and this is part of why we want these reserves – we know we're not out of the woods by any stretch of imagination. We've got a lot more to do. And we also know that the impact of this disease is being felt right now. Still, too many people dying, too many people going into the hospital right now, too many people going into the ICU right now because of COVID-19. This fight is raging, and it's raging, especially in the parts of the city that have been hardest hit, that have unfortunately had the worst disparities, the biggest burdens, the least health care available historically – and that means our communities of color and our immigrant communities, our lower income communities. We need to fight back and we've got to do that in a lot of ways. We've talked about all the community outreach we're going to do, the telehealth programs, everything we're going to do to reach people, but, obviously, it also will take more and more testing at the grassroots level.

Yesterday – we, as of yesterday, had five community-based sites open in some of our hardest hit neighborhoods. Those sites will be performing 3,600 tests this week. So they're all up and running. I'll go over them in a second, but they will do 3,600 tests this week. Next week, we'll add five more sites in hard hit areas and we will get that total up to over 7,000 tests per week and we're going to keep growing from there. If we can get the supply of testing we need, plus the PPEs and the personnel, we're going to keep going farther and farther with the grassroots testing where it's needed most. The five centers are now open in Brooklyn, and they're all Health + Hospitals, I should say – the Gotham Health Center in East New York; in the Bronx, the Gotham Health Center in Morrisania; in Staten Island, the Vanderbilt Health Center in Manhattan, the Sydenham Family Health Center in Harlem; in Queens, at Queens Hospital, the testing center there. All of these are walk-in sites. So, I want to emphasize, anyone from the community – and these are targeted to the immediate community – you can walk up. We are prioritizing people who are 65 years old or older and who have those preexisting conditions that we've talked about so much, those serious conditions that put people in danger. So, please, if you meet those criteria, if you are someone who is in, particularly – in a particularly vulnerable situation, we want to get you tested. Go to one of those centers, walk up. That testing is starting – is started, I should say – has started, is available today, and then more will be announced next week.

And now, I want to talk about what we do every day, looking at the indicators that tell us where we are. And I keep telling people, it's going to be a long battle. We want to see them all move in the right direction, it's not always going to work that way, but it doesn't change anything about how we approach this. We keep fighting, we keep sticking to what's working, and we will see progress. And overall, we have – even though these indicators have not been everything we wanted to be, we definitely see some real movement, and that's really good news. So, first, the daily number of people admitted to hospitals for suspected COVID-19, well, that went down from 212 to 2-4 – that's good news. The number of people in ICU is across our Health + Hospitals facilities for suspected COVID-19, that went up, but by very little, from 853 to 857. The percentage of people who tested positive for COVID-19 also went up, but, again, by very little, from 34 percent to 35 percent. The number of people who tested positive through our public health lab test went down from 67 percent to 63 percent. So, again, you see some progress when some of the areas going up, they're only going up by a little. Overall, we are seeing definite progress. Not everything that we're looking for to get to the point where we can relax some of the restrictions but definite progress for sure. So, keep doing what you're doing, New Yorkers, it is working. Just let's keep with it, it'll take some time, but we can do it.

Now, I always want to offer my thanks to anyone and everyone who stands up from New York City. And, today, we're talking about great stories of New Yorkers doing things for their fellow New Yorkers, but also a lot of the time people have come to our aid so we could help ourselves. And I talked to you about surgical gowns yesterday – this is our toughest situation right now with PPEs and it got to the point where we couldn't get – it was just quite clear that the global market isn't functioning right no matter what you try, you can't get the kind of supply that we need. But we said, okay, if we can't get the gowns ready-made, can we get the fabric? I mentioned yesterday, we worked with the White House, particularly with Peter Navarro and his team who have been fantastic, and they put us in touch with leaders in the textile and garment industry who have been really helpful. A special thank you to Kim Glass, who's one of the leaders in the industry who has been giving us great help. They connected us to a health care

supply company, Owens & Minor in North Carolina, and they went to bat for us. A special thank you to Chris Lowery and everyone at Owens & Minor. I was on the phone with them several times. They have already delivered – in a matter of days, they produced and delivered to New York City, 1 million square yards of American-made fabric. And I want to emphasize what a refreshing reality this is, that we're not searching for something in another country that may or may not let us have it. This is American-made fabric, waterproof fabric that we can turn into surgical gowns. So, 1 million square yards already here that will create enough for 400,000 more surgical gowns. And I have an update on the day by which they will be produced – they will all be ready and done by May 10th. And that production is going to be expanding constantly as we create more and more of these gowns in New York City. Special thank you to folks at UPS, Laura Lane and everybody at UPS, they jumped in immediately to make sure that the delivery from North Carolina – 570 miles away – and it happened a second, that the fabric came off the assembly line. It came to New York City in record time. So, incredible team effort to help us help ourselves. And we're very, very appreciative.

