Stories of

Resilience, Collaboration, and Hope

During the Coronavirus COVID-19 Pandemic of Spring 2020

CentraState Healthcare System®

Prepared by: Marketing & Public Relations Department of CentraState Healthcare System in collaboration with Inspired View Communications, LLC and Hope Spring Communications, LLC.

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Foreword:

COVID-19: The First Four Months

The world pandemic landed at CentraState in the first week of March 2020. Due to the tragic misfortune of one large, extended family, CentraState was hit hard and early. On April 8, CentraState's COVID census peaked at 135 COVID patients, 70% of the entire hospital census. This is the story, told by the very front of front line staff, of heroism, collaboration, elation and despair, but ultimately pride in confronting a novel, unknown, potentially lethal virus which seemed to kill indiscriminately.

There are times when being ahead of the curve is a very precarious place to be. COVID-19 was one such place. At one point in April, CentraState's communities accounted for 48% of all cases in Monmouth County. As of this writing in July, that number is still about one third. How does an organization of acute and long term care operations go about organizing a response to a pandemic for which there are limited (sometimes unreliable) diagnostics, no known therapeutics, insufficient protection for workers and poorly understood transmission vectors?

Practicing medicine in real time is at best disquieting and at worst, tragic. Protocols to treat COVID simply didn't exist and time-tested protocols still are non-existent. And yet that is what hospitals and doctors have been faced with. So this is also a story of ingenuity, courage, sacrifice and leadership, often found in unsuspected places and by unsuspecting people. Perhaps most of all, these first four months of the first wave of this pandemic is a story of humility and humanity, practiced in the purest form of compassionate patient care.

To paraphrase Churchill, is this the beginning of the end of the pandemic? Almost certainly not. Might it be the end of the beginning? We can only hope. But we must expect this virus to be with us for some time to come, always with the risk of suddenly breaking forth from the weakness of mitigation efforts. As such, these stories also offer us lessons in preparing for future surges.

It has been written that courage is just another form of constancy. In facing this pandemic, there is no such thing as constancy. The lack of understanding of the nature and dynamics of this novel virus means that clinical protocols, policies and practices evolved continuously, and will continue to evolve, as approaches to care are tried, discarded and revised on a regular basis. The courage it took to navigate such unknown waters, sometimes out of desperation, often out of pure instinct, cannot be underestimated.

These stories are dedicated to the women and men of the CentraState family.

-John T. Gribbin, President and CEO

I. The CentraState Covid-19 Response Teams

From March 2020 to June 2020, CentraState Healthcare System responded to an influx of patients with COVID-19. In the early days of the crisis, the system's clinical and administrative leaders developed innovative ways to deliver care to keep staff and patients safe, including mobilizing a multidisciplinary COVID-19 Response Team. These teams of clinicians were dedicated to only treating patients with COVID-19. The team included primary care, infectious disease, pulmonary and critical care physicians; medical residents; advanced practice nurses; staff from Infection Control, Pharmacy, Care Coordination, and Social Work; and medical staff leadership.

Together, the team treated more than 600 COVID-19 patients over four months. Each member brought compassion and clinical skills to those in need. This unique team approach made a difference in clinical outcomes, according to the participants. See Appendix A for a list of team members and respondents.

This was a historic time in CentraState's history. A cross-section of the response team has shared their recollections from that challenging time.

Philip Angello, MD
Family Medicine

As clinicians, we're hardwired to respond to patients in distress. If I was a fisherman, I'd be out fishing. If I was a coal miner, I'd be down in the mine. This is what we do. But honestly, after my first day on the unit treating patients with COVID-19, I wasn't sure how I was going to be able to continue.

I joined the medical staff at CentraState in 2012 as a family practice physician. I did some inpatient care over the years, so I thought I could handle the pace. However, the workflow was different from what I'm used to and the electronic medical record wasn't the same one that I use in my practice, so there was a learning curve. But I adapted quickly. The most frustrating aspect of this experience was not having the answers to help our patients. I tried to get through one day at a time and focus on the successes we had, the small things we could do to help our patients. These small victories kept our team going.

The team included the very best nurses, physicians, respiratory therapists, and physical therapists at the hospital. Being among other dedicated clinicians made the rough days much more tolerable because everyone shared the burden. Because our process was evolving daily, continual meetings and communication enabled everyone to keep in touch to discuss admissions, transfers, and discharges, and who was assigned to those tasks. During the busiest week in the hospital, Dr. Matera did an incredible job making sure the team had enough staff and supplies to handle the surge. Those who showed up truly showed up, showing amazing professionalism and commitment. We wouldn't have gotten through it without that camaraderie.

I worked for one week in the hospital, followed by two weeks in my office, for three rounds. In total, I worked on the response team for 21 days. Since I had sent all the PPE that we had in the office to the hospital, I conducted telemedicine visits with patients during my "off" weeks.

It was difficult to process some of the outcomes we were seeing: an 80-year-old who contracted the virus was able to fight it, while we had to place a patient in his 30s on a ventilator. There was no rhyme or reason about how this virus attacked patients. I looked forward to hearing the chimes on the overhead PA; that meant a COVID patient was being discharged. It was emotional. We celebrated every single person who went out the door and deeply mourned everyone who didn't.

One woman who was being discharged from our care was reluctant to leave because her father was still fighting the disease in the ICU. I arranged for her to see him before she left because I knew it would help them both continue to heal. I'm not sure if he survived, and I'm almost afraid to find out. I'd like to think that small act of kindness made a difference.

I think this crisis exposed some deficiencies in our current healthcare system. Delivery of care has gotten compartmentalized, but this epidemic shattered that model. It just wasn't possible to stay in silos and deliver care during these circumstances. I hope that we remember how we came together this time and ensure that when another emergency occurs that we have the infrastructure in place to deal with it.

For me personally, I live alone, so I've felt even more isolated than usual. To protect others, I haven't seen my family or friends, including my buddies in my boat club. Now that restrictions are lifting, it's good to have a bit of human contact. I had felt like an astronaut in space in a capsule, and it's good to come back down to Earth.

Ayesha Chaudhary, MD
Internal Medicine Hospitalist

My father was diagnosed with a brain tumor on March 7. He's a healthy 73-year-old, so this diagnosis had been a shock. The partners in my practice filled in to allow me to take a few weeks off to spend with him. When the COVID-19 Response Team formed about two weeks later, I looked at volunteering on the team as a way to

give back to God and help secure His blessings toward my father. I felt that it was my calling to join this fight during my own time of turmoil. My father said, "You became a doctor for a reason," and I knew he was right; somebody had to step up, and it had to be me.

On the A Team, the first team that was formed, I worked with Dr. Kenneth Eng to formalize a protocol to ensure that each patient with COVID-19 received the same care. At first, we just had two physicians taking care of more than 50 patients. A few more clinicians joined the team, including Alix DiTullio, a nurse practitioner from my practice. We added infectious disease, pulmonary, and primary care physicians, with each physician handling a floor.

As a hospitalist, I was used to having a high volume of patients in the hospital at once but the severity of illness, the clinical unknowns, and the full donning and doffing between each patient was daunting. I spent two hours a day on the phone with patients' families and social workers, and attended twice-a-day team meetings. The work was tiring and emotionally stressful for all of us. The masks made it difficult to breathe and I often got headaches from lack of fresh air. There were days we were so busy that sometimes I forgot to eat.

Because most families were unable to visit their loved ones, we often were the go-betweens. One patient had been on a ventilator for about two weeks and hadn't been doing well. I spoke with her daughter and asked if we should stop providing care and focus on keeping her mother comfortable. The daughter was upset that she couldn't see her mother and say goodbye in person. A nurse used her phone to allow the daughter to see her mother one last time.

It's not an easy task to become a doctor, and at times it can be a thankless job. While my approach to patient care didn't change during the crisis, the response to it did; I feel much more appreciated and respected by administration, the community, and families, even when the outcomes weren't what we had hoped. Family members thanked me for caring for their loved ones while they cried over their loss, and I cried with them. I have a renewed respect for our nurses. They are amazing; they were front and center, spending countless hours with patients in their time of need. I had appreciated them before, but now I bow down to them; nurses are the backbone of the healthcare system.

In the long run, this experience has made us stronger. Everyone came together and supported one another. As we became more comfortable in our roles, we became a well-oiled machine. It taught us how resilient we are. It's not that we weren't giving good care before, but healthcare had gotten away from its core purpose. Now, everything is 100 percent focused on helping these patients get better, not paperwork or patient satisfaction scores. These other things often distract us, but this is how care should be. I think this crisis was a blessing in disguise.

When there's a challenge like this in life, we can either fall down and cry or rise up and face it head on. God needed me to do something good, so I took a deep breath and joined my colleagues as we faced it head on.

Jamie Cherian, DO
Family Medicine

I'm a first-year resident, my sister is a first-year nurse, and both of my parents are respiratory therapists. While we were worried about being on the frontlines of this pandemic, our roles are to help patients in need.

I wasn't part of CentraState's COVID-19 response team initially, but when the activity started to pick up, I volunteered to take care of patients in the ICU. Joining the team was a hard decision, but at the end of the day, I made a commitment to help people. It's our role to be there to help people through healthcare, because who else can?

It was a lot of work, but I think our response was amazing. As clinicians, we didn't anticipate putting our lives at risk like this, but everyone stepped up to the challenge. No one complained; they dropped everything else in their lives to join this effort. While my colleagues in New York had trouble securing PPE, I never had any issues. The hospital's administrative team was smart about how it was used, so I never felt that I was in danger due to a lack of protection.

I isolated myself from my girlfriend, friends, and family for several months, which was tough. We still spoke over the phone or had family Zoom calls to keep in touch. It was a lonely, stressful, and exhausting time fueled by lots of coffee and pizza, but I tried to stay as positive as possible. I focused on helping our patients fight to come out on the other side, and kept telling myself this was only temporary; it would get better. It was fulfilling to see patients get better and difficult when they decompensated.

Since this is my first year out of medical school, I'm still getting used to being a physician. A lot was thrown at me all at once but I'm grateful for the experience because I learned so much, especially ICU-level care, which I saw much more of during the pandemic. This has been something that I'll never forget and I believe it will make me a better physician going forward.

Joining the team was a hard decision, but at the end of the day, I made a commitment to help people. It's our role to be there to help people, because who else can do it?

Alfred DeLuca, MD

Infectious Disease

Medical Director of Infection Control, Chairman of Antibiotic Stewardship Committee

When we began to see patients with this relatively unknown virus at CentraState, I knew this was where I belonged. I've worked here for 30 years. I've seen the rise of HIV/AIDS, a similar public health crisis that also was steeped in fear and panic. What self-respecting infectious disease doctor would run away this time?

Times of crisis often reveals people's true character. While most of my colleagues would probably say that I am a character, I'd like to think that they'd say I have character as well. In the early days of the coronavirus crisis, fear was spreading as fast as the virus itself. There was a lot of anxiety among our clinicians and staff. My goal was to share as much of my medical knowledge with the team to try to alleviate the stress we were under. I closed my outpatient practice and slept in my office many nights. I tried to be a supportive, vital link in the chain between clinicians and ancillary staff. We were all on the same side—and I wanted to make sure everyone felt that way, too.

We were on the cutting edge of treating this disease, forging new therapies while standing on shifting sands. It seems each day brought a new challenge, a new treatment, and a new theory for managing this virus. Dr. Matera quickly helped our team congeal and shared what he was hearing from other facilities fighting the same battle. His role in getting CentraState involved in the Remdesivir clinical trial was remarkable. The Research Team navigated through misinformation and politics to sift through the data to make sure we had the most up-to-date clinical information. The Pharmacy Department completed a voluminous amount of paperwork and jumped through a lot of hoops to enable is to secure lifesaving compassionate use medications.

At the height of the outbreak, we had 30 to 40 patients on ventilators. People of all ages and all walks of life became desperately ill very quickly. One of the success stories that I remember most vividly was a 40-year-old patient who had tried to fight the virus at home. When he was admitted, he was short of breath and very sick. We treated his condition aggressively, and due to our dedicated care, he never needed to go on a respirator.

We made a major difference in the lives of our patients—and in each other's lives. People in this hospital rose to the occasion and performed admirably,

despite everything mounting against them: volume, severity, lack of data, lack of staff. In short, our little hospital stepped up in a big way. I learned a lot about human nature during this crisis. I saw humanity its best.

Alix DeTullio, APN
Family Medicine

March 12, 2020, should have been a happy day for me; my family was moving into our new home. Instead, it was filled with anxiety and fear over COVID-19. CentraState, our small community hospital, was being shown on CNN and written about in The New York Times, something I would have never imagined.

I grew up at CentraState, from visiting my father, a critical care pulmonologist, at work to working as an EKG technician during college, and now working there as an advanced practice nurse with Freehold Hospitalists, LLC. This place and the people inside of it are like family to me. It was an easy decision for me when they asked for volunteers for the COVID-19 team.

I was scared of the virus, but given what we did know, I was safer caring for these patients than my older or compromised colleagues, like my father. Witnessing young people dying with no underlying issues was terrifying. I wanted to reduce my father's exposure as much as possible, so I requested emergency privileges to work for him, in addition to the response team.

Those first few weeks I walked into the hospital with a gnawing feeling in the pit of my stomach, seeing the fear in my colleagues' eyes, seeing seasoned practitioners crying and scared. As a relative novice practitioner, I was looking at those seasoned practitioners for guidance or a sign that this was going to be OK. Unfortunately, I didn't see that. This was new to everyone.

In medicine, we thrive on research and evidence-based practice for our decisions. We had none. We were using Facebook groups made up of medical providers from around the country to discuss what we were seeing. Our team at CentraState worked together to research and develop protocols that were tailored to what we were seeing at our hospital.

Though providing care in this unchartered territory was terrifying and difficult, nothing was harder than having to tell family members that their loved ones were passing away and they couldn't see them. Hearing someone's wife crying into the phone and telling me, "He is the father of three girls. You have to save him," and saying goodbye through a screen will forever be etched in my mind. I hope that these families know that we did everything we could with what we had.

After eight weeks, the numbers were finally decreasing. I took this opportunity to take some time off from the response team. My patients didn't know this, but under that gown, face shield, two masks, and gloves was a mother of two and a wife. As I mentioned, my family was supposed to move into our new home on March 12 but instead only I moved in. My family lived with my in-laws to eliminate their exposure. Everyone asked me how I did this. The truth is, I wanted my children to know that when people are in need, you help. I wrote a journal during those weeks, hoping that my girls can one day understand why I made that decision and what life was like for me during this pandemic.

It also gave me time to reflect on what I had been through and what I am capable of. I have returned to my normal job as a hospitalist, but if the time returns where a COVID-19 team is needed, I will not hesitate to volunteer again. This experience has made me stronger and grateful for all that I have and for the family I have at CentraState.

Kenneth Eng, DO

Family Medicine

Assistant Chief of Staff

When multiple members of a large family in Freehold contracted the virus, our clinicians were plunged directly into the fire; there was no frying pan first.

I run a solo practice and typically round in the hospital in the morning before going to my office, where I see patients from 9 a.m. to 4 p.m. Once COVID-19 hit our community, I was in the hospital helping treat patients from 7 a.m. to 7 p.m., and often later. I was part of the first multidisciplinary team that Dr. Matera assembled, serving as one of the primary care physicians alongside a pulmonologist and an infectious disease physician. From March 25 on, our team morphed into more teams that worked to care for critically ill patients nearly non-stop until early June.

The team model was a phenomenal idea. It helped streamline our efforts and ensured we worked efficiently. It was a unique situation because we had such a large number of patients presenting with the same disease process, but the team concept made sure everyone was on the same page. Twice-daily meetings allowed everyone to come together, including staff from Pharmacy, Discharge Planning, to discuss all cases, review any new treatment protocols, and plan for discharging the patients well enough to go home or to a rehab facility. Because physicians were on the floors, nurses didn't have to track us down. Thank goodness for Dr. Matera's leadership and the support we received from Dr. John Brandeisky and Dr. Maher Youssef. They made us feel like we weren't alone. Anytime there was an issue, one of them would help find a solution.

The hospital had ample PPE, so I felt comfortable that I could take care of these patients while also protecting myself. Every day was stressful. We had to have difficult conversations with patients' families over the phone. I felt for them because they couldn't see their loved ones but still had to make decisions about their care, especially at the end of life.

Many of the patients that we lost had comorbid conditions like diabetes and heart disease. I hope this crisis helps highlight the importance of making healthy decisions in our lives. I'm honored to have served on this team and help our community when they needed us most.

Lee Ettinger, MD

Pulmonary Medicine

My daughter is a physician assistant in New York. She joined her hospital's COVID-19 team and because she didn't have proper PPE, she contracted the virus. That's when I decided I needed to help, too.

I'm a pulmonologist practicing in Florida. We weren't experiencing any significant outbreaks in Tallahassee, so I contacted a locum tenens agency to help with the response in New York or New Jersey. I was concerned about contracting the disease and possibly spreading it to family. I'm 67 and my wife is 68, so this was a difficult decision. We knew the risks, but I also knew that there was a tremendous need for my specialty. I learned that a pulmonologist at CentraState had contracted the virus and that the hospital needed coverage. Some agencies offered more to send me to the Caribbean. My friends thought I was nuts to go to New Jersey, but it was just something I needed to do—and I'm glad that I did.

This was my first time in New Jersey, so I didn't know what to expect. I was nervous because you hear stories about New York and New Jersey, but I had a very good experience. I stayed in Colts Neck and was surrounded by beautiful purple trees. It was scenic. The staff at CentraState was superb, taking care of patients while supporting each other. Everyone was very pleasant.

My practice is mostly outpatient pulmonary care now, so this experience was much more intense. It was very uncomfortable to wear a tight N95 mask for 12 hours; it was a lot of pressure on my face. The patients were much sicker—and at times, younger. In 35 years of practicing medicine, I've never had to keep looking

every day for data and answers. There was so much crazy stuff being reported in the media and President Trump kept pushing his own treatments. In some circumstances, all we had to offer our patients was compassion. That's a hard lesson in medicine, but we can't pursue untested therapies without data. We usually have time to access reliable, peer-reviewed information, but this was a totally unique situation. At night after my shift, I'd go back to my hotel to review new research and recommendations about the virus and look at what other facilities were doing.

Despite these extraordinary circumstances, I was very impressed by CentraState. It was a smart move by Drs. Matera and Brandeisky to form response teams. To care for critically ill patients well, teamwork among physicians, nurses, and others is essential. Everyone on the team was considerate and worked well professionally. They took good care of me and ensured that I had the PPE that I needed. It was remarkable. I'm pleased I got this assignment.

Everyone gets into medicine for different reasons. I was a chemistry major and hadn't planned on going into medicine when I was in college, but I wanted to help people. Something that I've learned is that we need to be able to live with uncertainty and not let it override our emotions. You try to do the best you can. The patients who stick with you most, of course, are the ones you couldn't help, but you must remember that the majority do get better and you helped them get there.

Kevin Farris, MD

Family Medicine

When I saw on the news that New York and New Jersey were getting slammed with COVID-19 cases, I knew I wanted to help. We didn't have a lot of cases in Texas where I live or in Knoxville, Tennessee, where I do locums work. There was a need for physicians in the Northeast, so I applied. As I was flying to New Jersey I wondered if I was going to get sick.

I spent three weeks at CentraState, working as a hospitalist caring for COVID-19-positive patients. Because patients couldn't have visitors, when they were dying, we were the only ones there to pray for them. I can't imagine my mother dying and not being able to be there for her.

In my experience, members of the care team usually don't talk; we leave notes for each other about a case, but rarely discuss them in person. At CentraState, we talked about each case and developed strong working relationships. Dr. Matera unified the team in our mission. We met twice a day to regroup and share insights. This crisis reinforced the importance of being kind to people and not just looking at this as a job, where you check in and check out. I wish this feeling of comradery was the norm and not the exception.

I think the hospital did an incredible job during this crisis. The community owes Drs. Matera and Brandeisky a huge "thank you."

Zeeshan Khan, MD, FAAFP, CMD

Family Medicine, Geriatrics

Assistant Professor, Rutgers Robert Wood Johnson Medical School at CentraState Medical Center

For me, this crisis highlighted the best virtues that we have as a society. Our clinicians banded together to create a unified front, regardless of specialty, regardless of status. It was a trying time, but it brought out the best in us.

As one of the core faculty members with CentraState's Family Medicine Residency Program, I worked with the residents who had been paired with attendings to treat COVID-19 patients in the ICU and Step-Down Unit. The Response Team brainstormed new and innovative ways to take care of patients when traditional medicine stopped working. The typical in-fighting and ego trips that can sometimes bubble up during stressful times just didn't happen for our team. We were united in our purpose, and Dr. Matera showed great leadership in

keeping us moving forward. It's hard to put into words; we were "there" for each other.

While even seasoned clinicians were apprehensive about our task, these residents stepped up. Family medicine doctors don't often provide this level of critical care; this crisis provided a once-in-a-lifetime opportunity to teach—and learn—advanced skills. They helped manage patients on ventilators and provided vital information to families over the phone. The response from our residents was amazing, and I think the hospital was equally thankful for the helping hand.

One of the biggest challenges for me as a primary care physician was not being able to use therapeutic touch. I felt for these patients, who were in an alien environment being cared for by people who looked like aliens in all of the required PPE. They couldn't hear us; we couldn't hear them. It was a struggle to communicate.

Unfortunately, not every outcome was what we had hoped. I've never signed so many death certificates in such a short period. One patient in particular hit me hard. We helped celebrate his birthday, then a few days later he needed high-flow oxygen. A few days after that he was gone. It was a period marked by the highest highs and lowest lows.

Through my private practice at Freehold Family Health Center, I've been able to follow up with patients who had been hospitalized with the virus and had beaten it. That's been very gratifying. I now cherish and celebrate the little victories in life.

This experience is something that I will carry with me for the rest of my life. It took a big toll on me mentally and physically, and changed me in many ways, mostly for the best.

Miah Kim, DO

Family Medicine, Primary Care

This experience has been one of those events I know I'll never forget.

Two weeks before Dr. Matera asked if I would join the team, a patient of mine that I had recently seen fell ill and was admitted to the hospital. His brother had tested positive for COVID-19, so my staff and I had to self-quarantine. Luckily, I didn't get sick and was able to join the team.

I closed my practice for a week and lived in my office during that time to protect my family. My husband stayed home and took care of our two children, who are 13 and 15. I don't usually have a large hospital census as I typically only admit my own patients, so this experience was like being a resident again. I was back to working 12-hour days in the hospital—a big change for me as my typical day includes seeing a few patients in the hospital early in the morning and then spending the rest of my day seeing patients in my office.

Since I wasn't familiar with these patients, I had to review each chart and get up to speed with each case, then round on about 20 patients each day. To preserve PPE, I couldn't go back to the nurses' station to chart. I couldn't even bring paper into the room to take notes, since it could become contaminated, so I had to remember each patient's name, room number, and the specifics of their examination. Like many others, I got overheated at times from wearing PPE. It's one of the most challenging things I've ever done.

Everyone worked well together, and I enjoyed working with the same group of physicians and nurses each day. It was a wonderful experience to work collaboratively to manage and take care of patients with effective communication and coordination of care

among all team members. Oddly enough, the stress of the situation brought us all together, when usually stressful times tear teams apart. I got to know so many people at the hospital and we built lasting professional bonds. I think relationships across the entire team deepened, between nurses, physicians, ancillary staff, and administration. I credit Jim Matera for developing the team concept. Some doctors weren't on board at first, but in the end, this proactive model reduced chaos and risk and improved efficiency, coordination, and standardization. It was a thoughtful and insightful move on his part.

I don't know if we'll ever see something like this again in our lifetimes. It was eye-opening, to say the least. Going forward, I hope that if another health crisis should arise that we'll be better prepared to handle it. It was nice to see the community come together and better appreciate its healthcare workers and the healthcare system. This experience has made me appreciate the little things in life.

Ramanasri Kudipudi, MD

Internal Medicine, Infectious Disease

COVID-19 was such a new disease that while we were preparing for how to handle it, we were hit with a cluster of cases.

Dr. Matera quickly assembled teams of clinicians to respond to the influx. With creative thinking, we were able to limit the number of providers who had to enter each room while still providing compassionate care. One physician examined the patient and then shared the information with the rest of the team. Only one nurse entered the patient room and handled as many tasks as possible during only one or two visits a day. Baby monitors were used in adult rooms to help patients communicate their needs and IV pumps were relocated outside rooms so nurses could adjust medications without needing PPE.

Every morning the team reviewed each patient's plan of care and discussed admissions, transfers, and discharges. Using the latest and best evidence possible, the teams looked at risk factors, laboratory markers, and each patient's clinical picture to make care decisions. I'm thankful that Dr. Matera and the administrative team were able to get us the supplies and support that we needed. Because there weren't any approved treatments for the virus yet, options varied for each patient. Several patients with COVID-19 who met the criteria were approved to be placed in a clinical trial of the antiviral medication Remdesivir. Other patients were treated with convalescent plasma through a partnership with the American Red Cross.

Losing young patients who left behind young children was heart-wrenching. I often felt helpless as patients both young and old died alone with no family around them. A cohort of patients from the same family was admitted. They were all very sick and we were losing them back to back. Then one morning, the only male survivor from that family was extubated and eventually discharged from the hospital. A few weeks later, I watched him jump up a set of stairs without getting short of breath. That is a memory I will cherish.

During this crisis, it was essential for me to keep mentally and physically fit to cope with the stress of the situation. The only way I could keep myself sane was to continue my exercise schedule. Taking long runs was a blissful way to recharge. I also spent quality time with my family and kept in touch with friends. I'm thankful to the community for its support. It was heartwarming and emotional to see the response from the community. Students provided positive encouragement and restaurants thanked us with delicious food. Everybody came together in their own way to help us get through this pandemic.

It's tragic how the pandemic highlighted the shortcomings of healthcare systems worldwide. Overburdened hospitals need an upgrade on every level of their infrastructure. Hospitals now need to focus on coping with emergencies while ensuring a safe environment for healthcare personnel and patients. The pandemic also has had an enormous impact on how we consume, learn, work, and socialize. As humans, we are adapting to learn to communicate without personal interaction. Social distancing and face masks are our new norm.

When I look back to a few months ago, I was amid a once-in-a-lifetime historic pandemic. Years from now, I'll share these stories with friends, teach about COVID-19 in schools, and tell my kids and grandkids about life in 2020. We lived through fear and uncertainty, yet we prevailed in finding a new normal.

Arthur Kwok, MD, MSc

PGY-III, Family Medicine

Rutgers RWJMS at CentraState

Treating COVID-19 was a unique opportunity as a medical resident because there was much unknown about the virus. Attending physicians, specialists, and residents were all in uncharted territory.

I was completing a rotation in the ICU for my residency when CentraState began seeing COVID-19 patients. As a physician, I pledged an oath to help others – and there was no better opportunity to do so than this crisis. Considering I'm a Canadian citizen living by myself in Asbury Park, I felt I wasn't putting anyone at risk but myself, whereas some of my colleagues were understandably reluctant to "run into the fire" since they were living with immunocompromised family members. I volunteered to join the hospital's response team and worked alongside pulmonologist Nirav N. Shah, DO. I volunteered for six weeks and recommitted to an additional four weeks in anticipation of another spike. We were given adequate PPE compared with other hospitals in the region, so I felt safer at work than at other places, such as grocery stores.

We had to learn a lot in a short period and had to innovate our practice as we gained more information. We had a fair amount of success weaning patients off ventilators compared with other hospitals. It was an amazing experience to learn while helping some of the sickest patients. I take honor and pleasure in what we do as doctors and in this case, we were able to rise to the challenge.

I started journaling during this experience to get it down on paper. I remember some entries vividly: A female patient in CCU wasn't doing well and her family was considering terminal extubation. They wanted to say goodbye to her, so we helped make that happen. She passed away shortly after. It was difficult for us to mourn that loss because we had another patient that needed the bed and the ventilator.

I had another patient who was from Trinidad and was in the country alone. We'd had responded to a Medical Response Team (MRT) for her because she was really struggling to breathe. I knew I could be the last person that she'd see before she was sedated and intubated and I felt hopeless. Ten days later, we extubated a hospital-record six patients in one shift—including this patient. I made sure that I was there because I wanted to be the first person she'd see when she woke up. It was a powerful, fulfilling experience to help lead someone out of such a dire situation.

In another case, I was taking care of a local musician who had been very sick in the ICU. One night when this patient was not doing well, I called his son, a medical resident like myself. I asked him to pull over the car he was driving and explained the situation: We had to intubate his father and put him on a ventilator. Over the next 30 days, we had communicated constantly and bonded. Eventually, we discussed the benefits and drawbacks of a tracheostomy. However, still holding out hope, the family decided to try convalescent plasma as

a ‘last-ditch effort’ to hopefully preserve his quality of life as a musician. Remarkably and dramatically he responded to the treatment. Three days after receiving plasma, he was extubated and shortly after was transferred out of the ICU and to rehabilitation. I’m so grateful that we had a positive outcome.

The COVID-19 crisis highlighted the healthcare disparities in our country. While I’ve read some opinions that suggest COVID-19 doesn’t know color or class, the statistics and my personal experience highlight that more of our medically and socially underserved populations are negatively affected by this disease. I chose family medicine so that I can help underserved communities by providing care to people who need it the most. This experience solidified that goal for me. As I graduate as an attending physician, I’m proud to continue to practice in an underserved area by providing care at a federally qualified health center in Atlantic City.

Even during the darkest days, we never lost sight of the importance of what we were doing. The community helped keep our spirits up by sending food and cards. Fire trucks drove by to show their support and people stayed home for us to help keep the number of positive cases manageable. I feel blessed to have been at this hospital at this moment. I’m proud of my time at CentraState and the way we worked together. It’s an experience that I’ll hold dear to my heart for the rest of my life.

Sharon Lorfing, RN, MSN, CCRN, APNBC

Nurse Practitioner for Thoracic Service, Lung Cancer Screening Program Coordinator

I’ve wanted to be a nurse since I was very young. I suppose you could say that it’s been a calling. The community says that we’re heroes, but to me, it’s just part of who I am.

I spent 23 years in ICU nursing and 3 years as a nurse practitioner before my current role as a nurse practitioner at CentraState. In “normal times” I’m the coordinator for the lung cancer screening program and the NP for our thoracic service. I see thoracic consults in the hospital and during office hours with the surgeons. I round on our post-op patients, really being hands-on at the bedside so I can see what their needs will be upon discharge. With elective surgeries and lung screenings on hold, I could’ve gotten involved with CentraState’s COVID-19 response or taken PTO. I asked Dr. Matera how I could help.

On the team, I served as an attending physician since there was a shortage of primary care physicians for this effort. I rounded on COVID-19 floors with an infectious disease physician and a pulmonologist. I was a bit nervous to take on the role of medical attending, but I had the backing of a great support system.

The work was different, yet not unfamiliar. The units are big and we had 16 to 20 patients to round on in each unit, which was a challenge. I used every minute during my 12-hour shifts. It took a while for me to figure out how best to organize my day doing the “attending tasks.” It was impossible not to do “nursing tasks” while in the rooms.

I wanted to spend as much time as possible with my patients, so if I had extra time, I would go back to a room of a patient who needed extra attention. I’d ask if they needed anything, hold their hand, and try to smile with my eyes as much as possible since PPE covered most of my face. Some patients were so lonely because of the isolation that was required. I couldn’t imagine how I’d feel if this was my family member. One patient, a man in his 40s, pleaded with me not to leave him because he just didn’t want to be alone. It broke my heart when I needed to leave his room to attend to other patients.

I’ve never seen protocols change so rapidly. What worked one day didn’t work the next. We had to keep changing therapies to find what worked. As clinicians,

we needed to be flexible and open-minded. Our team collaborated well. When patients were at the end of life, we allowed their loved ones to come to the unit if they were healthy and able. For those who wanted to see a patient but couldn't be there physically, we used FaceTime to allow them to say goodbye. It was a positive experience for those who wanted closure. It reminded me of just how fragile life is.

At home after my shifts, I kept my distance from my husband and daughter, who both have asthma. I was nervous that I would bring the virus home to them, but I wasn't afraid for my own health. I've been exposed to so much over the years: HIV, TB, hepatitis … this didn't really scare me. I did pause, however, when I saw that healthy young people were contracting the virus, too. That was unsettling.

Because CentraState was hit with cases hard and early, we didn't have the opportunity to look to other facilities for guidance. We had to develop our own course of care, and as a community hospital, we did as well or better than bigger hospitals. We had a lot of good outcomes and received great feedback from families. Our leaders were available 24/7 and worked alongside us on the team. I never felt like I was alone. They were continually asking if we were ok or if we needed anything. If I had a question, there was always someone I could reach out to. I take pride in working here and this response put us on the map.

After this experience, I realize that I'm not ready to retire. I've been a nurse since 1986 and an NP since 2008. I'm not burned out. I'm very lucky that I get up to go to work every day. After almost nine years at CentraState, I've learned that I still have a lot to learn. My story isn't over yet. I have a lot more to do here.