I want to say one more thing before I close. We gathered today and, you know, normally if our society was functioning as normal, there would be a very solemn remembrances today because it's Holocaust Remembrance Day. There'd be solemn ceremonies, moments to reflect, and not just for the Jewish community and our Jewish brothers and sisters, but for everyone to learn the lessons of the Holocaust, to think about what it means and to always gain strength from the incredible examples of people who fought their way through. You know, one of the most painful realities of these last weeks is some of the people we lost to the coronavirus were Holocaust survivors. Think about that. They lived through one of the greatest atrocities in human history and then succumb to the coronavirus. We have to learn a lesson from all of them, even those we've lost and certainly from those who still survive. And I have met so many of them, particularly in Brooklyn, in areas I used to represent in the City Council, where I constantly would meet people who would tell me their stories of fighting through and surviving the Holocaust. And it was extraordinarily inspirational. We've got to realize that there are people right now in our city who stared down unspeakable evil, who dealt with unthinkable pain and terror and overcame it and fought through it and decided that they would not only survive, but they would create a new life with new families, new hope, they would sustain their people, their beliefs, their faith, and they did it. And some of those stories, when you're talking to some of these individuals, you are humbled. I am humbled, I know it, because it reminds you of the greatness that's possible in each of us and what those who have gone before have done, and it inspires us. So, we need to endure right now. We need to overcome and we need to learn from all of those who went before, but particularly those extraordinary, noble Holocaust survivors. They're teaching us a lesson right now that we should take to heart in this moment.

Lastly, you know, the last days I've made it a point to be very straightforward, very honest with all New Yorkers, with all of you, about what we face, the fact we have a long battle, the things we can do and the things that we can't yet do. You know, it was no fun to have to tell you that May events had to be canceled and then June events had to be canceled, including some of the events we love the most each year, we cherish, we look forward to. It's no fun to tell you, you have to keep social distancing and staying home, but it's the right thing to do and you're doing it, again, with extraordinary ability. We had to say that those things couldn't happen, those parades, those concerts, those street fairs, we had to. I had to say it just isn't time for them yet, there's still

too many unknowns, there's still too many threats. There's a lot we don't know, but there's one thing we do know for sure – the day is coming when this city will fight our way back, when this city will get back to normal. The day is coming when we will overcome this disease. The day is coming when I'm going to be able to tell you we can gather again. The day is coming when I'll be able to tell you, in fact, we will be having the concerts and the street fairs and the parades again.

But I want to guarantee you one thing, that when that day comes that we can restart the vibrant, beautiful life of this city again, the first thing we will do is we will have a ticker tape parade down the Canyon of Heroes for our health care workers and our first responders. We will honor those who saved us. The first thing we will do before we think about anything else is we will take a time, as only New York City can do, to throw the biggest, best parade to honor these heroes. And many, many great heroes have gone down that canyon to be appreciated and loved by millions of New Yorkers, but I think this will be the greatest of all the parades because this one will speak to the rebirth of New York City. This one will speak to a kind of heroism that is intrinsic to who we are as New Yorkers, to our values, to our compassion, to our strength, our resiliency. This parade will remark – well, mark, I should say – this parade will mark the beginning of our renaissance, but it will also be, most importantly, a chance to say thank you to so many good and noble people, so many tough, strong people. They're fighting right now, and they have to keep fighting and we have to keep supporting them and showing them our love and appreciation. But one day, we will be able to start back on the road and we will honor them as they deserve, and that will be a beautiful and joyous day in the city.

Everyone, I want to just say a few words in Spanish, and then I'm going to turn to one of our heroes of this great ventilator efforts, Scott Cohen, and he's going to talk about how this amazing effort came together.

[Mayor de Blasio speaks in Spanish]

With that, in the spirit of doing for ourselves and protecting ourselves, a man who had tremendous vision. And I just want to say, what an amazing thing to look at what's happening around the world and say, wow, we need ventilators, how about we create our own? What an amazing spirit, how much creativity he and his colleagues had. But that will to get it done and that tirelessness, not waiting for one hour and not resting for one hour until the job got done. So, my great pleasure to introduce the cofounder of New Lab and the Lead for the Emergency Ventilator Response Initiative, Scott Cohen.

Scott Cohen: Thank you. Thank you, Mayor. Appreciate that.

Mayor: Thank you, Scott.

Cohen: Yeah – sort of a few words about the journey we've been on.

Mayor: Please.

Cohen: Well, I just really wanted to say that we really wouldn't be here today without the partnership with the City. Really early on when Marcel – and Charles Boyce, from Boyce

Technologies and Marcel [inaudible] on the end here from 10XBeta who's been a founding member of New Labs since the very beginning, we all started talking about the resources we had around us and the engineers and roboticists and inventors that were around New Lab, the engineers and experts over at Boyce Technologies, and we all started talking very early on at the impetus that was actually another New Lab member who was watching what was going on in Italy – was Italian and asked us could we help Italy? And we really started thinking about it, and we weren't sure – both Marcel and I were quite skeptical whether we could do something like this. But then when it started coming to New York, we were like, well, we have to, we have to lean into it. And so, the three of us came together and very early on we reached out to James Patchett at the EDC. We let him know what we were thinking about and that we really needed to know there was some sort of partnership with the City, because this was a very risky and fluid endeavor. I don't think we ever knew at any given instance, whether we were going to get this done in the timeframe that we set out to, but we all navigated through it. And I mean, there were – there were really, I'd say, hundreds of people involved in this effort. There were engineers from New Lab and from Boyce. There were engineers that reached out from other communities in Silicon Valley. There were engineers from MIT up in Boston, that were shuttling down to New York to help us work on the software for the device. And so, I do think this is about the agility of New Yorkers, but it's also about the inventiveness and commitment of Americans coming together and the type of training that's happening in our engineering schools around this country that, I think, is really paying off for us. So, I'm grateful for the City and grateful that we had the benefit of having the City invest in New Lab years and years ago. And I don't think any of us knew where we'd be today, but it's an asset.

Mayor: And I just want to ask, I know our colleagues in the media will ask questions in a second, but to all of you, there is an audacity to saying we're going to make something we never made before, not even close to making before, and to do it on this timeline. And you said at first there was doubt, understandably. What helped you overcome the doubt?

Cohen: I just think we all really felt this was something that had to be done. And I think there were different moments. I mean, one moment was when we had something that looked like it was working and all the critical care physicians came down with folks from the EDC to look at where we were and give us kind of some input. And they sat with Marcel and all the engineers and gave feedback and just seeing what they were going through and seeing how this was a glimmer of light for them, gave us a real charge, gave all the engineers a real good boost when they were exhausted to push on. And I also think that, you know, that's, that's what engineers do all the time. That's what everyone, that's what Marcel's group at 10XBeta does. We walk up to his studio all the time with a napkin sketch and say, you think we can build this thing?

And that's not something – that's not a new thing at New Lab. That's something we do every day. So, I think we all felt this was possible. I also really appreciate the fact that in 2010, a group of engineers led by Dr. Slocum at MIT, were thinking about building a low-cost ventilator that could address this kind of problem in the developing world. And I don't think they realized that it could have such a service to New Yorkers and to this country at the time. But when we were searching around the internet for like, what would be something that could be responsive, we found what they were, they'd worked on 2010 and a close friend of ours, Saul Griffith on the west coast weighed in with us and said, yeah, I think that's the one. We all kind of triangulated

on that device, and then we reached out to the folks in MIT and I think they had started mobilizing three or four days before and then it became a round robin of sharing and kind of cooperative competition between lots of engineers and so they were really amazing and I think whenever we hit roadblocks, we'd call other folks at MIT. When they did roadblocks, they called us. We built some hardware devices for them that they brought back up there. So it was a lot of real kind of competitive cooperation between a lot of really smart people.

Mayor: Yeah, I love that. And it reminds me of things we've seen in different movies of folks racing against time to come up with some solution. But this is real life, this happened here and now and the fact that you are so inspired when you heard from the health care professionals what they were trying to do and the people they were trying to save and that moved you to even higher levels of inspiration and action. I mean, that's very, very powerful. And I just have to thank you so deeply for sticking with it no matter what. And I want to see Marcel or James, if you want to add, you're more than welcome. We appreciate it so much.

Marcel Botha: Yeah, thank you. Yeah, I think all of us we're sort of, I think intimidated by the complexity of a full scale of ventilator six weeks ago and then four weeks ago we realized that, listen, put that aside, find a solution. And I think that the beauty of this bridge ventilator is that it replaces a hand that's squeezing an Ambu bag or wearing a resuscitator bag, that's an existing process in the clinical care stack. And what we learned in the last four weeks is that the hand is a very complex neuro- skeletal muscular system trained by a brain. So we tried to replace all of that, not just the mechanical function. And that's why this stands head and shoulders above most other bridge devices out there.

Mayor: Well done. Well done. James. You want to add?

President and CEO James Patchett, NYC Economic Development Corporation: I would say it was a – Scott described it well. It was a process where there were a lot of days of doubt. There were moments where, you know, I would call Mitch – Dr. Katz at the Health + Hospitals and say, how soon do we need these? Do we need these tomorrow? Do – and he said, I have five more days. You have five more days. And then I would call Scott and say, okay, we have five more days to perfect this device. And it was a day in, day out thing and fortunately the day never came where Mitch said we need these tomorrow. But it was a constant process where they were working to make the device better and better to be more functional every day while we were watching the clock. And that was, and there were times I think when all of us felt like this would never come together and it just an inspiration now to see this device here working, to have seen it at hospitals already with doctors and clinical care settings. So it's a tremendous inspiration to see these folks and the team at EDC, frankly, it's, you know, a team of over 20 people who a month ago didn't know what a peep valve was and today can tell you all about the different components that are necessary to construct a device. And we're just an honor to be a part of this team. And I think it's an inspiration and just as you said, an example of what it's possible for New Yorkers to do when they believe in something. We have an amazing creativity in this city and it's amazing to watch.

Mayor: Thank you and well done, James, you and your whole team at EDC and all our colleagues who did this amazing work and please thank your teams and all those folks who spent

all those long hours and everyone they consulted with. It was an extraordinary group effort. So the fact is to the point James made that I was on a number of those calls with Dr. Katz too, and it really was coming down to a matter of days and we even thought at one point it would come down to a matter of hours, whether the next ventilator would be ready. This ventilator had it been needed on an emergency basis, would have gone into action during the week of April 6th because it would have been literally a matter of without it lives would have been lost. So this effort succeeded on that kind of wartime footing. They were ready at the moment where there would have been no other choice. This machine would have been ready. And that's an amazing testament to the work that folks did, but also, thank God it did not come to that moment. But I remind everyone, again, not out of the woods by any stretch and we're dealing with, I always say a ferocious enemy in this disease. So it is something that gives me a little relief on behalf of all New Yorkers to know we will now have that reserve in place to protect us no matter what is thrown at us. With that, let's turn to our colleagues in the media and please let me know the name and the outlet of each reporter.