Farag Mankarios, MD

Internal Medicine

Chief of the Department of Medicine

This spring, we were on the frontline of a battle working not to save our own lives but the lives of many others.

CentraState assembled a response team of clinicians of varied ages and backgrounds, some even from outside the state. We all gelled quickly, working like we'd known each other for a long time. On the floors, the members of the response team were flexible and cooperative as they moved through in uncharted territory with rapidly changing protocols. Physicians from our community who are normally in competition with each other focused on serving the community instead of promoting their practices. Specialists who typically didn't work in the hospital offered to help cover shifts. It's like nothing I've ever seen.

This support was important to lessen the volume in the Emergency Department, which had been overrun with patients who thought they had COVID-19 and those who wanted to be tested for it. We were able to shuffle resources to decrease the stress on the ED while other physicians ramped up telemedicine services to help decrease unnecessary ED visits.

We made a lot of changes in the way we practice, and some will likely be permanent. We've changed the way we triage patients, and I think telemedicine will continue to evolve as a key way to improve access to care. We learned how to do the best we could with the resources and information that we had. While most of the country lacked resources, we were able to meet the demand and treat the patients in our community as well or better than other hospitals of our size.

In normal times we typically don't get into philosophical conversations, but we had them often during the crisis. We learned a new type of etiquette while we worked to keep patients' families informed and accommodate everyone's needs. At discharge, our team worked to help patients and their caregivers understand the social distancing guidelines and isolation procedures designed to protect other members of the household.

This crisis has been a wakeup call for every one of us as human beings, individuals, and physicians to re-evaluate our perspective on life. During these last few months, we've seen unexpected patient outcomes, both

good and bad. How many times in 50 years have we seen employees clapping for a patient being discharged? We now know how special that event is.

I've learned that being a physician isn't a profession, a talent, or an intellectual pursuit; it reflects a personal belief and faith in humanity to expose yourself to a deadly disease to benefit others. This is our purpose—to make a difference in each other's lives; you feel it inside that you're doing something important.

I feel thankful and blessed to have worked with this responsible, cooperative, resilient, and enthusiastic group of physicians.

James Matera, DO

Nephrology

Chief Medical Officer

My uncle used to say, "If you ever see me in a fight with a bear, you better help the bear." I feel the same way: I'm going to take on any challenge thrown my way. I don't see myself as a hero; I'm part of the team, and that's enough for me.

When I look at who was on CentraState's team, these men and women were doing the jobs they were meant to do. It's similar to what happened on 9/11; the cops and first responders were the ones going into the buildings while everyone else was running out. Our clinicians never wavered. They took on an unknown disease and used methods that weren't tried and true without complaining while putting themselves in harm's way. I'm not one to use the word "hero," but they certainly all have my admiration. They did what they are trained to do with expertise, skill, and compassion.

Early on, we recognized that treating patients with COVID-19 presented a different set of circumstances, so we knew we had to devise a new way to deliver care. We held an emergency Medical Executive Committee meeting before we even had any COVID-19 patients to discuss how we were going to handle cases when and if they came. Members of Med Exec were assigned as liaisons to areas like Pharmacy, Laboratory, and the medical staff to ask for volunteers for the treatment teams we wanted to create. The chair of the Department of Medicine and Chief of Staff called every active member of our medical staff and added those willing to join the team to a list.

We coordinated teams of clinicians that were dedicated to only treating patients with COVID-19. Infectious disease physicians and other clinical specialists brainstormed creative ways to evaluate and treat patients who tested positive or exhibited symptoms. It takes a leap of faith to put yourself in harm's way. We started with a three-week rotating schedule, but moved to a weekly rotation when we became inundated with cases. We made sure that no one worked two weeks in a row.

The leadership team was transparent about what was going on and we delivered the same messages to all of our teams at all levels of the organization. Department leaders met twice a day to discuss everything from room-cleaning protocols to PPE supplies to how to feed patients and staff. Clinical teams met every morning to discuss issues like PPE, medication, testing, and assignments. Afternoon meetings on patient units were used to expedite calls to update patients' families, celebrate the patients who were weaned off ventilators, and start the discharge planning process for those well enough to go home. As more information about the virus became known and the number of patients with COVID-19 grew, we had to be fluid and adapt to changes. We couldn't get bogged down in thinking about what we could've done. We had to look at what was facing us then and deal with it.

Our staff is predominantly solo practitioners and instead of competing, they worked in concert against the disease. Teamwork was an absolute necessity for something of this extent and magnitude. With a unified front, the team's collaborative approach meant everyone was working from the same playbook. This led to more uniform decision-making and allowed us to change

course once we learned what was—or wasn't—working. And, the nurses knew who to contact because our physicians were always present on the floors; they didn't have to track doctors down for answers. We were able to provide continuity of care to our patients, which I don't think would've been possible without a team model.

I don't sleep a lot normally and this crisis kicked up my adrenaline. I read everything I could about the disease, listened to podcasts, and was invited to participate in the CDC's weekly meetings, which was an honor. The virus was evolving around us, and that kept me going. I kept waiting for the one thing that would unlock the answer to treating it. Some days were disheartening and I felt helpless. We were treating patients as best we could but weren't seeing success. One night I sat in the darkened ICU listening to the chorus of ventilators breathe for our patients. I walked around and saw vents in every room. I knew we were going to need to open more units with more vents and may need to consider splitting them between patients. We were on the precipice of winning or losing the battle. It was my darkest hour, because honestly, I wasn't sure we were going to win. I told the team about my experience the next morning and we talked about what else we could do to turn the tide. They agreed that we were going to do everything we could to save as many patients as possible. It really lifted me up and made me feel less hopeless.

I missed hearing live music during this time, so while listening to Warren Zevon's song "Lawyers, Guns, and Money" I got the idea to include some of the lyrics in one of my daily team emails: "An innocent bystander, somehow I got stuck between a rock and a hard place. And I'm down on my luck, Yes, I'm down on my luck, Well, I'm down on my luck ... Send lawyers, guns, and money." I included song lyrics from then on. I mixed somber with inspirational, with songs like "We Shall Overcome" and Elvis Costello's "Peace, Love, and Understanding," which was the song that resonated most with the team. I even started a contest, where I'd include three different lyrics and people had to guess what they had in common. When we were surrounded by devastation, I think it helped to focus on something else, even for just a moment.

This profession requires doses of humility, compassion, and faith—and we needed a lot of faith during this crisis. This experience brought me closer to my faith, which had waxed and waned over the years. It's heightened my sense of community—and my sense of loss. I've lived in the same town since 1970. The same barber has cut my hair since I was 9 years old. It's a small town and COVID-19's impact on my community has been significant. I often bought bagels and sfogliatelle for the staff from the local bakery to help everyone feel a little better.

When I switched from solely clinical work to a leadership role, I questioned if I had the leadership skills to do it. This experience brought out leadership qualities that I didn't know I had. Navigating my team and hospital through this answered some of the questions that I had about myself. I feel comfortable that our response was on target, and I think the community agrees. We did the appropriate things to ensure the best care and all department leaders played an active role in the response. Everyone focused on their particular areas and made the plan gel. I give five stars to CentraState's management staff.

It was a hands-on learning experience for everyone. On a weekend afternoon during the second or third week, we had underestimated the number of clinicians we needed to have on. I still have clinical privileges and I didn't want the team to think I wasn't willing to join them at the bedside so I treated patients too. I was careful and used the appropriate PPE but in late March or early April, I developed flu-like symptoms. I was sick for three days with a fever but no shortness of breath and temporarily lost my sense of taste. I tested negative for COVID-19 but later tested positive for the virus's antibodies.

I'm proud of the doctors who came together during this crisis. Everyone was scared about what we were faced with, but our team went above and beyond. We cheered

each discharge and when those chimes played overhead, you knew all the hard work wasn't for nothing.

I have great respect for medicine. It's an amazing dichotomy: the human body is so resilient yet so frail. If our young doctors didn't know this before, they know it now. If the older ones forgot, they now remember. It brings you to your knees when you're unable to successfully treat a patient, and a microscopic organism brought the entire world to its knees.

An excerpt from "Peace, Love and Understanding"

"And as I walk on through troubled times

My spirit gets so downhearted sometimes

So where are the strong and who are the trusted?

And where is the harmony, sweet harmony?

'Cause each time I feel it slippin' away

Just makes me wanna cry

What's so funny 'bout peace, love, and understanding?"

Joshua J. Raymond MD, MPH, FAAFP

Family Medicine, Geriatrics

Associate Professor; Director, Geriatric Fellowship Program, CentraState Geriatric Fellowship/Family Medicine Residency Program

I felt confident at first; we had made it through March without a COVID-19-positive case at The Manor Health and Rehabilitation Center. Then, on April 1, it arrived. It seemed that very quickly one case turned into 44. To make the outbreak more difficult to control, most cases were asymptomatic. We started testing roommates of COVID residents, and very few of those who tested positive had any symptoms at all.

To help me get through the crisis, it was important for me to talk to my colleagues. Besides my colleagues at Rutgers Robert Wood Johnson Medical School, I spoke to my counterparts at long-term care facilities in New Jersey and throughout the country who provided guidance and support. The doctors in California were about a week ahead of us in the outbreak and provided knowledge in advance: "Praemonitus praemunitus: forewarned is forearmed." One doctor cautioned me, "When you get your first COVID-19 case, you'll be embarrassed." When we had our first case, it was difficult. It was validating to know that other parts of the country were not able to get testing supplies and personal protective equipment either.

Few people know the large number of seniors that CentraState takes care of outside the hospital. Between The Manor, Applewood Estates, and Monmouth Crossing, CentraState is responsible for providing care for 500 seniors on any given night. I think the senior service facilities did well during this outbreak because we are a part of the CentraState Healthcare System. The hospital functioned like a control center and these other sites reported to the hospital. Because of this arrangement, it was easier for the senior care facilities to get supplies and support. For example, due to the large number of COVID-19 cases at the Manor, we transferred 19 patients to the hospital for treatment. After a short stay at the hospital, the patients who returned were isolated to help prevent further spread.

I was immersed in COVID medical care during the pandemic. Besides my role of caring for the COVID-19-positive patients at the CentraState senior care sites, I worked as an attending physician with the Family Medicine Residency Program on the hospital-based COVID-19 Response Team. Residents and attendings provided the primary medical care for the 25 ventilated ICU patients during the outbreak. I divided my time between providing care at the hospital and to our residents at The Manor. The residency program also continued to provide primary care at the Federally Qualified Health Center affiliated with the hospital through in-person and telemedicine patient visits.

Although I'm not aware of the exact number, there were many COVID-related deaths at CentraState long-term care facilities. I think that many of these deaths

were less about the effects of the virus on their bodies and more due to the stress of the situation. Patients that are frail and elderly don't have the physiologic reserve, so even the slightest change in routine can have consequences. Because of staff and room changes, schedules were disrupted, and for those who are already frail, this can be life-threatening under normal circumstances.

It must have been very difficult for our patients during this time. Imagine having dementia, being hard of hearing and vision-impaired, and the caregivers that you have known and trusted are replaced with people that either you don't know or don't recognize because they are clad in so much personal protective gear.

It was difficult for me to watch families and patients interact with each other through the windows. Patients requested rooms with better views of the parking lot so that they could visit with their families. Each day, the families of our residents lined the parking lot on Route 537, holding signs and balloons and singing songs to their loved ones on the other side of the window. It was a powerful display. Some were there to provide hope; some were there to say goodbye.

The hardest "goodbye" for me was a patient I'd been caring for since 2010. He saw members of his family pass away one by one, and eventually the virus was just too much for him. When a 100-year-old resident fought the virus and survived, it felt like a victory for all of us.

The community's support also helped. The flyover by the U.S. Air Force, drive-bys from paramedics, police, and fire department, and colorful cards from around the country were amazing to see. I still remember reading the inspiring words from "Denise in Ohio."

This has been a stressful time marked by tremendous loss and tremendous change. I hope that there won't be additional suffering due to PTSD. I hadn't worn scrubs since 1999 but when this disease began to overwhelm our community, I wanted to help and join the nurses, housekeepers, food service workers, and others in the fight. I knew it was the right thing to do.

Dan Sandru, MD
Family Medicine

I'm a lieutenant colonel in the U.S. Army Reserves, so I think volunteering when needed is just part of my personality. When Dr. Matera asked for volunteers for CentraState's COVID-19 response team, I couldn't stay home and not help.

It's the first major pandemic that I've been a part of and it's been a unique, challenging experience. Primary care physicians worked together with infectious disease and pulmonary staff to figure out what would work best and we adapted our approach along the way. We met twice a day as a team, including the hospital's leadership. It was like a war room. Dr. Matera sent out daily emails which often included song lyrics. It gave us something to take our minds off the stress, unwind, and feel more positive about the significant problems we were facing.

I volunteered with the team for three weeks, providing primary care and supervising family medicine residents in the ICU and step-down unit. I also admitted and rounded on my own patients during the crisis. It was easy for me to keep going because there were sick patients and my skills were needed. During the crisis, I was called for activation by the Army. I explained that I was involved in the response effort at the hospital. The commander said he was from Freehold too and knew that CentraState was getting hit hard. He recognized that we were already on a mission of our own and said he'd find other reservists outside of the New York/New Jersey area.

I feel blessed that I didn't get sick. I have my three young kids and wife at home, so I tried to be as careful

as possible. I showered and changed at the hospital before going home, then left my dirty clothes and work shoes in the garage. Once in the house, I showered and changed a second time and limited contact with my family. I would've felt terrible if I volunteered for this and then got my family sick.

Taking care of people is my focus; that's not new. People still need good care, so I never closed my office. We screen patients for symptoms of the virus in the parking lot. If they have symptoms or are afraid of coming to the office, we offer telemedicine. If they don't have any symptoms, we see them in the office. While the number of office visits has dropped considerably, it was important to me to stay open. I'm now helping test residents for COVID-19 at long-term care facilities.

We've gotten through a tough time by sticking together. Better days are coming, so we need to stay positive and keep taking precautions. The crisis has slowed down, but it's not over yet.

Nirav N. Shah, DO

Internal Medicine, Pulmonary, Critical Care

Director of Intensive Care Unit

In the critical care field, we're used to seeing the sickest patients with the most complex health conditions. When COVID-19 began to affect our community, the number of patients, the acuity of the illness, and the aggressive way the virus caused patients to quickly become severely compromised was something we'd never seen. It was the unknown that made this disease so terrifying.

CentraState was one of the first hospitals to see a major surge, and because of this, our hospital was in the news for months. Despite that pressure, our hospital did an amazing job for our community. As the Director of the ICU, I saw every patient who came into the ICU and worked with the team to develop treatment protocols. We had no solid treatment strategy when this crisis began. In a normal situation, we'd have years of data to analyze to develop a treatment plan. With COVID-19, there were no guidelines; we were writing them as the admissions mounted. Twice-daily meetings provided an opportunity to share ideas and come to a consensus about which strategies to move forward.

Because my wife is a pediatrician, she understood that I needed to be at the hospital to help lead my team. It was difficult, however, to not be able to hug my two children or see my family. Luckily, I have a great support system of family and friends who reached out periodically to make sure that I was OK. This type of support system, however, was something our patients couldn't tap into. We'd try to connect families with their loved ones through video chats, often at the end of life. In simpler times, I'd sit down with my patient's family members and explain the situation and what options remained. They would have time to absorb that information and reflect on what was best. In this crisis, however, there wasn't that luxury; there wasn't time to process and analyze. It was emotional for everyone.

The best days were when a patient was able to come off a respirator. We all applauded and cheered when an 80-year-old patient was extubated. I remember thinking that if we were able to do this for one patient, we should be able to see all of them through. That feeling of victory is what kept us motivated. The fact that we did everything we could and couldn't save everyone is what will affect me the most.

Effectively treating patients—especially those with COVID-19—requires coordinated care. Medicine is at its best when everyone is on the same page. From doctors to respiratory therapists to nurses, everyone had the same job: to treat these patients as best we could under extraordinary circumstances. I never heard anyone say, "That's not my job" or assert their authority over a colleague. That's unusual and I hope it's a culture that continues.

Nivedita Sharma, MD
Internal Medicine

CentraState was one of the first hospitals in the area to see a surge of very severe COVID-19 cases. When I asked to join the response team, it was not a tough decision for me to make. There were so many patients to treat. I asked myself, “If not me then who? If not now then when?” I became a doctor to help.

The sheer number of patients that were coming in with COVID-19 was overwhelming for the whole system. Our administration made decisions quickly, which allowed us to coordinate care and treat many patients with limited PPE. The second challenge was how little we knew about the disease. At the time, there were many ways that the virus presented itself and affected the body. There were no clear-cut protocols and we constantly had to think on our feet. The team held daily multispecialty meetings, reviewed literature from around the world, and assessed patient outcomes to modify our treatment protocols on an ongoing basis.

Some patients would do well and then crash unexpectedly. We had several codes going on at the same time in different parts of the hospital. Critical care units filled up and we had to expand. I would call an 80-year-old husband to let him know that his wife was better and being discharged, and on the same day call the distraught husband of a 47-year-old woman and have to tell him that she didn't make it. Anything could happen. We could feel the pain and frustration of family members who couldn’t be with loved ones when they were so sick, and it was mentally draining.

Another challenge was the fear of getting sick and putting the lives of our loved ones at home in danger. It was important for both patient care and our families to avoid sickness. I had never been reluctant to touch elevator buttons or computer keyboards, but we were fighting an invisible enemy that we knew very little about.

The hours were long, and the work was difficult, but as long as patients kept coming in, we kept up our pace. When the going was difficult, we got strength and vitality from each other and the community. I will always remember the courage of the nurses who fearlessly treated patients with dementia who wouldn’t keep their masks on or a pregnant nurse doing her share of the work with a smile. These healthcare workers showed toughness, courage, and compassion. When it got overwhelming, we were always there for one another and used the positive energy surrounding us to continue.

Amid the tough times were times of joy and encouragement. The Freehold community provided so much support. They sent bottled water, cupcakes, flowers, and food. They posted signs outside the hospital and kindergarten classes drew beautiful cards that put a bounce in our steps and smiles on our faces. I felt proud of the work we were doing. After one particularly long day, I stepped outside to remove my mask and get some fresh air. The courtyard was covered in colorful, inspirational chalk drawings that said, “You Inspire Us,” “You Are Loved,” “We Care About You,” “Please Stay Safe,” “Yes You Can,” and “CentraState Strong.” At that moment, all my efforts and struggles were put into perspective. These messages of encouragement and love were emotionally empowering.

Many patients had comorbid conditions that made fighting COVID-19 much more difficult. My hope for the future is that we will all do a better job of taking care of ourselves and our environment. Preventing disease is easier than trying to treat it. By following a healthy lifestyle and taking steps to maintain a strong mental framework, we can boost the natural immunity we are blessed with. I have a new respect for primary health care physicians and research scientists' roles in keeping our community healthy.

This experience also has reminded me to live life now. Live your dreams and enjoy and cherish the special moments with family and friends now because one never knows what tomorrow will bring.

Brittany Shepherd, MD, MSC
Internal Medicine

I was practicing in Maryland when I saw on the news that New York and New Jersey were seeing a swell in COVID-19 cases. I felt a pull toward service and a sense of duty. There was a major crisis going on in our country and I had the exact skill set that could help. I knew I had to get involved with the response.

I contacted an agency that put me in touch with the administration at CentraState. While I typically focus more on the research side of medicine, I served as a hospitalist on the hospital's response team. I was primarily responsible for patients who had been admitted through the Emergency Department. We provided medical care to patients and compassionate support to their families.

As a research physician, my work is very cerebral and data-focused. I'm typically trying to figure out how to fix the leaky faucet. In this situation, we were pulling people out of a rapidly moving river. In normal times, most of the people we treat have chronic conditions, but during this crisis, we were solely focused on combatting the virus. I learned that at times, less is more. Sometimes the best thing to do was nothing; to wait and just support the patient until we had more clinical information on which to base a decision. The most challenging times were when I knew that a patient's condition was moving in the wrong direction. Sometimes you'd just know. I'd reach out to the patient's family and urge them to start thinking about what was best for their loved one. These are always difficult conversations but even more so by phone instead of face to face.

The comradery of everyone on the team made the hard times easier. We made it through challenges together and built a network of support and positivity. Our daily meetings provided a forum to share, reflect, and debrief on the day. As someone from outside the organization, it was helpful to meet twice a day to get—and give—information. At the end of each day, Dr. Matera's nightly email included song lyrics, some inspirational, some funny. I don't know how he had time to choose a new song each day but I appreciated his creativity and candor. The community's support also was uplifting. Just seeing the signs while driving in each day renewed my sense of purpose. It's easy to get bogged down in the other "stuff," but this crisis showed us just how little we need.

I feel privileged to be in the profession I've chosen. We were part of something truly important. We were essential. We still are, and now the world knows it, too.

Atlas Trieu, MD
Family Medicine

Like many young physicians, I had wide-eyed views in medical school about helping the underserved and underprivileged. Somewhere along the way that idealism got buried under paperwork and patient satisfaction scores. Joining CentraState's COVID-19 Response Team was an opportunity to put my ideology to the test—and I decided to take it.

We were living and practicing in Los Angeles when my fiancée, an ICU nurse, read an article about how the New York metropolitan area was becoming overwhelmed with COVID-19 cases. As a locums doctor, I'm used to traveling to other states to provide care where it's needed. I contacted a medical staffing agency, who connected me with Dr. Matera at CentraState. I sent him my resume and applied for an emergency license to practice in New Jersey. A little more than a week later I booked my flight.

While my fiancée couldn't make the trip, we talked about the risks involved for me. While it sounds cliché,

she, too, agreed that we'd gone into medicine to help people and make a difference, and going to CentraState was a once-in-a-lifetime chance to see those goals through.

I trained in rural Texas, where family physicians often provide emergency care and surgical services. I already knew how to intubate, manage patients in an ICU, and respond to codes, so it was easy to jump in and work alongside CentraState's infectious disease, pulmonary, critical care, and nursing staff to treat patients with the virus. During the crisis, I spoke with my colleagues at UCLA who weren't yet seeing the numbers or acuity that we were seeing in New Jersey. I was able to share insights about our protocols for admissions, transfers, and isolation so West Coast clinicians were better prepared for what was coming their way. Back in my hotel room, I'd watch the evening news and think that what they were reporting was old; we'd already found a better treatment than the one the reporter was discussing.

At the height of the surge, we were managing 140 patients spread over multiple units and floors. This experience renewed my passion for medicine and my respect for nurses, who made a hard job look easy. I was there to help and there to learn. I'm now able to recognize how the virus presents on lab results and chest X-rays. If the virus gains momentum in rural Texas, I'll be able to share my knowledge with clinicians who may not have encountered it before. It was an intense experience, but a good one, too.

As the country begins to reopen, I know that there's not much that I can do to make my city safer but I'm confident that I have the skills to help our community get through it.

Maher Youssef, MD

Internal Medical

Chief of Staff

The COVID-19 pandemic was like fighting a war, and CentraState's medical staff were like Marines at war. Everyone supported each other and came together like a family. It was truly impressive.

As Chief of Staff, part of my role was to help facilitate the emergency credentialing and hiring of new and temporary clinicians. Because we needed more physicians on the COVID-19 Response Team, my staff and I quickly processed and approved the paperwork for about 20 physicians—usually within 24 hours of receiving the needed documentation.

While I didn't provide hands-on care as part of our clinical response, I made myself available to anyone who needed answers or support. At times, we struggled with securing enough PPE, and the sheer volume of patients was a challenge. I worked closely with Dr. Matera and the rest of the team to ensure everyone had the resources that they needed to effectively treat patients. For my own practice, we saw some patients in-person and used telemedicine for others. I participated in video meetings to stay connected with colleagues. This crisis changed my practice considerably.

All of our lives changed drastically this spring. I missed going to the gym and being able to get a haircut, but that paled in comparison to the work our team was doing to handle the surge in patients. I don't think any of us had been through anything like it before—and I hope we never do again. The emergency that had once united our country is now threatening to divide it. I hope we can find common ground to move forward from this together.

II. CentraState Healthcare System COVID-19 Leadership Perceptions Report

Individual phone interviews with 37 members of the CentraState leadership team and department heads/managers (see Appendix B) were conducted between June 4 and July 8, 2020. Interviews were designed to capture perceptions on CentraState's response to the COVID-19 crisis, including what was done well, what could be improved upon, and what was learned overall.

The purpose of this report is to examine CentraState's response to the pandemic, memorialize experiences to preserve the organization's history, and consider what adjustments might be made to bolster CentraState's ability to respond to a future crisis. Feedback has been organized into themes and categories as follows.

What Was Done Well

Overall

- Handled things very well overall, especially given how quickly information/the situation changed by the day and hour
- Remained steadfast in our goal to save lives and protect patients – never lost sight of this.
- Maintained a laser focus on protecting patients and staff from the early onset, and that has not stopped to this day.
- You go into medicine to help people, and we really did – we went back to the basics in medicine.
- When there is passion behind it, together we can do significant things to save lives.
- It was a huge undertaking and for the most part we were able to stay ahead of it, doing the best we could.
- Overall as an organization, we did extremely well. We stayed ahead of the curve but it was a struggle to get there.
- We established structure and processes early on to help us succeed.
- The two key elements to handling things well were the early decision to put the COVID team structure in place, and the efforts we made to protect our staff.
- We might not have done as well without our HRO training and focus on transparency.
- Transparency made a big difference and helped allay fears.
- We reacted quickly and went to work immediately.
- Early adoption of social distancing/use of masks helped.
- I'm really proud of how we organized, came together, and maneuvered through, especially since we didn't have a roadmap and we're not part of a big system that standardizes the direction.
- Being a small system allowed us to really make decisions based on what was best for our staff.
- One main outcome is that we're closer as an organization now.

Ingenuity/ability to pivot

- The best part was the amount of ingenuity and creativity that people came up with on the fly – it was so refreshing. They came up with phenomenal things.

- In the face of adversity, we showed great ingenuity – a term even used by the Star Ledger reporter who spent time on site.
- We got a lot right, and if we were not headed down the right path, we were able to change direction and recover quickly.
- There was no manual or research protocols to refer to, which prompted us to reach down to the depths of our resourcefulness and get creative to meet this challenge.
- We did everything in real time – we never practiced medicine in real time before. There was a lot of art as much as there was science in this.
- As much as you try to plan, much had to be done on the fly. It was almost impossible to come up with a scenario in which the supply chain was completely broken.
- We thought about managing the crisis in worst-case scenario terms; thinking to these extremes helped.
- It was amazing how quickly decisions were made.
- With adaptation and innovation, we were able to manage some things in house, such as testing.
- We learned that you can accomplish whatever goal you have if you're willing to pivot.

Examples of ingenuity/pivoting:

Converting space to anticipate surge

- Impressively converted the old CCU unit that was being used for storage in record time. Rented a container for items being stored there and revamped the whole space; all done in-house.
- Converted the mother/baby unit to a medical/surgical unit.
- Maintenance figured out how to convert certain areas to negative pressure areas by changing the HVAC system to create new functionality.

Reducing exposure

- COVID teams (see section below)
- Relocating IVs outside of patient rooms to minimize nurse exposure. This was critical and Materials Management helped so quickly with getting extension tubings.
- Making Wellness Center showers accessible to staff at the ends of shifts to minimize the risk of bringing the virus home.
- Minimizing/eliminating non-emergency/outpatient services quickly; probably could have shut down the OR a bit later, but safety was the top priority.

PPE/supplies

- Found creative ways to source items that were needed, from PPE to medications, and we tracked these down at all hours.
- Found evidence-based ways to extend use by being creative without putting anyone at risk, such as using processes for tagging masks by name and centrally sterilizing them with UV light/kiln processes.
- PPE ingenuity/going above and beyond to procure helped contribute to the kind of outcomes we had. Overall only 11 staff were hospitalized.
- Med/Surg, Infection Control, and Materials Management facilitated extended and reuse protocols for gowns.
- Sterile processing worked with other departments to make face shield from laminate and other supplies.
- When it looked like gowns were getting short, we created them using contractor bags, lab jackets, and OR sleeves – we didn't need to use them, but all levels of staff stepped in to help.
- Respiratory sought unconventional ways of protection, including a plastic helmet product that utilized BiPAP principles and prevented ventilator use for several patients.
- Even while being creative, it was always a patient first/employee safety first approach.

Reallocating staff per need

- "Helping Hands" from nursing/office/PT/rehab/OR/PACU and other areas helped wherever they could, including in Infection Control, Materials Management, nursing, etc. This system was valuable while also helping keep jobs secure, which was a commitment from the hospital.

- As a branch of Helping Hands, the COVID transport team, which included endoscopy, PACU, and OR nurses, ensured that patients were moved safely throughout the hospital with infection control measures in place.
- Having consistency in assigning the same Helping Hands staff to specific units was helpful.
- Physician practice staff whose offices were closed were able to help the Employee Health department with employee fit testing for various types of masks coming in.
- Employee Health reorganized and dedicated resources to handle follow-up with employee exposures, helping place less of a burden on Infection Control.
- HAC/community nurse navigators/coaches helped with prescreening so Employee Health could focus more on those needing care and attention; became a Q&A for the community.
- Human Resources wellness team partnered with Patient Experience to do rounds to check in with staff on the floors/bring snack carts – worked with Amy Metzger to connect those in need to outreach services.
- Environmental Services coordinated training of agency staff to help clean rooms at The Manor when that facility faced staffing shortages.
- Hospital nursing staff assisted senior services.
- Security helped facilitate shower access in the Wellness Center and managed the no visitation policy at the doors.
- No one said “this is not my job.”

Overall leadership

- It’s important to lead by example; leadership had a strong 7-day-a-week presence throughout the crisis.
- It takes strong leadership to put yourself in harm’s way to face adversity.
- Leadership rounded every day to address questions and concerns.
- Even the idea for this report is progressive, as it helps us to prepare for the future.
- Leadership and management did a great job improvising and adapting to try to stay ahead of needs.
- Leadership/Mr. Gribbin worked hard to make vital connections, including those that addressed lab needs and finding a key agency to onboard environmental services staff.
- Mr. Gribbin led us very well, and I appreciate everything he did for us.
- Having leadership that cares is one of the important things.
- A strong working relationship was immediately forged between senior leadership and directors/managers, making it much easier.
- There was no separation between leaders and managers. VPs were standing next to staff making gowns.
- We knew we could pick up the phone and talk to anyone on the leadership team; help was available.
- One of the nice things about being a standalone hospital is that the C-suite is only a step away. It’s easier to go through an emergency situation when you see senior leadership standing next to you and listening.
- We did really well as a management group in identifying and assuming roles and adapting to CDC guidelines.
- Our role was to create a structure so that staff could succeed.
- Communication from leadership was a positive, especially from Mr. Gribbin, Dr. Matera, Linda Geisler, and Cathy Janzekovich.
- The support and visibility of Cathy Janzekovich and Linda Geisler was important for nursing.

COVID Command Center/huddles

- The COVID Command Center was set up right away, enabling us to deal with questions/give guidance in close to a real-time basis.
- The COVID command center kept everyone in the loop.
- COVID daily huddles were very beneficial; communication was critical and wonderful.

- This structure helped to identify problems and coordinate solutions.
- COVID huddles kept stakeholders informed about the bigger picture and kept people connected; in some cases people were able to facilitate solutions to problems and connections to supplies beyond their normal area.
- This structure was helpful in making people feel like they were not alone.
- We were able to adapt quickly and everyone was willing to help/share; no one took things personally.
- The transition from the nursing conference room to a virtual call with many more people went really well.
- Individuals stepped up to provide leadership for the group, keep people on track, and facilitate effective communication.
- Thanks to this structure, we were able to deliberate twice a day.
- With a disease no one understood, these meetings were critical to being able to explain changing protocols; this is so important for staff trust.
- COVID huddles were excellent for communication and determining what needed action; separate huddles for senior services were also beneficial.
- These calls were imperative for the senior facilities to stay informed.

Physician leadership

- Dr. Matera was masterful in providing leadership and trying to stay ahead of the curve.
- I'm thankful Dr. Matera was appointed to this role and helped us navigate these waters.
- Dr. Matera and the physician teams he set up were outstanding and a key to our success.
- During the few times Dr. Matera wasn't here, he was reading about the next best thing.
- Dr. Matera held town hall meetings for all staff early on to help them understand what we were embarking on.
- Dr. Matera was a calming presence, always professional and approachable.
- It was amazing to see how Dr. Matera managed people from out of the area. His leadership and calm presence were a huge asset.
- Strong leadership enabled the COVID teams to gel.
- Clear leadership/guidance helped clinicians feel less isolated; the knowledge that no one was alone and they could rely on others was key.
- A number of physicians put their practices on hold and came into the hospital setting as leaders, including Dr. John Brandeisky, Dr. Phillip Angello, Dr. Miah Kim, and Dr. Nivedita Sharma.
- The Family Medicine Residency Program and faculty stepped up to help run the ICU, and a number of APNs stepped up to run floors.
- Dr. Pedowitz was a lifeline in addressing needs and stepping up in family medicine/ employee health.
- Dr. Raymond took care of Manor residents in the hospital when other physicians were not coming in.
- I'm proud of how many physicians were able to adapt to new roles in the crisis.
- Some really outstanding physicians ran into the fire.