Moderator: Hi all. Just a reminder that we have James Patchett, President and CEO of the EDC, Scott Cohen, co-founder of the New Lab, and Marcel Botha, CEO of 10XBeta here in person, and we also have Dr. Katz, President and CEO of Health + Hospitals on the phone. So, with that, I will start with Matt Chayes from Newsday.

Question: Good morning, Mr. Mayor. I'm wondering, what have you told the NYPD to do to address the increased rate of speeding motorists? What benchmarks have you established and are you satisfied that those benchmarks are being met?

Mayor: Yeah, Matt, it's a good question because obviously, look, I want to start at the beginning of this to all my fellow New Yorkers. Look, I know there's a lot fewer cars on the road. I understand the temptation people have. They think, oh, there's, you know, no one here, I can go faster. It's dangerous. You have got to recognize in the middle of this crisis, this coronavirus crisis, we cannot afford another crisis, which is people speeding, getting into crashes, harming other people, harming themselves or lives being lost. And we've already seen some of that. We cannot have that happen. So, the first point is slow down, it doesn't matter if there's not a lot of cars on the road. You've got to protect yourself and others. The second point is the NYPD has been instructed to crack down, as is always the case and the NYPD has been, I think over the last six years with Vision Zero extraordinary in their devotion to the concepts of Vision Zero. We still need a lot of enforcement. Now let's face it, the NYPD now has multiple tasks they're trying to undertake simultaneously. And I do want to express not only my appreciation, but my understanding - the NYPD is short-staffed because of the number of officers who are out sick, has to deal with everything that normally deals with in fighting crime and helping people. On top of that, we have the new reality of having to enforce social distancing rules and shelter in place on a vast scale. That's a lot to do. So, we're not always going to be able to do everything to the level we perfectly want because there's just limited numbers of officers. But definitely have said to the Commissioner, we need aggressive enforcement related to speeding. We cannot ignore the problem. We got to be present, we got to let people know there will be consequences and that will continue and we'll do everything we can and as more and more officers come back, well we'll be able to expand that further.

Moderator: Next, we have Erin from Politico.

Question: Hi Mr. Mayor. I have a follow-up about the ventilators, then I have a separate question. On the ventilators, how many are going to be in the strategic reserve and is it all bridge ventilators that are going to be in the reserve? Are you going to put full-service ventilators in there as well?

Mayor: So, we're going to put a lot of different things in the reserve over time and I'll – in the coming weeks I'll detail what we intend to have and how we're going to go about it. But this purchase of 3000 of the bridge ventilators, that guarantees us a lot of strength going forward if we ever deal with, again a rebound, God-forbid, a rebound of this disease in the here and now or next year, but also for the future protects us against many other challenges. We definitely want to make sure we have enough full-service ventilators as well going forward. And the other items, I mean, we've all seen things like the N95 masks that have been absolutely crucial. So I think it's going to be a combination of what can we produce here so that we know, and this would be, Erin my preference, what we can produce here that we know we can not only have a reserve amount but a reserve capacity to create a lot more on short notice. And then some things I'm certain that we will have to purchase in quantity to fill our reserve. But my perfect model, the thing I want to drive toward is a physical reserve of equipment and supplies and even more so the ability to produce here at a large level.

Question: Then my other question was—

Mayor: Erin, can you hear me? I want to make sure just everyone just for consistency, just get your questions – normally in our regular press conferences where there's a different format, I tell people split it up. I just want to always say to folks, basically we're letting people do two questions up front. Just get them both up front. It'll just make the process easier the way we're doing things now.

Question: Yeah. Sorry, I think I got muted. Anyway, is there anything the city can do to help municipal workers who are struggling to get death certificates that they need to claim the benefits they're entitled to? I'm the head of two major union said this has become a major obstacle for those who have passed away.

Mayor: Yeah. We got to get – we have to resolve that. I don't want to see anyone waiting who doesn't need to wait and you know, unless there's a very specific reason causing the delay or whatever – we've said this to Medical Examiner, we said this to Health Department, whatever they need in the way of personnel or support – this is such a painful moment for so many families, including our public servants. We don't want people delayed. There's some things we're all dealing with here that are beyond anyone's reach because of the nature of this crisis. But anything that we can fix, anything we can do to lighten the burden we need to. So on something like that, I want to see that sped up and we will make sure that happens. And that anything those agencies need to do, we will make sure they have the personnel to get it done.

Moderator: Next we have [inaudible] from Hamodia.

Question: Hi Mr. Mayor. While the state has banned visitors – in most cases banned visitors from hospitals because they don't want overcrowding, there've been reports of from hospitals across the city of neglect and patients not getting lung suction properly, being found with empty oxygen tanks, taking hours and hours to get food or water. Again, some of these are confirmed, some aren't because no one's allowed in to the hospitals. Would the city consider what some people are asking for is allowing in some sort of outside monitors where not on hospitals' payrolls to ensure that there is proper care.

Mayor: I appreciate this question a lot because we understand, and I think what I'm hearing as the core of your question is that, you know, as good as our hospitals are and our health care workers are, they're also incredibly busy and stressed right now dealing with so much. And it is always helpful for a family to be able to advocate for their loved ones or anybody who's a loved one in their life being able to advocate for them and understand that that's been thrown off by this dynamic. Let me speak to what we can do to work on that, but I first want Dr. Katz to jump in and talk about how at our public hospitals, how you are addressing that challenge, understanding that we're trying to save lives every single hour of every single day and that comes first. But I know Mitch, you are very sensitive to the realities of the people in someone's life who matter to them and the important role they play in helping and protecting someone. How are you balancing that at Health + Hospitals?