COVID clinician teams/collaboration

- The first real introduction to the virus was a national headline and the disease described to us was not what we saw, which changed the focus of how we dealt with it into a team-based approach.
- As patient numbers increased, this quickly evolved into floor-based teams (1 or 2 primary care physicians, a dedicated infectious disease specialist, and a pulmonologist) who coordinated care well together.
- COVID teams were extremely helpful in making care much easier during a time of chaos and in ensuring consistent messaging.
- COVID teams were a unique model that brought together the team and ensured physicians were right there alongside staff.
- COVID teams were perhaps the single most important step; this structure proved its value time and time again.

- COVID teams gave us a head start on developing necessary protocols, clinical direction, structure, teamwork, and guidance for hospital staff; this structure enabled us to accomplish things at warp speed.
- Once COVID teams were in place, we were much more in control and patients got better quicker.
- Having a COVID team physician assigned to each specific unit really helped.
- COVID team members were easily accessible and stepped in immediately when a patient declined.
- COVID team physicians quickly adapted to using the EMR, enabling nurses to spend more time at the bedside and less time handling phone orders.
- Nursing really felt the support of the COVID teams; so many specialists were watching our COVID patients from all different angles.
- Having a physician on the unit was so helpful for nursing staff.
- Meeting twice a day was helpful (in the morning to discuss the previous night, in the afternoon to discuss a case).
- It was amazing to see the transformation of disjointed care into collaborative care.
- This opened our eyes to the fact that others can do things that were said can't be done.
- The COVID team worked very closely with Pharmacy and Respiratory staff to develop the best guidelines and protocols.
- These teams have been disbanded now, but we've built in the capacity to pull them back together quickly if needed.

Use of locums/agencies

- When we needed to use outside physicians, they fell right in line and were able to quickly understand resources (ie PracticeUnite app) – like a well-oiled machine.
- Each locum was interviewed by Dr. Matera.
- Having an outside set of eyes was beneficial.
- Feedback from locums was they never had so much input in past roles.
- Use of agency in other areas was critical (Symmetry and AYA for nurses through NJHA, respiratory therapy agency, ED, HR, Environmental Services, Materials Management).
- For nurses, it was a quick turnaround and you could get staff when needed, especially when opening new units.
- Having agency nurses was helpful when we needed boots on the ground quickly.
- We hired 28 agency nurses for critical care, and we needed every one.
- Some agency nurses noted they were astounded by PPE management/availability compared to other hospitals.
- In the ED, the use of agency nurses also provided the ability for staff to take an occasional day off for much-needed respite.
- Agency personnel worked well – their compliments were reassuring.

Clinician communications

- With the assistance of IT, we developed an online, indexed COVID-19 eBook to house and update any new protocols developed during the crisis – our clinicians can use this as a guide/"training camp" moving forward.
- Dr. Matera sent daily email updates with key points on protocols, the latest research, articles, etc. to keep the medical staff informed.
- Zoom meetings were opened to primary care doctors and were well attended.

Examining science/research

- We formed a research committee to examine all the research.
- We formed a treatment committee to look at algorithms, track treatment data, consider labs, consults, medications, etc.
- Several clinical protocols were developed quickly via the COVID team structure.

- The team was able to determine quickly which things were working (anti-coagulation protocol, remdesivir trial, anti-inflammatories, early proning) and which were not (hydroxychloroquine).
- We paid attention to issues with blood clotting early and aggressively developed a protocol for thinning the blood.
- Banding together to think through things was refreshing.

Physician practice management and telehealth

- Trained staff and physicians in one week on telehealth platform, enabling physicians to work remotely.
- Got all physician practices up and running on telehealth, plus the MS Center.
- Were able to shut down five practice locations so that emergency/acute care could be limited to just East Windsor and Colts Neck.
- Prepped offices quickly for evolving procedures like temperature checks.
- Having urgent care centers under our umbrella was a benefit during a crisis.

Seeking input from state/nationwide resources

- Congressman Chris Smith and State Senator Vin Gopal were key in helping expedite test results, providing resources to prepare for in-house testing, and facilitating donations of PPE and other needed items; this speaks to our relationship.
- Congressman Smith's chief of staff (Mary) was integral to helping facilitate what was needed for the lab.
- We kept in continual communication with NJHA (CMO/CNO meetings three days/week; Finance biweekly calls, Command Center communications, etc.).
- Knowledge gained via regular NJHA calls helped us avert some issues.
- The NJHA was tremendous for communication and stepped up very quickly.
- We had regular virtual meetings with ONLNJ (Organization of Nurse Leaders).
- Ongoing contact was maintained with HFMA (Healthcare Financial Management Association).
- Physician leadership was in constant contact with major medical centers around the country.
- We were constantly in tune with the Department of Health/CDC recommendations, which were also constantly evolving.
- Daily contact with the local OEM ensured that our voice was heard on a state level.
- Pharmacy connections with other facilities and camaraderie among hospitals across the state was very helpful in problem solving.
- Ongoing contact with the Board of Health officer (Margie Jahn) was instrumental for Infection Control – she was available as our liaison 24/7.
- The early implementation and adoption of the CDC guidelines empowered staff at all levels to be a part of the decision-making.

Collaboration/teamwork/stepping up

- It was amazing to watch 2600 people and the medical staff come together.
- We saw remarkable coordination and collaboration.
- We saw leadership in unexpected places; unexpected heroes had a tremendous impact.
- The crisis leveled the playing field; everyone had an important role across the board and we all did our part.
- It was an eye-opening privilege to see people step up.
- It was an understatement how everyone just came together.
- I've been here 35 years, and it was amazing to see how we all just dove in. Each person took a part to help the staff, our patients, and the community.
- For the most part all staff played a role – they were committed, pitched in, and showed incredible teamwork.
- It was one of those things I don't know you can train for. We had the right people at the right time, and we got it done.

- Middle management stepped up and showed strong leadership.
- Middle management, directors, and head nurses stepped forward and worked magnificently with staff.
- There were many prideful moments of how well colleagues stepped up both on and off the front lines.
- I could not be more proud of staff across the board.
- The dedication and sacrifice was incredible – despite the risks and burdens, nurses and staff kept coming in, every day.
- We saw staff who had become sick come back to help.
- We cared about each other's well-being and checked in on each other.
- All departments interfaced together – Infection Control, Environmental Services, Sterile Processing, Engineering, Materials Management, clinicians, and so on; the collaboration was amazing.
- Nursing, Housekeeping, administration, and other departments all stepped up and did whatever they needed to do each day.
- We became like a family, which is not as easily accomplished in a bigger system.

Specific compliments for departments from other departments included:

- Gerard Crosbie and the Materials Management team:
  - Right out front the whole time, sourcing vents and securing PPE to prepare for the surge.
  - Did a yeoman's job in trying to obtain PPE.
  - Did a great job in reacting to the complete collapse of the supply chain.
  - Developed innovative ways to get masks and ensure they fit properly.
  - Always optimistic and managed the steps involved in processing/distribution of gowns etc. seamlessly.
  - Did a great job forecasting and keeping us abreast of the situation.
  - Outstanding job trying to get scarce supplies.
  - Kept checking in on the ED to ensure we had enough PPE.
  - It's truly amazing that we never ran out of PPE thanks to them.
  - They were amazing.
- Nursing had an incredible level of compassion for those at the end of life whose families could not be present; they went above and beyond to make connections virtually and provide comfort.
- Nursing helped ensure optimal therapy at discharge by coordinating with PT and rehab.
- Nurses stepped up to become Helping Hands, assisted with transporting patients, running specimens, etc.
- Helping Hands and the COVID transport team were phenomenal.
- Helping Hands from PT/Rehab were phenomenal for Materials Management; they invested themselves to learn what was needed, which speaks to their exceptional culture.
- The Foundation took on the coordination of processes for collection, drop-off, and distribution of donations; they did an excellent job managing how the community stepped up.
- The Foundation ensuring that the Manor received food and supplies was so meaningful.
- HR did so many things behind the scenes.
- Marketing/PR did a beautiful job.
- Marketing/PR was very helpful in getting the word out.
- Marketing/PR stepped up quickly and did a wonderful job fostering relationships with the media. We got as much if not more coverage than the big systems, and it was so important to help staff feel appreciated.
- Pharmacy traveled throughout the tristate area to procure needed items; they got very creative.
- Pastoral Care connected with patients/family/staff through iPads/smartphones and sent out positive affirmations for staff each week.
- Care Coordination worked with the Foundation and Gary Triolo in Food Services to provide patients with care packages/food to bring home at discharge.
- Admitting did a terrific job staying ahead of patient placement, working with clinical areas, and developing reporting tools on the fly.

- Gaye Werblin started stats reporting very early to turn real-time data into trends and demystify rumors so staff had some predictability.
- Infection Control did a nice job and put in countless hours, helping us work through things.
- Karen Young Engleman was instrumental in face-to-face education that kept staff safe and informed; she also came in on weekends and went to every unit to ensure education on proper extended/reuse procedures for gowns.
- Jacquie Breuer in Infection Control was a huge help to the Manor.
- Materials Management worked very closely with Infection Control to the point where we almost become extensions of each other.
- The Laboratory did tremendous work to stay on top of testing.
- Medical staff and Jayne Craig worked to get access to experimental drugs.
- Employee Health really supported the needs of employees who were exposed; they stepped up and did around-the-clock fit testing.
- HAC/community nurse navigators/coaches helped with screening, making the process more effective and efficient.
- IT staff/Dr. Pinzon helped put things in place to communicate more easily with staff and physicians.
- Anthony Massari and his Maintenance team were spectacular.
- The Housekeeping team were the unsung heroes – they came every day knowing they could be exposed.
- The Environmental Services and Supply Chain staff were out of this world.
- Food services, PT, Wound Care all came to Sterile Processing to see if they could help.
- Food services, Materials Management, and other areas helped make face masks while they were calling in orders – it was amazing to see people from all areas wanting to help.
- The Respiratory Therapy team had a tremendous impact.
- Respiratory Therapy was magnificent.
- The Respiratory staff were heroes – they never flinched or thought of themselves.
- John Whalen and Gerard Crosbie made me proud.
- Senior services had heroes at these facilities as well.
- Toni Lynn Davis was key in staying on top of changing policies/regulations and a calm presence in leading the Manor team.
- Cathy Colker-Lutz and the Sterile Processing team came up with ways to sterilize and reuse PPE that we hadn't thought of before.
- Sterile Processing was available 24/7 for whatever we needed.
- Karen Freeman did an outstanding job keeping things together in the Command Center.
- Karen Freeman kept us focused and on task in the Command Center.
- Patient Experience/Linda McDonald delivered meals, making a huge difference for departments like Infection Control.
- Linda McDonald and Pat Quattrock from Patient Relations were the dynamic duo on the snack cart, making a difference in everyone's day.
- Telecommunications was key in getting iPhones for nurses so they didn't have to use their own.

Community support/connections

- The community responded with whatever was asked for, speaking to CentraState's relationship with the community.
- The community trusts us – they started this hospital and they take pride in the work we are doing; we could really feel that.
- Community support was overwhelming and meant a great deal to staff.
- To see how much the community did for us was phenomenal, and staff made sure all departments were supported by their donations.
- The community around us made me feel very buoyed.
- The support of the community was unbelievable – knowing we could rely on people kept us going.

- From crocs to pizza donations, community support was fabulous and a morale booster for staff.
- Even the lotion and shoe inserts made a difference for nurses.
- We asked for whatever was needed and the community responded – from baby monitors to snack trays and activities items for the Manor.
- Giving in a time of crisis helped people feel more emotionally in control, often reducing anxiety.
- Home Depot and the Freehold High School were amazing in helping Sterile Processing through donated items.

The Foundation facilitated community support well, including by:

- Setting up a COVID-19 relief fund right away.
- Finding ways to accept and use every donation offered, however small (ie decks of cards), enabling people in the community to feel like they were helping/could do something.
- Connecting donations received with needs and tracking everything.
- Organizing new processes for food deliveries when departments could not accept them directly.
- Making phone calls to acknowledge every donation (1077 monetary donations), which helped in learning stories of why people gave and the appreciation for CentraState taking care of the community. (Board members will also call in coming months.)
- Expanding social media presence to thank community and facilitate giving.

Celebrating heroes/successes

- The chimes when a patient was discharged made a tremendous difference in lifting spirits. It was so rewarding to see the staff lining the hallways waiting for the patient to come through.
- Allison Leonard, a nurse, had the idea for the chimes and marketing jumped on it. The chimes were so uplifting for nurses.
- Marketing took on a unique role in inspiring and uplifting spirits for staff, from messaging to the "Heroes Work Here" sign made in an auto shop when sign shops were closed.
- The Heroes Work Here sign had an immediate impact on staff and put a smile on everyone's face.

External communications

Marketing/PR facilitated external communications well, including by:

- Deflecting negative stories and refuting misinformation from the media and on social media.
- Working hard to cultivate and share positive stories. Positive highlights included prominent Star Ledger articles and an extensive Asbury Park Press tribute with interviews/videos of 25 front line staff.
- Navigating what was working best in the field and pursuing these marketing best practices beyond the normal scope.

Internal communications

- Communication across staff was very good.
- Various departments like IT, HR, and marketing collaborated to institute new resources to keep staff informed (the first two resources as follows were mentioned a number of times):
- Dedicated email for questions (COVIDinfo@centrastate.com). Augusta Agalaba in Quality did a great job fielding these questions to the appropriate resource for answers.
- CentraNet COVID hub on the employee intranet with information updated daily
- A weekly newsletter with high level takeaways.
- The HOPE dashboard was great, especially for keeping a focus on the positives rather than the negatives.
- Staff found unique ways to communicate information, ie even when given a waiver, the Security Manager developed a virtual fire drill to maintain knowledge when an actual fire drill could not be conducted.

Emergency Department

- Immediately separated patients in the waiting room.
- Early activation of no visitor policy and patient/staff masking was key.
- Early elimination of the use of the hallway for patients was implemented and continues as of now.
- Having private rooms with sliding glass doors in the ED was important. Baby monitors were implemented via a staff idea for the two rooms with wooden doors.
- Removed all curtains, equipment, code carts, etc from rooms.
- Designated an iPhone kept in a changeable plastic bag so the patient rep could coordinate connecting with families.
- Worked with the IT department on tools to identify PUIs by building screening into the triage/computer system.
- Worked with the Monmouth County OEM and the IT department to operationalize a tent outside the ED early on – it wasn't needed in the end but it was ready to go.
- The meeter/greeter and triage nurse wore full PPE from the start.
- Centralized PPE into one locked clinical leader office, and two people stocked isolation carts for distribution, reducing missing supplies.
- Implemented social distancing in staff lounges, with only four staff allowed at once.
- Took the opportunity to use UV light to sanitize rooms often.
- Eight agency nurses and Helping Hands from the PACU/OR worked very well.
- With mobile cardiac monitors we had, we were able to send patients up to the floors and monitor them remotely from the ED.
- Nurse managers/directors came in on weekends to provide administrative support during a time of changing needs – this presence was important during a time when everyone felt isolated from the world.

Nursing

- When we were initially short on help, telemetry and critical care nurses stepped up to titrate drips and ease the burden in the ICU.
- Cross-training telemetry nurses to take care of stable patients helped – some stable patients were moved to telemetry to ease up beds for more acute patients.
- Having agency staff was critical (see other section).
- We did a buddy system with safety checks before entering a room, to be sure each person was properly protected.
- There was a buddy system between nurses and techs when someone was in the room, so there was always a runner outside.
- Having food sent in from the community made such a difference for support and also in saving time – we didn't have to go down to the cafeteria.
- One nursing director worked 3-11, which helped with support and consistent messaging for staff across shifts, and nurse managers took turns on weekends.
- Daily updates from Cathy Janzekovich available in the nursing office made staying in the loop much easier, especially for the night shift.

Respiratory services

- Working on the staffing end very early and bringing over pulmonary/agency staff got us through, along with a full-time transporter about to graduate in May (now employed by respiratory).
- We were fortunate to be given 15 ventilators through connections with MONOC and the Monmouth County Sheriff's Department via Laurie Gambardella.
- 14 vents loaned by the state were on standby. We never had to use them; at the peak, 35 vents were in use at once.
- Worked with Materials Management to get many orders in early on for the disposable parts of the ventilators.

- Encouraging staff on the early use of N95-level masks during any encounter for aerosolizing procedures was an added safeguard; respiratory staff were with patients 24/7 and only two staff were hospitalized during the crisis.
- Targeted education and donning/doffing training provided by Infection Control also helped keep infection levels low for respiratory staff. It helped remind staff not to take any shortcuts, especially when the need for intubation could happen quickly.
- Worked very closely with Dr. DeTullio, Dr. Matera and Infection Control to ensure the best protocols for safe interventions, what would work best to prevent intubations, and how to get the highest success rate for those intubated – this made a difference in positive outcomes.

Material Management/inventory/sourcing

- Received hundreds of nontraditional PPE/supply leads from those trying to help solve inventory needs (ie from the community/Foundation, Board members, leadership), vetted them all for quality at all hours and made quick decisions on buying before they were no longer available.
- Worked closely with Infection Control to test new PPE and assess donning/doffing difficulty levels; created utilization policies that often needed to be different depending on the product and location of use.
- Implemented a new inventory distribution process that probably contributed to getting us through with PPE. Goals were to avoid loss/theft and misutilization while reducing fear among staff. The team stratified PPE need by patient type/status and delivered it to bins outside each patient room three times a day. Between COVID+/uncertain patients, at its highest point this involved delivery for 162 patients three times a day.

Sterile processing

- Created smaller intubation bins for patient rooms early on to reduce the amount of necessary disposal of single-use items – this worked so well they are being used moving forward.
- Staff made 1000 face shields in one day use laminate sheets, laminators that were loaned, rubber bands, beads, and weather stripping donated from Home Depot. A collaborative assembly line was created with help from various departments throughout the hospital.
- Facilitated a system for extended use and sterilization of masks so that staff would feel comfortable; sterilized over 4,000 masks. Used an exchange system with ID numbers on each mask; masks came down in brown bags and went back up in white.
- Worked with Facilities/Housekeeping to ensure staff knew proper UV sterilization techniques.

IT infrastructure/tools/reports

- IT and Patient Access created many valuable dashboards and reports, including for the Command Center/leadership, on parameters like test kits, supply shortages, risk stratification for patients, staff exposures, etc.
- IT spun up technology infrastructure while keeping its employees safe and efficient at home. Examples:
- Added four remote servers and 100 remote user licenses
- Acquired more zoom licensing to enable web conferencing
- Put telehealth (Noteworth) in place on a week's notice
- Maximized ability of Noteworth for employee screening and symptom tracking
- Were midstream on installing tele-intensivist capabilities, so in the interim purchased 50 iPads, set them up on the network, and trained nurses to enable intensivists to communicate with the floors remotely
- Trained new providers/locums on CPOE, documentation; onboarded into system
- Facilitated system-level changes like EMR color coding for COVID status
- Built COVID hub on intranet to centralize staff communication
- Built eBook guide for physicians and COVID response team

Lab/testing

- Began looking at testing processes as soon as COVID was discussed.

- A team (clinical services, lab, Emergency Department, occupational health, CMO) worked together to review and establish testing priority and revisit/adjust when needed, which worked well.
- Had received approval from the state on 2/28/20 to implement a test that was later needed to rule out other viral diseases in testing patients – not all hospitals had this.
- Began validation process quickly (splitting samples sent to state and validating in house to compare results)
- John Gribbin, Congressman Smith, and his chief of staff were integral in creating connections that facilitated certain test supplies and Quest results.
- The emergency use approval (EUA) to use the PCR machine to test in house facilitated quicker results, knocking down the number of PUIs faster, helping with decision-making, and enabling patients to be placed/treated more quickly depending on whether they were positive or negative.
- The majority of the phlebotomy staff were terrific in their willingness to don PPE and draw COVID-positive patients.
- Dr. Paul Simon's leadership supported the team; he kept staff calm and weeded through all the changing information to determine what was relevant.

Environmental services/sterilization

- About 80% of the EVS staff stepped up and went above and beyond; there were shining stars we didn't know existed.
- EVS knew the right cleaning techniques already; education about their safety was more of a focus and we took every measure possible to ensure their safety.
- Infection Control's support was very important and included on-the-spot training for donning and doffing PPE.
- The foresight of having a UV light system was critical.
- Staff did a good job conserving/using products to the longest life possible.
- Good procedures were put in place, such as creating a EVS COVID response team so that only certain staff cleaned critical care rooms, and developing a guidance binder for leads on weekends.

Pharmacy/treatment access

- Were creative in problem-solving and bypassing the usual resources that were lacking inventory, including going to local pharmacies, traveling out of state, and direct sourcing from pharmaceutical companies.
- In one case, the need to bring on a non-contracted wholesaler resulted in better pricing that can be utilized moving forward to save money.
- We qualified for the remdesivir extended use program, which not all hospitals have; this resulted in positive outcomes when given to patients at the right time.
- In addition to working closely with the COVID team overall, Pharmacy worked with Dr. Kudipudi to enroll patients in the remdesivir EUP.
- Pharmacy staff stepped up to go out on critical care units and to the ED.

Finance planning

- Sought various opportunities to bring in funds to mitigate financial damage/drain on cash flow.
- Ensured thorough understanding of financial relief opportunities and applied as appropriate, securing financial relief.
- Stayed on top of government programs, ie Heroes Act, and made sure we were appropriately represented.
- Physician practice management also separately applied for/took advantage of available resources (ie CARE Act, small business loans, CPC+ advanced payment model) to support owned practices.

Senior service facilities

Overall:

- The situation was challenging for those with memory loss, but with two memory care facilities (Monmouth Crossing and Applewood), we were able to separate those testing positive from those testing negative.
- As the state is catching up with mandated reporting, perhaps outcomes at our senior facilities were better compared to others than we thought.
- This crisis was a case study in why it's valuable to have senior facilities under our umbrella and a link between

the acute care and senior care industries. It was important for senior facilities to have the support of a hospital, particularly as it related to infection control expertise and PPE.

- Being under the hospital umbrella reduced stress related to getting test kits, labs, etc.

Specific to The Manor:

- Being part of the hospital system helped; strong hospital support was key.
- Had a pandemic plan in place and constantly reviewed all guidance as it related to senior services.
- Great teamwork, especially when over 65 staff members were out – Manor administrative staff jumped in to take on these roles, and the hospital nursing and Environmental Services departments trained and sent over agency staff.
- The Administrative Certified Nursing Aide (CNA) program proved very beneficial – admin staff who had been trained as CNAs saved them from a staffing crisis.
- Took early action to cohort and monitor new admissions by creating a step-down unit, which provided the ability to isolate new admissions for 14 days before moving to the general population.
- Centralizing PPE/cleaning supplies in a lock closet helped ensure a consistent supply; this system is being used moving forward.
- Used virtual tools and window visits to maintain connections to family.
- Director of activities worked with Maintenance to create a visitation station – a safe, socially distanced outside cubicle for visits with family.
- The Manor was equipped to take on Monmouth Crossing residents.
- Patients and residents handled the situation well given the circumstances.
- Kitchen staff were great in coming up with safe protocols and systems.

Specific to Applewood:

- We created a separate space for those with COVID-19 (at first the memory care unit, but then the healthcare area with skilled nursing expertise, which worked much better)
- Residents handled the situation very well as they've built relationships with and trusted the staff.

Specific to Monmouth Crossing:

- When daily email updates weren't sufficient, created a large message board to communicate changing information was a great help in keeping staff up to date.
- We were able to isolate residents quickly.
- The activities manager (Rhianna Zalewski) was helpful in trying to keep residents in good spirits.

Working remotely

- Working from home kept people safe and in some cases more productive. Examples: IT, physician practice staff, care coordinators, HR team members did very well/stayed safe working remotely.
- So much can be done virtually – from telemedicine to interviewing, hiring, on-boarding staff, and holding large orientations.

Families/visitors

- While sad, the no visitor policy was done well by the hospital and was a positive in many ways:
- Having to explain information to visitors would have caused extreme stress for nurses who were stretched thin caring for sick patients during the height of the pandemic.
- Having no visitors was important for prevention and meant one less group to worry about for Infection Control, so they could focus on patients and staff.
- The use of iPads/iPhones helped maintain connections with families. Caregivers went above and beyond to facilitate this.

Early cases made an impact

- We were hit hard early, which probably helped us in the long run.
- We had to jump right in – there was no time to overthink things.
- Dealing with an index case helped us realize how important the cluster was to the whole COVID process – a sobering moment.
- Having early patients helped demonstrate need for the remdesivir extended use program.
- As one of the earliest hit, we didn't have the luxury of learning best practices from others; we needed to figure it out. There was no guide and no map.

Little things made a difference

- The afternoon snack cart coordinated by the Foundation/Patient Experience was a great pick-me-up/motivator for staff – they looked forward to it every day (this was mentioned many times).
- The best thing for nurses was the Patient Reps coming with the afternoon carts – what a boost of morale.
- Meal deliveries to departments were great. Nursing helped ensure that donations to them got to each department.
- People were overwhelmed, but they still did things like deliver balloons and cards to other departments, making areas like Infection Control feel supported during challenging times.
- The personal recognition on the COVID calls of how departments were doing helped keep people going.
- Positive affirmations from the Volunteer Department/Pastoral Care helped (mentioned several times).
- A local pastor coming to each unit with uplifting words was appreciated by staff.
- Staff thanked each other, expressed concern for each other, and were quick to give wishes for safety, which helped people through the rough days.
- It was amazing that nurses asked how I was doing (as the head of a support department). It just shows you what good hearts these people have – they're natural caregivers.
- Local kids/schools sent pictures and letters that were posted on the walls on the way to the cafeteria.
- Seeing "thank you" written in chalk on the sidewalk really helped me get through a difficult day.
- The ED put together a board of photos of staff with the community donations.
- The ED brought snacks to another hospital ED and vice versa.
- The Sterile Processing team wrote notes of hope and courage on the face shields being created for staff.
- Dr. Matera's daily emails included a brainteaser with three songs that had a common link to be determined – the levity was therapeutic and further engaged recipients in reading the content.

Documentation

- Many departments have tracked everything/kept binders for future reference, created new surge plans, etc.

What Could Have Been Improved/What to Examine Moving Forward

Often, comments were paired with the acknowledgment that hindsight is 20/20.

General

- In the midst of crisis, we developed insight as to who you want standing by your side/who you can rely on/who you can count on. (reiterated a number of times)
- We need to better operate as an overall system than in silos – having specific crisis plans in place for all facilities.
- We may never be able to understand the risk of the virus vs. the risk of staying closed, which is mounting. We need to examine this balance.

Earlier action/preparation

- Would have helped to have begun putting processes in place as soon as we knew China was facing a crisis that was likely to spread.

- Social distancing practices among staff/leadership could have started earlier, before it was mandated (ie masks, staying farther apart in initial meetings).
- Consider overall ways to be more proactive than reactionary. There's always room to improve when we're in react mode.
- Some owned physician practices were not prepared for such a contagious virus; it was challenging to put CDC safety measures in place so quickly.
- We're better prepared for another surge, but still there are a lot of unanswered questions about this pandemic.
- We should have sounded the bell to open the Command Center a week to two weeks earlier – there was some lost planning time and this would have led to less scrambling.
- Drill a pandemic as a table-top exercise before a possible fall surge – go through it again, play out scenarios, etc. Practice will increase comfort level.
- Much more disaster response education specific to a pandemic prior to the crisis hitting would have been beneficial, including who does what and who is in charge.
- It was amazing that we could go from a state of normalcy to a state of chaos so quickly.

Supply chain/sourcing

- Looking ahead, we need to be more proactive than reactive with supply chain issues.
- Need to examine where we are sourcing items from.
- If supplies are coming from an area that's hit by crisis, it can be crippling – need to ensure more diversity in where supplies are sourced from.
- While we could not have predicted this level of need for pandemic inventory, there were also no next steps – the crisis hit first where most PPE was being manufactured.
- Pharmacy wholesalers were not prepared for a radical emergency and seemed to have a lack of urgency. Getting creative to find solutions helped, but going directly to the source often involved more steps.

Resources/resource allocation/inventory

- Over the last 20-25 years, we've stripped out so much redundancy (overbedding, too many services, just-in-time inventory) that we don't have resiliency. We cannot quickly respond; this is something to examine moving forward.
- We can't afford to be running with three days of supplies; as a country we learned we need to change the workflow.
- There were close calls with ventilators and PPE availability; we weren't really ready for a true pandemic. Examining resource allocation can help us be more prepared.
- The situation made it very clear that just-in-time inventory won't work.
- We had pandemic inventory, but we never went through the exercise of examining what would be needed at the individual patient level – doing this was a great educational experience. Just based on gowns, the number jumped from 800 on a normal day to 3520 rounds of PPE a day during the pandemic.
- While acquiring and storing resources is expensive, we need to find a happy medium and keep a much larger supply of PPE.
- We needed a head start on ordering PPE, but no one thought it would get that bad. It's hard to prepare for the unknown – even for what's to come in the fall.
- We identified that we need a storage space for stockpiled inventory; we need to be very astute as to what inventory goes there and how long it will last.
- The plastic on disposable items can break down, so a climate-controlled storage area is needed to maintain product integrity.
- We need to examine other supply levels to determine whether greater inventory is needed in a crisis and determine what defines an adequate supply. Examples include surgical supplies, feeding pumps/tubes, ventilator/respiratory supplies, IV pumps, dialysis cycler sets, cleaning supplies, etc.
- We didn't have the circuits for the vents loaned by the state and didn't get them until after the height of the crisis; thankfully they weren't needed. If we had known ahead of time what kind they were, we could have preordered in case of emergency.

- Beyond PPE, hand sanitizer was in tight supply.
- Stocks of frequently used medications needed better maintenance; nursing staff kept having to call the Pharmacy.
- We should examine all different scenarios – from massive trauma to gas exposure – and predefine what inventory is needed for each scenario.
- This is also true for software applications – examine the resources that are most helpful and invest in a bigger tech toolkit. Investing in advance can mean more robust tools.
- We were ordering from new/nontraditional sources that did not have consistent units of measurement, so these counts had to be done manually before distribution; this speaks to the need for a conversion system.
- When staff need inventory, we now know it would be beneficial moving forward to have a fallback/plan B in mind.
- Multidisciplinary insight of the Value Analysis Committee will be key moving forward.

Testing

- Testing has been and still is an ongoing struggle.
- The ability to test patients and staff quickly is an issue.
- Testing was backed up at state levels which created stress on PPE, patients, and caregivers and resulted in some lost opportunities to treat earlier.
- Quest/reference labs were overburdened and had a 10-day+ wait time for results.
- We're still dealing with testing shortages. As a nation, we were caught short-handed.
- There were severe shortages on testing across the board – maybe something to be learned on examining stockpiling.
- We need the ability to run testing at night now, not to mention in another surge; otherwise we are holding patients and delaying care.
- If enough testing were available, it would be better to test all patients coming in as some could be asymptomatic – this would help ensure the proper use of PPE and eliminate exposures.
- Support from the OEM was not sufficient in the beginning.
- There is a nationwide gap in knowledge on what constitutes testing supplies – labs need the test kits but also reagents to conduct the tests; we are very short on the latter.
- Mandates for nursing home and presurgical testing are putting further pressure on availability and could hold up surgeries.
- Need to examine how often you test and how you address costs/invest more in the future.
- Need to ensure physician education on retesting.

Anxiety about safety/PPE

- The staff were not prepared for a pandemic; while most stepped up, there was a lot of fear that contributed to staffing shortages/some people leaving/not coming in.
- Some people ran into the fire, and some ran away.
- We tried to keep everyone calm, but some days were pretty dark.
- The fear of the unknown was difficult; many staff were so scared.
- There was a continuing need to rein in information and calm fears.
- Need to focus on education to better manage expectations/distill fears among staff during a crisis.
- Perhaps needs in a pandemic should be brought up during the interview process to gauge expectations.
- Needed better/more regular education of staff that the PPE they received met CDC/DOH standards for each application and that they were getting the best protection possible.
- Multiple staff members were getting sick, perhaps because they were told not to use N95s at first, which may have related to CDC guidelines. Consider allowing the use of N95s when the staff wanted them/more consistency in the level of protection.
- Reuse of gowns stored in a gown room and walking down the center of the hall to avoid touching anything was concerning; the buddy system for donning and doffing reused gowns wasn't always realistic and there

was a concern for contaminating the environment (ie, when using a computer in the hallway).

- PPE storage should more secure to further ensure appropriate use and distribution.
- Fear led to some missing supplies in some areas (ED masks, Manor cleaning supplies and gloves) before they were centralized. Consider better control of supplies earlier.
- Use of nurse PPE supplies by others coming onto the floor was stressful, especially when nurses were needing to reuse masks and some physicians were not going into the rooms.
- We need to better protect the supply and be more consistent about reuse – act like it's your last mask.
- It seemed like the ED should have had earlier use of plenty of PPE rather than a similar number of masks as departments not on the front lines.
- Because we took such protective measures for EVS staff, scaling back while still adhering to CDC guidelines will require education that they are still safe.