President Katz: Sir, it's such a difficult question. In regular times I advise people never go to the hospital without having a family member with you. All right. Just to think that things are complicated at hospitals and you should always have someone to advocate for you, especially when you're sick. But these are such extraordinary times. The major reason that we haven't been allowing visitors, and it's not just us, it's all of the hospitals, isn't crowds. It's that we're trying to prevent transmission of the disease. We want people to shelter in place. We don't want them to be in a hospital where there are a lot of people who have COVID and could transmit COVID to them. We don't want to use extra protective equipment because we have to maintain enough protective equipment for our health care workers. And we don't want to introduce other people who themselves could be COVID-positive to the hospital. So it has been an extremely, extremely difficult, we have been trying as much as possible. We have volunteers with iPads who are connecting people to their families which I think is a beautiful thing. But it's been very challenging to weigh the risks of creating more infection in New York by allowing more people into a very high COVID place and trying to also be thoughtful about people's families.

Mayor: So, thank you very, very much, Mitch. That that really paints the picture on the challenge very powerfully. I think to the question of having some kind of monitors in hospitals, I think what I'd say right now is we better make sure, and this is something we will work on with all the hospitals, that family members who are trying to get information, who are trying to advocate, even if they can't be there in person, that there's a way to do that the right way and to support them and to hear them. While again recognizing what Mitch just said, that, that, that is not the same thing as allowing people to have the access they used to have because we have to protect everybody. But I don't want us to miss that that advocacy still has a place. So, we will work together with the hospitals to figure out how we can do that for this circumstance in a better, clearer way. And I'll come back with an update on that.

Moderator: Next, we have Alex from Chalkbeat.

Question: Hi, Mr. Mayor. How are you?

Mayor: Hey Alex, how you doing?

Question: Good. I wanted to ask a question about school grading policies. Some other large school districts have moved to kind of no harm policies, acknowledging that students are going to have kind of like differential access to online learning. And I'm wondering why that hasn't happened in New York City or if that's something that you're considering?

Mayor: Yeah, Alex, it's a great question. We are considering a lot of things because we're in the great unknown and you know, at the time we closed the schools it was quite clear there were so many questions to answer, and that every school system in the country dealing with this has had the challenge, but we're having it in a way that's beyond any other school systems just because of the size and the complexity, the diversity. So we've got to figure it out. The thing we're particularly focused on is helping our seniors who can graduate to graduate and go on to what's next in their life. And that's been a singular focus, obviously with every week trying to strengthen the online learning. But we got to figure out within that what we're doing about grading. There's, you know, some time, obviously, to figure that out before the end of the school year, but not a lot of time.

So that's something that the Chancellor I know is trying to determine with his team. We'll come back and say more on that soon. I think the – I appreciate that point you make about the sort of no harm approach and we're certainly looking at that. I think right now the first focus again is to help the seniors who can graduate, maximize the online learning, and getting those devices in the hands of kids who don't have them yet in the next few days and getting more of a rhythm going with the online learning. And then we'll definitely make sense of the grading issue and talk about it publicly.

Moderator: Next, we have Shant from the Daily News.

Question: Yeah. Thank you, Mayor. The fact the city is resorting to creating its own stockpile feels like a sort of combination of the federal response to the outbreak since it's the feds who are supposed to maintain or both robust national stockpile in the first place. I was wondering if you can put the city's strategic stockpile in the context of the nationwide pictures on supplies and do you think other cities should emulate what New York City is doing?

Mayor: Yeah, Shant, it is a very, you said a mouthful there. It is a very sobering telling moment when I have to say here before you and say the New York City needs its own strategic reserve because we can't depend on the federal government at this point. It's sobering as all hell. I mean it's just not something I'm happy to tell you, but it is really, really clear. This is a city that, you know, really led this nation over generations in building up the concept of a federal government that would be there to protect all Americans and obviously no one did it more than New York's own Franklin Delano Roosevelt. But that idea has atrophied in so many ways. And now we have a New Yorker in the White House who unfortunately is putting an exclamation point on the idea

that the federal government is no longer reliable when it comes to protecting everyday Americans and no place is bearing the brunt of that neglect more than New York City. It's just unacceptable.

So I, you know, the reality, the famous phrase, you know, fool me once, shame on you, fool me twice, shame on me. I mean we've, we've now gotten the point – you know, since January 24th, we've been asking for a sufficient supply of testing that we haven't had one day where we had it. What else did we have to know to understand that going forward, we have to protect ourselves? And so we will build what we can build here. Yeah, that's my first preference to have the production be right here and to make sure that we know how to turn it on rapidly for anything that we think we might need that's viable to produce here. And then on top of that, to buy what we have to buy, but we've got to have our own reserve to protect ourselves. You know, I would hate in the future if New Yorkers faced a crisis and turn to the federal government and they said, sorry, we're all out. And then New Yorkers suffered, New Yorkers died because of it. We cannot take that risk, so we have to do it ourselves. And I'll just preview that when the Q and A is over, we're going to have Scott just show us a little more about how this thing works. So that'll be our finale to give people a sense of how this amazing machine actually works, homegrown in New York City. Go ahead.