General internal communication

- More frequent video messages from leadership to staff would have been helpful and appreciated.
- There were regular communications from leadership who were working 24/7, but staff also craved more of a visual presence for comfort; for example, would have loved to see more of the leadership team at the police/fire salute, which was very moving for staff.
- The executive team was very visible on the operation side, but staff didn't see them as much as they would have liked, particularly on off-shifts/nights.
- I knew leadership was there, but the staff needed to see more of Mr. Gribbin and Tom Scott – or even have a recorded message once or twice a week.
- Beyond emails, better visibility of administration, such as regular walk throughs, would have been meaningful to staff.
- Overall internal communication showed a hole at first as rumors and fear were running high; this later improved. The key to any situation is getting internal communication set up right away.
- During a crisis, there is a great need for dispelling misinformation, including among staff, in the community, and on social media.
- As information changed so quickly, we need to better consider how to present a change in information before sharing it with staff to avoid skepticism.
- While communication tools were good, more was needed. Frontline staff didn't have time to check their email/intranet so it was hard for them to connect the dots with information changing throughout the day; this brought up credibility concerns and the task of keeping staff constantly updated fell to department heads, which was a burden.
- HR needed a greater presence on the floors regarding mental health resources and other information since caregiver staff did not have the capacity to check emails.
- Because staff had little time to check email/the intranet, consider an immediately accessible, real-time system or tool to highlight what relevant information was changing, such as a mass notification text system (ie push technology).
- Environmental Services staff have a comfort level with meeting as a group, so individual communication during social distancing was more difficult – push technology would have helped them.
- At first, rumors and negative information was rampant so we needed earlier validation that our efforts were working – ie, it would have been great to have started the HOPE dashboard earlier.
- The message from Mr. Gribbin that noted the death of a Manor employee due to COVID-19 also said "but we don't know where he caught it," which was upsetting to staff as it seemed to demean the loss.
- Department director meetings were cancelled; keeping these would have contributed to helping keep staff informed.
- We should have continued to have nurse manager and department head meetings to ensure we were all on the same page with more consistent communication of needs – it was hard to pose a question on the COVID calls.
- It would be useful to have another town hall with Dr. Matera so he could share his perspectives on what was done well.

Command Center process/communications

- Would be helpful to better formalize and follow policy structure for Command Center and which personnel should be involved/be in charge.
- Amend whether the Command Center is a physical space or not for everyone beyond a core group.
- COVID huddle calls sometimes only had operational staff; it's important for all executives to be participating across the board so we're hearing the same things.
- The whole executive team should have had a greater presence throughout the crisis, not just those responsible for clinical areas.
- Evaluate who was on daily COVID huddle calls, especially the first one; consider streamlining to get more done.
- Sometimes direction/decisions made in the broader meeting changed during the smaller one, which could be confusing to those not in the smaller meeting.
- There were too many COVID huddle calls; we need a more efficient process to collect information, strategize, and implement so meetings are less of a time burden for leaders.
- Look at making COVID huddle calls more collaborative/less putting people on the spot.
- Some individuals were in a tough position on the firing line; we could have supported them better. We need to think ahead/evaluate whether we are underinvesting in any key positions or resources.
- When processes were changed late in the day (ie 4:30 p.m.) when staff were going home, it got confusing – consider implementing these late changes the next morning.
- Find the delicate balance for a legal presence that still enables us to be nimble while providing legal/risk information to help people better understand the big picture.
- Create online dashboard on shortages and barriers earlier; it's easier than verbal reports in helping recognize needs at a glance.
- Consider restarting monthly COVID meetings to anticipate fall needs.
- It would be helpful to develop a detailed chronicle to use as a reference for next time, ie when to open the Command Center, etc.

Work processes/staffing

- Reassess how to handle labor in general; some workers became patients.
- Consider ahead of time how staff might be personally impacted by a crisis (health issues that put them at higher risk, children at home needing care, etc) to better anticipate and plan for crisis staffing needs.
- Consider an overall framework/policy specific to pandemics on who is considered essential, and what part of staffing considerations should be department-based.
- We were so thankful for Helping Hands, but you never knew how many you'd get on any given day – need to spread out the help more, and have more help on weekends.
- The night shift does not have as much support on a normal day; with COVID admissions happening at all hours, we should have been better prepared to provide earlier support and higher staffing levels at night.
- It would have been great for the ED to have Helping Hands on weekends.
- More Environmental Services staff were needed.
- Knowing the areas we'd be short (ie CCU), we should have hired agency staff sooner.
- Nurse/patient ratios became very challenging at the beginning; consider staffing ratios/hiring agency staff earlier.
- Consider that there will be call-outs when bulking up staff.
- Departments that don't normally interface as much (ie ED and anesthesia) were working together and hadn't anticipated the difference in styles/routines; it would be beneficial to build a better understanding overall of how different departments function.
- Some processes were bypassed, ie the IT work request onboarding process, as everything was being handled as an emergency. While understandable, the downside was some wasted time/energy – sometimes tools that were created were not needed by the time they were ready.

Physical facility considerations

- Windows are needed on med-surg floors so staff can see patients when doors need to be closed.
- Glass doors are needed for the two rooms in the ED with wooden doors.
- The ED stopped using the hallway for patients but now that volume is increasing this issue may present itself again – consider other ways to accommodate increased numbers of patients given the layout of the department.
- Look at building considerations we never thought of before – ie we quickly learned the importance of windows and negative pressure areas.
- Not having enough negative pressure rooms cost time in the cleaning process and made it harder for staff to keep up.
- Examine what useful technology is out there beyond negative pressure, ie air purification systems, bipolar ionization, HEPA filters, UVC light.
- Examine the physical spacing of our work environment so we are better prepared for social distancing in the future.
- Examine how to better streamline screening at entrances during the reopening phase. There are so many doorways to address, which is challenging.

Patient care/telemetry

- Needed more telemetry (being addressed now)
- Need to determine how to expand telemetry and monitoring. With two monitoring techs, we could realistically only monitor 100 patients.
- Putting vents on telemetry, while helpful at first, did not turn out to be a good idea due to the lack of visibility with wooden doors.
- Keeping track of which telemetry monitor was where was extremely frustrating; assigning them to rooms will improve this process.
- We need to reexamine the appropriate space and the right people taking care of patients for the number of patients we had.
- Each day nursing had to cohort/move patients to ensure empty beds, even on days when there were already open beds. This was a dissatisfier for patients, challenging for nursing/environmental services, and sometimes created dirty beds when unnecessary. Gowns and masks were being reused in different rooms during this process. Need to rethink this process.
- Earlier proning of patients before they were ventilated on the floors may have helped.
- Having no curtains between critical patients was understandable for visibility, but this was a challenge for privacy/toileting.
- When patients were moved to oncology, these private rooms only had one phone, call bell, and television – a safety concern and a dissatisfier.
- End-of-life discussions came to the forefront, and too often at the end of life. It would have been better knowing the wishes of patients and families/planning ahead in palliative care. Beyond the pandemic, we need to improve our palliative care approach in the future. (note that new palliative care APN is being hired)

Family considerations

- At first nurses had to use their own phones to connect with families; it would have helped to designate non-personal devices earlier.
- Consider a better system for communicating with families, ie designating a nurse, social worker, or patient rep to have certain regular times to videocall families.
- Assigning a person as a liaison for calls to families would decrease delays in communication and free up nursing time.
- Send both iPhone and android directions for using the app to families early on, so they are not trying to download an app in a moment of crisis.
- With the no visitor policy, a better system was needed to track personal belongings in the ED and other areas.

Physician relationships/empowerment

- Some rose to the occasion, and some fled. Overall, examine what we can do for physicians to feel more secure.

- Some physicians would not come to the unit/go into patient rooms yet relied on nursing staff assessments. It was a disheartening message that it was fine to expose nurses but not physicians.
- Look at what we can do to empower and better engage independent medical staff.
- With most physicians being independent, it's harder to build consistency.
- The hybrid medical record/resistance to full EMR was exceptionally challenging during the peak – with part paper medical records it became impossible for more staff who are in close cubicles in house to work from home, and phone orders took a lot of nurses' time.
- We need to increase the use of EMR on a regular basis.
- We can no longer delay setting standards for how physicians operate from the administrative perspective. Locums adapted immediately; our physicians can adapt, too.
- We need to have a reciprocal relationship with physicians, not one-sided.
- Come up with new ways to better nurture and develop collaborative leadership.
- Consider propping up those we have, and/or recruiting a higher level of engaged physicians.
- Identify up-and-coming physicians with high potential earlier/cultivate physician champions.

Telehealth/virtual tools

- Being late adapters of telehealth put us in an uncompetitive position until it was up and running. Still need to institute 24-hour service in telemedicine.
- Should have had telehealth already; would have been better prepared and able to take more time to select the vendor.
- Ensure that there is better utilization of the system by physicians and patients now, so that in times of need they can continue care remotely.
- In some cases, there was a lack of interest among staff in learning virtual tools like zoom; we need to engage employees further.
- Telehealth should have a role moving forward and be weaved into patient care as appropriate.
- Telehealth became very important and should be looked at more closely for continuing use.
- Telehealth has a valid role in specific ways, but payors must recognize it as reimbursable.
- The bridge is now up – we need to figure out the best ways to use it moving forward (ie chronic care/Medicaid follow-up, etc).

Infection control

Staffing shortages in particular led to challenges. Things to consider for the future include:

- Better support/staffing to disseminate information, education, and training – did not realize how much we needed.
- A well laid-out plan specific to Infection Control beyond the overall pandemic plan.
- Clerical support (ie phones, copies, signage) and support for day-to-day Infection Control operations (ie mandatory CMS reporting) that are still necessary when staff time is absorbed by a crisis – Helping Hands were great, but more was needed.
- The ability for the limited staff in place to take time off to reenergize.
- All employees need to be able to see and talk to Infection Control; there weren't enough staff for a sufficient visible presence.
- More consistency was needed, particularly as there was staff turnover.
- More consistent rounding was needed, especially with so many questions and changing information causing confusion.
- Empower Infection Control to better prepare the facility and staff to respond to biological threats.

Other infection control considerations:

- Some staff mentioned they were glad to have had training and education throughout the years for a foundation of knowledge in infection control, but some of the CDC guidance went against the grain of what is normally taught for infection control measures. This led to the need for reteaching as well as trust concerns among staff. Consider ways to sustain trust so that staff feel protected and supported.

- Would have liked support from more infectious disease physicians.
- Training to communicate to scared staff – we diffused anxiety as best we could.
- Expand day-to-day focus beyond hospital-acquired infections so we are better prepared in the future.

Financial considerations

- The crisis put a tremendous drain on cash flow (closing outpatient services and for-profit business, joint venture impact). Consider having line of credit in place in the future.
- In a crisis, economics becomes second; the focus is on getting the resources patients and staff need. Moving forward, will make sure we refocus in on finance/figure out implications.

Working remotely

- Examine how working remotely can best fit into the picture moving forward.
- For HR/hiring, there are a lot of opportunities that open if more individuals can work from home – it opens the recruitment base to a greater pool to choose from as you can source certain positions from all over the country.
- Create some overriding consistency in a remote work policy could address some dissatisfaction in who was/was not able to work from home, while still leaving some determinations up to departments.
- It's more challenging to promote safety messages for patients when some staff are still working from home.
- There was resentment among staff about which departments could and which couldn't work from home.
- There were mixed feelings about working from home; staff not on the frontlines who worked from home may have been able to support departments in other ways if they were in house.
- Examine policies and procedures so that staff have the resources to work from home when needed.
- Overall, working from home went very well but there were a few questionable instances.
- While previously not a proponent of working from home, it has merit with the right organization/structure and connectivity protocols. It became a necessity for safer social distancing and we rapidly determined flex work schedules. It can be important to reduce our physical size to make room for expanded clinical needs.

PTO policies/messaging

- A blanket PTO suspension was understandable based on operational/staffing needs, but in reality it was very difficult for staff who needed a day off to decompress. Leaving some discretion to the department heads, who know the pulse of staff needs, may be better physically/mentally and result in fewer sick calls.
- Staff perceived rules changing with regard to PTO/EIB – we should re-examine how time is allocated during an emergency and ensure consistency.
- Sort out/better manage this messaging; it required a tremendous amount of communication.

Concern about accommodations

- The decisions surrounding accommodations caused some consternation/hardship among nurses/staff.
- Changing government guidelines around policies like whether childcare needs qualify for family leave complicated things and in some cases rehiring was needed.

Burden on staff

- Staff working seven days a week with no relief was difficult, but everyone was in the trenches together doing their part.
- To see what was happening and have to come back to work every day was very difficult.
- The first two months were so hard on the staff – we tried to be here too much on the front end to the point where it became all-consuming. Figure out how to stagger/balance better/earlier.
- The first few weeks were particularly hard on staff, who were working 24/7. By the third week, we began to better manage the well-being of the team – look at how that can be done earlier.

- There was a tremendous strain on the workforce with everyone working nonstop on adrenaline – need to be cognizant of this as we try to get back to a more regular pace.
- Perhaps hire agency staff earlier during a crisis to reduce burnout.
- Staff were exhausted and dealing with tough situations both at home and at work; they handled it, but it was heartwrenching and they saw a lot of death.
- It was terrifying for nurses to have to learn how to use telemetry, new vents, etc. during the height of the pandemic – an opportunity to examine skills education moving forward.
- It was difficult for staff across the board to be pulled from their area and placed in a different realm of care; we should think about having an education plan in place to facilitate this and around the clock support for them.
- There was so much fear with the first ventilator patient, but staff excelled after the initial shock.
- The first patient death came as a shock to nursing staff, who were all very shaken – we had never gone through anything like this.
- When we saw the first cluster of patients from the same family come in one after another so sick, we thought we were all going to die.
- When staff started to get sick, it was really hard – when you're trying to take care of others, it doesn't seem right.
- It was hard to see so many staff crying; it makes you feel helpless. This was really draining for staff.
- If there was a possible staff exposure but no symptoms, we still needed to come in – we had to trust the science, but the science kept changing.
- Some staff were dealing with their own health issues, which made it more worrisome for them to be taking care of patients.
- It was very sobering to see the number of deaths as a marker for whether you were successful in meeting this crisis.
- Nurses noted they dealt with death more in one month than they had in five years.
- There were so many stories of nurses holding patients' hands as they were dying.
- Patients dying alone was very difficult for staff to see, as well as families who were tormented and terrified.
- Patients who were very sick without the ability for family to be there was devastating for staff.
- It would be very difficult mentally for staff to go through a second phase.
- Applewood staff had a very hard time losing residents with whom they've built relationships over many years.
- Consider additional little ways to support staff, ie free coffee.
- Consider monetary bonuses during times like these when staff lives are at risk.
- There was resentment about not having any additional compensation with lives at risk, particularly when people throughout the country were collecting unemployment beyond their normal compensation and other hospitals were providing additional compensation for staff.

Planning for behavioral health needs

- Emotional/mental health support for staff was available but needs to be an earlier and stronger priority. Staff were dealing with so many issues beyond work (childcare needs, concerns about bringing the virus home, schooling, grocery shopping, etc) and they still showed up.
- Need to be prepared for and aware of mental health repercussions and encourage staff to use the resources available to them (including Nannette Spedden/chaplaincy efforts/Tracey Saliski and HR wellness programs).
- Staff needed behavioral health support but in emergency response mode did not have the time to avail themselves to it.
- I feel like we haven't even seen the first layer of damage – there will be a lot of PTSD.
- It's hard for people to take that first step to ask for help but we have great resources in place.
- It's important to take time now to reflect and practice self-care. The window we have now may be short before we see this again, and we need to deal with the emotions now before we get to a place it's hard to come back from.

- Psychiatric patients coming in to the ED who were asymptomatic and tested positive had to shelter in the ED for 7 to 10 days because they weren't sick enough for COVID care but couldn't be sent to the psychiatric floor – consider how to accommodate these patients safely.
- A temporary psychiatric nurse was helpful in the ED – a permanent presence would be even better.
- Plan better for psychiatric patients who avoided care during stay-at-home orders and now are coming in – capacity is an issue.

Senior service facilities

Challenges at The Manor included:

- Nurse leaders taking care of patients were among the first to get infected.
- There was an EVS staff member death, and most of the rest of this area tested positive. This also created greater fear.
- 65 staff were out all together at the high point; 56% of whom were COVID-19 positive.
- Not having enough testing affected staffing/impacted the ability for them to come back in a timely manner.
- Some per diems were not coming in; everyone needs to be considered essential in a nursing home.
- Not having private rooms was an issue, and with rooms close together infection spread quickly.
- Received different infection control messages from different staff.
- Mask supply was an issue, especially before central supply stepped in.