Moderator: Next we have Yoav from The City.

Question: Hi Mr. Mayor. I wanted to ask about, you know, the State is rescinding some of its orders for equipment, basically stuff that might no longer be needed and is now giving ventilators to other states. Is the city going to similarly try to perhaps cancel – I know we need a lot more PPEs – but on ventilators, are you going to cancel any of those contracts or will those perhaps go into the reserve –

Mayor: We need –

Question: As far as the field –

Mayor: Go ahead.

Question: As far as the field hospitals, do you still plan to build all the ones that you've announced or might you scale those back as well?

Mayor: So, the quick answer is on the purchasing. Again, we do need to ensure that we'll have enough full-service ventilators for the future. So, a number of come in, some of those are going to be returned obviously when the crisis really is over and we're far from out of the woods. When everything's sort toted up and we know which ventilators are going to remain in New York City at the end of this process, we do need to make sure we have a reserve beyond that, and we will have that as part of our strategic reserve. Obviously, the bridge ventilators as well, the 3,000, but yeah, you said it on the PPEs, we are way far from out of the woods. We're still – we don't have enough strategic gowns to get to the end of the week, so we're going to have to have a really substantial supply to protect us in the future.

On the field hospitals. Yeah, the basic reality now is the ones that are up and running will continue for the foreseeable future. The ones that are not yet built out, some may be built out and be ready in reserve and or to be turned into isolation and quarantine centers. Remember in most of these cases, the same a building, whether it's hotel or some other kind of building that could have been used for a field hospital, can be converted to an isolation and quarantine center. We're going to need a lot of those rooms, a lot of those beds when we go into the next phase of really pushing back to the disease, and then lots of testing, lots of temperature checks, lots of people who, if anyone is positive or symptomatic, isolating them, quarantining them, helping them get through, testing more before people come back. We're going to need a lot of space for that. So those facilities will have more than one purpose for sure.

Moderator: Next, we have Marcia from CBS.

Question: Good morning, Mr. Mayor, how are you doing today?

Mayor: Go Marcia, how are you?

Question: I'm okay. I have two questions for you today. First of all, there are several southern states including Georgia that are thinking of reopening their states. I wonder if that concerns you and if the concerns you have that people from those states might come to New York City and spread more disease, would you consider barring those people from coming into New York in order to protect New York City residents? And my second question has to do with the fact that the Governor is meeting with President Trump today, and I wonder if you were in that room, what you would be saying to the President today?

Mayor: So, Marcia, on the first point, I am really concerned. I don't begrudge any state or any city that has really carefully looked at their health care situations, seen a lot of improvement, they've gotten to that phase where there's only a few cases and they can trace them and contain them and keep the outbreak from reasserting. Any state or any city that has certain that that's what they've got, God bless them. I understand why they would then open up, but if they're wrong about that, if they're not careful about that, then it could threaten all of their residents and then everybody else, and that becomes a problem for New York City. That becomes a problem for all of the United States of America. So, I'm definitely concerned that, you know, you've heard a rhetoric from the President, you know, liberate Michigan, liberate Virginia. That's dangerous in my view because it pushes people to move whether they have the facts or not, and I think the facts are matter here. If you can prove that the disease is really under control, then start opening up more. But if you can't prove it, don't make a false move. Don't take your foot off the gas. So, in terms of the threat to New York City, that's a real threat.

I want to be careful about the notion – and this is something we would work on the State with – I would be very careful about the notion of, you know, being negative to any individual from a state. People tried that towards New Yorkers, I didn't think that was fair. So I'd be very careful about that. I think the more essential point is to push for federal leadership to work with the states to make sure they reopen carefully, slowly, and if they see anything wrong, that they quickly put some of those restrictions back on to protect all of us. We get one chance, Marcia, to

restart our economy and restart our lives the right way, and if people jump the gun, we're going to pay for it. We're all going to pay for it.

If I was in a room today with the President, I would say, Mr. President, there's only been two things you need to do this whole time. One, get the testing to New York City and all the places in America that needed it. And two help us through this horrible challenge by providing us the aid we need to get back on our feet. The cities and states that have borne the brunt that are going through this health care crisis, this economic crisis, and aren't going to be able to pay the bills, aren't going to be able provide basic services, help us as only the federal government could do. Well, Marcia, he has got two things he really, really needed to do. The first one, he has blown completely. The second one he's been silent on and right now we're waiting for a word from Washington about whether that state or local aid is going to be in the current package. It's not looking good right now. The President must speak and tell the Senate they have to do it. They have to either do it right now or do it very soon or else you're going to see cities and states start to go bankrupt literally and not be able to provide what our people need, and then you won't have a recovery.

Moderator: Next is Roger from 1010 WINS.

Question: Hi, good morning Mayor. I wanted to ask you what you thought about the President's immigration announcement and what you think the appropriate immigration policy should be during a pandemic? Should there be cuts in immigration if it threatens public health?

Mayor: Roger, I want to say what I saw was bluntly and very sadly a just a brazen political move by the President. To introduce the question of immigration in the middle of this when he hasn't done those two things I just mentioned. He hasn't gotten us the testing. He's not getting us the stimulus funding. He's not doing his job. So, he's going to his all-time favorite distraction, immigration, which he uses as a campaign weapon all the time. Remember when, you know, the caravans were all going to be coming to our towns and taking over our towns from Mexico and Guatemala. Of course, nothing like that ever happened. This is his go to when he's in trouble. So that's what I think is motivating it. To the bigger issue, I respect any kind of a plan that is trying to protect us all while we deal with a pandemic. It's an exceptional situation, an honest plan to protect us while we deal with this and get back on our feet and then resume our traditions in this country of being a welcoming open country. That's one thing. I don't think that's what he's talking about. I think he's talking about a political ploy, honestly.

Moderator: Next is Julia from The Post.

Question: Hey, good morning, Mr. Mayor, and everyone else on the call. A question for you, Mr. Mayor and a question for James Patchett, who I believe you said is on the call. First for you, I'm wondering if you regret not having this bridge ventilator program going weeks earlier when we were in, you know, more dire need of the machines and I'm wondering if they were available on April 6th, why didn't we hear a bit then? And then for James Patchett, I was looking for an update on the homegrown testing. Have any of the contracts with the universities and the private companies been signed and if so, can you make that announcement now?

Mayor: So, Julia on the – I'll turn to James in the moment – I think, you know, our ground rule, when we have something to announce, we announce it. James will offer whatever he wants to now, but I will remind you that, you know, we've said those homegrown test kits they'll be coming in the beginning of May and that we're going to announce the different organizations that are part of the companies, the universities, anyone who is part of putting that together like this amazing coalition to put together the ventilators. We'll announce it publicly, but when we are ready and when everyone has been notified and they're ready, that's when we make an announcement. But to the question of the bridge ventilators again and we're going to do the demonstration a couple of minutes now because I know time is running short.

These were ready to go into action the week of April 6th. The situation changed radically and for the better, right around April 5th, April 6th including that we got some shipments of the full-service ventilators in at the last moment that we had not been able to depend on, so we didn't need to put them in the service. But if they had been needed, they would have gone immediately into service even though they were partway through the process with the FDA. And I want Dr. Katz to explain this because I think it's hard for a non-medical person and someone who hasn't been here in this kind of a wartime headquarters dynamic to understand just how close it got. Dr. Katz is the one that said to me, look, if, if we get to the point where it's about saving a life, then the rules, the medical ethics are actually different, vis-à-vis something like an FDA approval, if it's the only way to save a life. Dr. Katz, could you explain that?

President Katz: You have it exactly right, sir. And during those days, I remember every night, right before going to sleep, I would be checking to make sure there were enough ventilators at every one of our 11 hospitals and it would be the first thing I would do in the morning. Everything was about making sure that we wouldn't run out of ventilators. In general, we like for all of our machines to be approved by the FDA, we like them to have been gone through clinical practice. And so, when it turned out because you were able to secure those ventilators for us right when we were running out, we did not run out that week of April 5th, but how do we run out? We would not have needed the FDA approval. We would have not needed having done the research studies to prove that it works. Physicians can always use a device to save a life. And so if there were no ventilators to use and the choice was between allowing a patient to die and placing them on a ventilator that had not yet received FDA approval or been proven in clinical studies to work, everyone would favor using the ventilator device. And so that's why I was tremendously relieved when these, I knew these devices could be put into service.

Mayor: Thank you Mitch and I'll add to last point before turning the James quickly that, no, I want you to understand, Julia, the notion in the beginning that we would not have a supply chain that functioned in the beginning of March as this was going on, you know, we thought our supply chain was holding. We also thought federal aid would be consistent. And it was really, as we got into the third week in March that it became abundantly clear that something was getting worse and worse and something was going wrong. And had there been already supply chain and, or a federal effort to either use existing stockpiles or move ventilators around the country, which is something that could have done at any point, and they never did. I kept saying, mobilize the military, create a national supply chain that was federally run, use the defense production act properly. None of that happened. All of that could have given us the security that we didn't need to even think about something like doing a homegrown model. But at a point it became clear,

you know, towards the – again, the third week of March that everything had gone haywire, that we couldn't depend on any of the things we normally depended on. And that's where, from my point of view is like if we have to create something ourselves, whether we know how to make it or not, we got to do something, and these folks were amazing in pulling something together. And the fact is they did it so that – and we didn't know exactly how the pieces would align – but had it been needed, it was going to be pressed into service and this ventilator would have saved lives. James, you want to add?

Patchett: Sure. I'll just say on your second question. We've made tremendous progress. We've had a number of our partners sign contracts with us and we are well on our pathway to being able to meet the overall test kit obligations that the Mayor has set out for us to acquire for the city.

Mayor: More to come on that soon. Go ahead.

Moderator: We'll take two more questions today. Next we have Andrew from NBC.

Question: Mayor. Good morning. How are you?

Mayor: Good. Andrew, how are you doing?

Question: Good, thanks. So yesterday you announced the cancellation of all the June events including Pride, which is June 28th, just six days after that is the 4th of July. I wondered, have you already begun discussions about whether there can be any kind of fireworks watching in New York City and can you envision that?

Mayor: We have not begun those discussions. Certainly not at my level. I'm sure our team has been talking to our colleagues at Macy's and everyone else who would have to coordinate an endeavor that size. Hard to see it today, but you know, that is obviously one of the most important days of the year, and boy does it speak volumes to our values and what we're feeling as a country right now. So that one, we have some time to sort out, hard to see right now. But you know, Andrew, we're going to be looking at our indicators every single day to see where we're going. And so, you know, I'm going to reserve judgment on that for a little bit while we see what the health care facts tell us and just recognize that July 4th is a day like no other and want to be really thoughtful about that.

Moderator: Last question for today, Henry from Bloomberg.

Question: Hello, Mr. Mayor, I hope you're doing well. I've got two questions. They're related. The first is how is this bridge ventilator different from a normal ventilator? My second question is a lot of the recent research and reporting on this disease suggests that ventilators are not necessarily the most effective treatment of this form of respiratory distress. That really respiratory therapy, moving patients in bed, using oxygen, maybe better techniques for treating this particular new disease than going to a ventilator and intubating a patient.

Mayor: Okay. So, what we'll do is this, I'm going to turn to Dr. Katz to answer your medical question on one, what a bridge ventilator allows and two on whether there are alternatives that

are being considered. I can say from being in the middle of this battle I certainly think our health care professionals across the board believed with dealing with the scale of this problem, that it was absolutely necessary to have ventilators available in quantity to keep up with the demand and keep people alive and they have saved many a life because they had the ventilators. But Dr. Katz answer your two questions and then we'll have Scott, just take a moment as we conclude to show us a little more of how this works so everyone can see it. And Scott, you can just describe first in the microphone, what are you going to show people, and then you can do that, but let's have Mitch Katz first answer the questions.

President Katz: Thank you, sir. I'll start with Henry's second part. So Henry is correct that as we've learned more and more about this illness, we know that it's best to try to avoid intubation. It's best to use other methods like giving people oxygen, doing aggressive respiratory therapy, using a BPAP – BiPAP – and other methods of trying to keep people off the ventilators in part because once people need ventilators, they don't do very well, in general. That being said, no one disagrees that if somebody cannot be oxygenated through other methods, they should be on a ventilator and there is no choice. So, we do everything we can to try to keep people off ventilators, but when they need a ventilator, no choice. And that has not changed anywhere in this medical picture.

In terms Henry of how to explain it, and I think when you see it, it will help. Most ventilators work by pushing oxygen through tube into the tube that people have placed in their mouth and then down into their lungs. So you're essentially - the machine is blowing out, a typical ventilator is blowing out air that goes directly into the tube. This ventilator is based on a robotic squeeze of what is known as an Ambu bag. When we ventilate patients if they only need to be ventilated for short periods of time, we've always used what I call an Ambu bag. You - it's not a ventilator - basically you squeeze it and it pushes in the oxygen. And we've used this for generations. It's a very safe and well-known tool. The problem is somebody has to squeeze it and you need a live person to do that and you need them to do it at a particular rhythm, so that the inspiratory phase and the expiratory phase is the right length of time, the pressure is the right amount of pressure. So firstly, it would take a real human being 24 hours a day to do it. And second, they wouldn't necessarily always get it right the way a robot can. And so basically the way I look at these vents is it's a robotic Ambu bag presser. It presses the Ambu bag the way a human might, but they – it does it with much greater scientific precision. It doesn't require a human and the developers of this have added some amazing bells and whistles, literally bells and whistles, that would tell us if the person were not getting the proper amount of oxygen through the ventilator.

Mayor: I think that's perfect. That's great, Mitch. I think Mitch just gave us the narration we needed unless there's anything you want to add, Scott, and feel free and then show us.

Cohen: Okay. Yeah, the only thing I really wanted to add was that I think what the bells and whistles that Dr. Katz's is talking about we have on here primarily because the – we had physicians, clinicians working with us from the very beginning. Dr. Quan and Dr. Slocum Jr. who were working with Marcel and the engineers, and we were getting constant feedback about you know, what physicians would want on a device like this. So they had the the visibility, kind of a control panel to understand how the device was interacting with the patient.

Mayor: Excellent.

Botha: Okay. So that's good. Yeah, so you switch it on, you set your [inaudible] volume, your respiration rate and your inspiration expiration ratio, and then you hit run. And then once that is going, it's going to be just be like watching paint dry. It's going to go for hours and days. The bags themselves lasts for about three days. So, we replaced the Ambu bag every three days. We have an inline pressure sensor that measures the respiratory or the airway pressure. So that's one of the safety feedback loops so that you get all of that displayed on the interface on the front. If there's any of the thresholds for safety that are surpassed the device will show one of the relevant alarms, run air pressure, if it fails to work or if there's something that obstructs it, it will have a mechanical failure alarm that you cannot silence. And so, it's a minimum viable product around replacing a human hand and it's able to do that with a much higher rate of precision than an untrained hand, for instance.

Mayor: Excellent. Well, thank you again to everyone, really an amazing achievement. And as we wrap up just to say this is New York City ingenuity at its best. This is a homegrown solution to an international problem and it really, really inspires me. As I said, as days come in when we're going to really praise and appreciate and love and celebrate all the heroes of this fight, starting with our health care workers and our first responders. I'm going to make sure we also have a moment in that parade where we get to celebrate the folks who created these ventilators and the folks who built those face shields and the surgical gowns and all the things to protect our health care workers and our first responders because it's just been an amazing effort by so many New Yorkers to help each other, to be there for each other, and that is something that one day we will celebrate like we have never celebrated before –

[Ventilator beeps]

I think the ventilator agrees with me. Okay, thank you so much everyone. God bless you all.

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