Challenges at Applewood included:

- Received inconsistent infection control messages that were more hospital-based than following senior facility regulations, which was upsetting for staff.
- At first staff needed to use surgical masks when the hospital was using N95s, which was difficult to explain.
- Need a better IT tool/reporting system; we were entering this data manually, which was cumbersome and time-consuming.

Challenges at Monmouth Crossing included:

- Trying to safeguard those in the Memory Care Unit who didn't understand what was happening.
- Fear among staff of making a wrong decision.
- Not taking earlier advantage of hospital infection control education/resources.

We could benefit from examining the response/protocols from the senior facility angle. Thoughts included:

- The pandemic laid bare what we've known for years and wish we had addressed sooner – that the elderly are more vulnerable with regard to health concerns; we need a stronger, more aggressive role in education, broader infection control, better understanding.
- Trigger infection control practices earlier/ensuring everyone is on the same page.
- Increase training in infection control practices among staff/ensure a greater ongoing presence in infection control (currently hiring an infection control practitioner with a focus on seniors).
- Ensure more frequent infection control education/refreshers across the board with staff; north side had more knowledge than south side.
- Provide better education on how protocols are different for acute care vs. long-term care, and between hospital care vs. senior services protocols, which are much more regulated.
- Needed better collaboration to set up a COVID unit more quickly at The Manor.
- At Applewood, we learned that it was best to use the healthcare/skilled nursing area for a COVID unit and not the memory care unit.
- Examine the timing on sending subacute patients to The Manor (some false negatives later were positive).
- Examine the subacute population process overall and whether patients can be isolated together.
- Look at increasing number of private rooms at the Manor – with private rooms the situation may have been better; semi-private rooms may now deter people from care there.

- Consider one point person for senior services (ie a VP of Senior Services reporting to Tom Scott) who can ensure consistency and help with policies, procedures, surveys, reporting, etc.
- Consider a point person for senior services to create a better connection with the hospital and facilitate the understanding of differences with regard to regulations, needs, etc. – this would help senior services be a better part of the conversation.
- Consider a predetermined plan for a medical director presence in a crisis to write orders for testing, etc. Drs. Matera and Raymond stepped in, but having a plan would have been helpful.
- Develop a specific plan for senior facilities on how they will respond. Examine things like having their own PPE, meal and delivery protocols, how quickly seniors should be isolated, whether they need a separate command center, etc.
- Examine whether separate purchasing requisitions could be accepted as an additional option for ensuring sufficient supplies.
- Loop senior facilities in with central supply earlier.
- Cross train all non-clinical Manor staff as CNAs through its Administrative Certified Nursing Aide Program.

Community donations

- Needed more consistency throughout the crisis on connecting donations from the community with the right end point and determining whether they were of value; departments haven't had the time to take that on.
- We can do more things virtually than we thought – not everything needs to be done in person or on paper, including with giving – think about how to incorporate moving forward.
- Ask and you shall receive – we knew this already, but CentraState as a whole now understands this in witnessing the community response.
- We should continue to broaden education that even when a gift might seem small, combined with others it can have a significant impact.

Community communications

- The ED was inundated with calls from the community/families at first until HAC developed the COVID line – put that in place earlier.
- Need to keep the community abreast of what's happening – ie daily or weekly Board updates if they are not being done already.
- We plan to connect Board members more viscerally to their roles by sharing perspectives on this experience.
- Need continued messaging about safety of care to ensure people are coming back in for necessary services.
- Keep communicating to the public the importance of simple measures to prevent spread; not everyone really understands this.

Guidance from outside sources

- The government was not prepared to handle such a large-scale emergency.
- Nationally we should have started earlier and had one overriding plan in place with specific guidelines.
- The situation demonstrated how ill-prepared we are as a society to deal with something of this magnitude.
- Recommendations changed rapidly as entities learned more by the day, making it difficult. This was particularly hard for Infection Control.
- There were so many voices ranging from the Department of Health to NJHA – it would have been beneficial for hospitals to have better streamlined communication from a state level.
- Arbitrary dictums are an issue; for example, opening up testing so that the worried well and presurgical patients have the same priority presents a problem for patients needing surgery.
- The state's handling of the situation relative to senior facilities was horrendous.
- The mandated senior facility visits by 7/31 are creating extra stress during this time when there are other care priorities.

Carrying forward collaboration, ingenuity, and nimble decision-making

- Seek to maintain the high level of coordination and collaboration among staff that we saw during the crisis.
- Cultivate the ingenuity and creativity that was exhibited – encourage staff to think outside the box more often.
- Look at people as experts and they adapt – this is not necessarily our normal way of doing things, but it worked almost as if we had done it before.
- We benefited from a broader cross section of expertise than in normal circumstances.
- Don't wait until an idea is perfect to try new things. Crisis mode allowed us to be more nimble – we need to carry that forward and embrace/cultivate new ideas.
- Collaboration and communication were the lynch pins – if this spirit can be carried forward outside of COVID to general medical care, it will improve outcomes.
- Encourage true critical thinking, which has gotten lost a bit in the computer age.
- Be more courageous in making quick decisions; don't overanalyze.
- Taking longer to adapt to change than we needed in the past may have resulted in missed opportunities.
- With COVID we had to take risks and make decisions not knowing the outcome, but we did it. It shouldn't take a pandemic for us to work that way. We can't always wait until we are 100% sure to make decisions.
- We learned that we don't need all the meetings.
- We should now be able to make decisions more quickly without needing so many approvals.
- We do too much overthinking – we know we can do it, get it done, and get it done right.
- We can put solutions into place more quickly with less overanalyzing.
- Continue to work as a group to provide this type of quality care.
- Foster the spirit of team-based care from clinicians.
- Continue to foster relationships with local political leaders.

Other sentiments (one from each person interviewed)

"This crisis brought to light the attributes we talk about in our publications – the things that make us unique and nimble all worked in our favor."

"Medicine was being created on the fly and we were learning hour by hour. The viewpoint was 'give it a shot.' It really prompted innovation that we should harness for ongoing use."

"It humbled me to know that something that you can't even see, with no brain and only genetic material, could cripple the country – it's a bring you to your knees kind of thing. It took a sub-micron particle to teach us a lesson. There is still so much to learn in medicine."

"I know that whatever comes my way, my staff will be there. I know they can do it because they rose to the occasion. Everyone stood up throughout the whole facility."

"It was a collective effort working day and night, and employees rose up to meet this challenge. Like the sign outside says, a lot of heroes work here."

"We knew we had a compassionate staff, but team members extended care to patients as if they were their own family members. Patients were not alone – our people were there."

"We pivoted quickly and jumped through a lot of hoops to get things done."

"We didn't look at this as an individual situation; we looked at it as a team and did whatever we needed to do to make it work."

"We had some nail biters, but we weathered the storm thanks to our HRO structure, teamwork, and helping hands."

"I've said to people, I wish you could come to see what's going on here. This hospital is committed to everyone in the community."

"Going through this together brought us together as a true team – there were people who stepped up in ways I never thought imaginable."

"No matter how much of an expert you are or what you think you know, you must be able to embrace change, evolve, and be flexible."

"I'm nearing the end of my career and never saw anything like this. It showed us what we don't know and strengthened us."

"You don't know what other people are dealing with and it's easy to assume when you don't walk in someone else's shoes. The experience really enlightened us on how important it is to be kind to each other and support one another."

"As hard as it was leaving your own family each day, you were going to your second family."

"It was an awakening. Putting on masks every day emphasized that we're in a new world we never expected. But humans are amazing, and we can adapt if we want to."

"We're so used to identifying problems and connecting the dots to solve them. This was like a huge puzzle where the pieces didn't fit – there are still so many unanswered questions."

"I'll never forget the look of pure fear in the nurses' eyes when a key shipment of PPE wasn't passing a test fit. We couldn't send people into battle without ammunition. I'd fly to Wuhan if I had to. We called everyone and ended up with a miracle."

"The thought that we very likely may have to go through this in the fall – and that this may be a way of life until a vaccine is developed – weighs heavily on everyone."

"There's something really magnificent about healthcare workers – when they need to step up in a crisis, they do. We saw how people sacrificed and we did not want to let them down."

"Sometimes out of challenge comes confidence. We can do it. We did do it. And we will do it again."

"Families give patients the will to live – they help them get better. They need their reason and didn't have it. That was tough. Nurses tried, but it's not the same."

"We took a stand that we were not going to let people die on our watch. But I don't know if we could go through it again. It was devastating."

"There's a big emotional piece to this. We've known our residents for years, and to lose some of them was devastating."

"I think about us in a similar way to first responders on 9/11. When you read about people not wearing masks or taking it seriously, who are they hurting? It's us."

"Patients walk in to the ED and you know what to do – but this time, we didn't know. We watched people crash and die. This experience has taken a toll on every healthcare worker. But if this comes around again, we're prepared emotionally and physically."

"This is why people want to come to us – we are a family. During times like this is when you see it."

"A day that stands out was when one patient after another began to decompensate. We all went into different rooms and did the best we could, and we were thankful there were no bad outcomes that day."

"We heard so much negativity on the news initially that patients and staff were petrified. I wish there had been more emphasis on the fact that there's a good chance you could survive."

"We were able to aggregate resources where needed. From the top down, we did what we needed to do to take care of our patients."

"I don't know what we would have done without the support and behind-the-scenes help of the Helping Hands."

"There was no such thing as a bad decision during this time – we needed to act with the information we had. Without decisions, there would be no direction, and no direction leads to failure."

"We would drive in like zombies and sometimes cry on the way, but we'd get there and say, OK, let's go. I don't know how we did it, but we did."

"We're used to uncertainty. The hardest piece of it was the personal piece. Patients had no visitors and were dying, and nurses were FaceTiming family members. The isolation was heartwrenching."

"It was hard to watch patients suffering by themselves. I would go home and hug my family and be thankful."

"We did so well with flexibility. Everyone said, OK, here's what we need to do today, and we did it."

"We changed processes and policies till we got it right – and we always got it right in the end."

III. COVID-19 Data Analytics Center

The COVID Data Analytics Center started as a simple dashboard to track our COVID cases at the onset of the pandemic and has evolved into an integral part of future planning and reflection on our past performance. The data has been maintained and collected manually from many systems by Patient Access Services. As we continued to extract data we realized there was a need to maintain statistics and distribute to our Leadership on a daily basis for forecasting and planning purposes. All statistics were shared with the CentraState staff daily and reported at our twice daily COVID meetings and Huddles. As the pandemic continued to heighten we added additional data fields that would ultimately identify numerous trends and help to formulate procedures.

This information was utilized by CentraState's leadership to identify the need for specific COVID units, additional personal protective equipment and ventilators, clusters of infection by facility/municipality, and much more. The COVID Data Analytics Center will continue to be updated and provided to CentraState's leadership on an on-going.

III. COVID-19 Data Analytics Center

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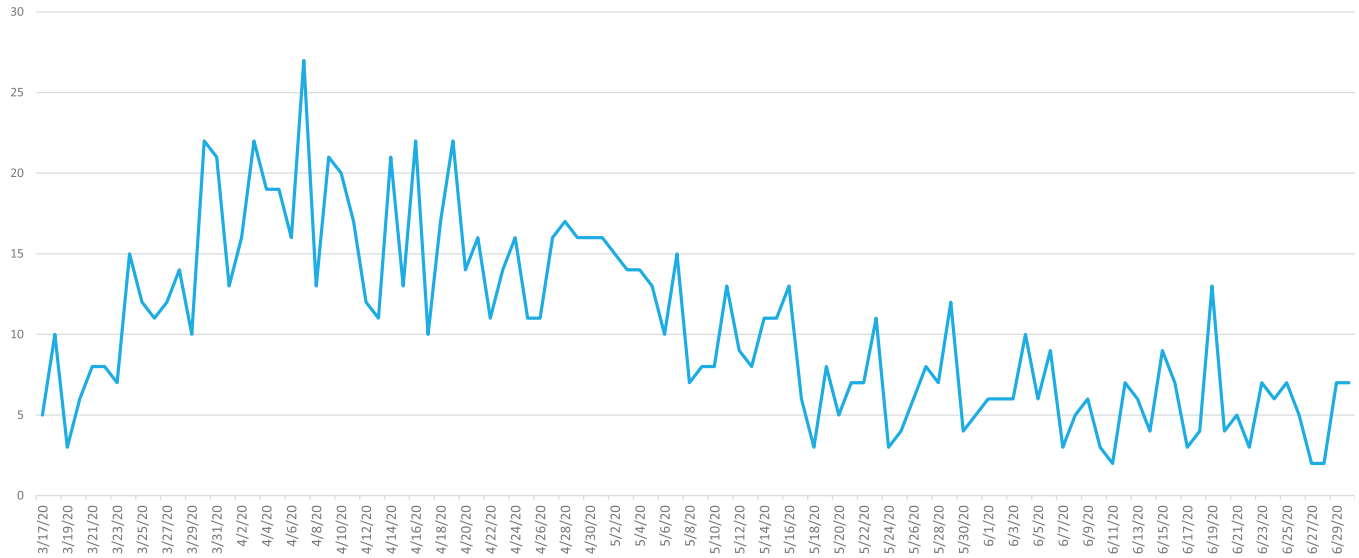
LIFETIME DASHBOARD

CURRENT COVID DASHBOARD

Total COVID Admissions through 6/30/2020: 743

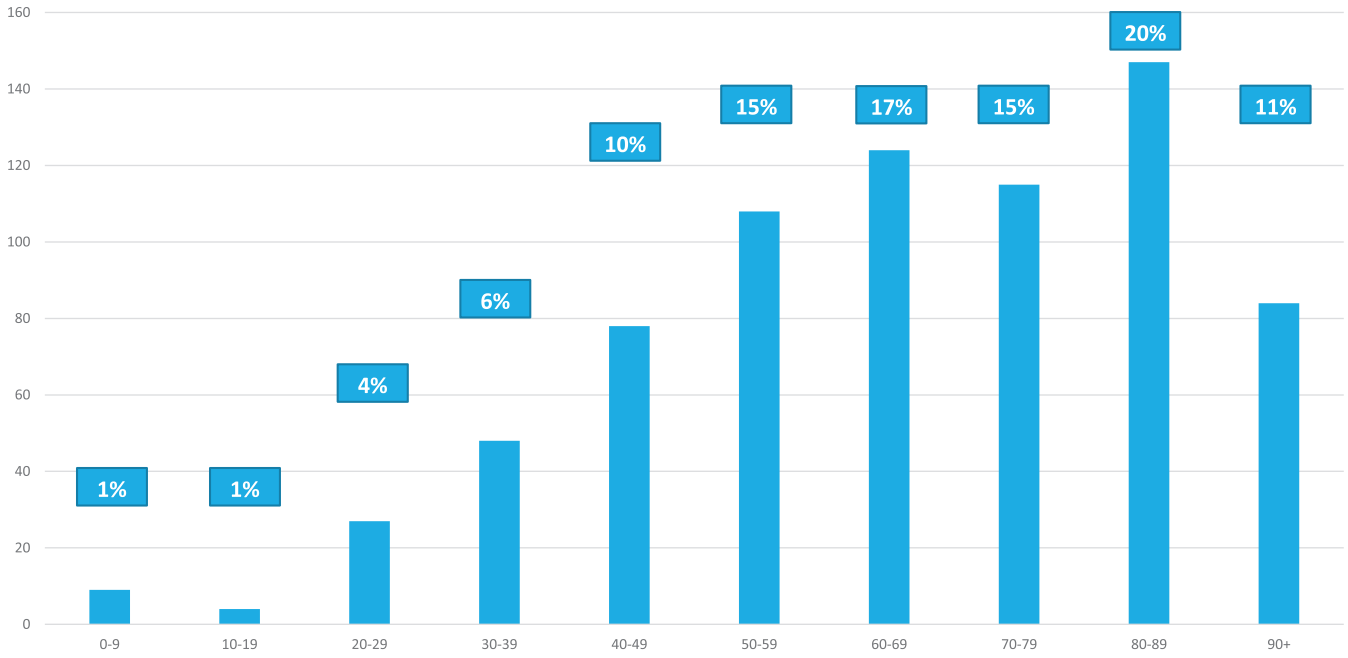
Daily COVID Admissions
3/17/2020-6/30/2020



High	**27** COVID Admissions
Low	**2** COVID Admissions
Average	**10** COVID Admissions

COVID Admissions by Age Cohort

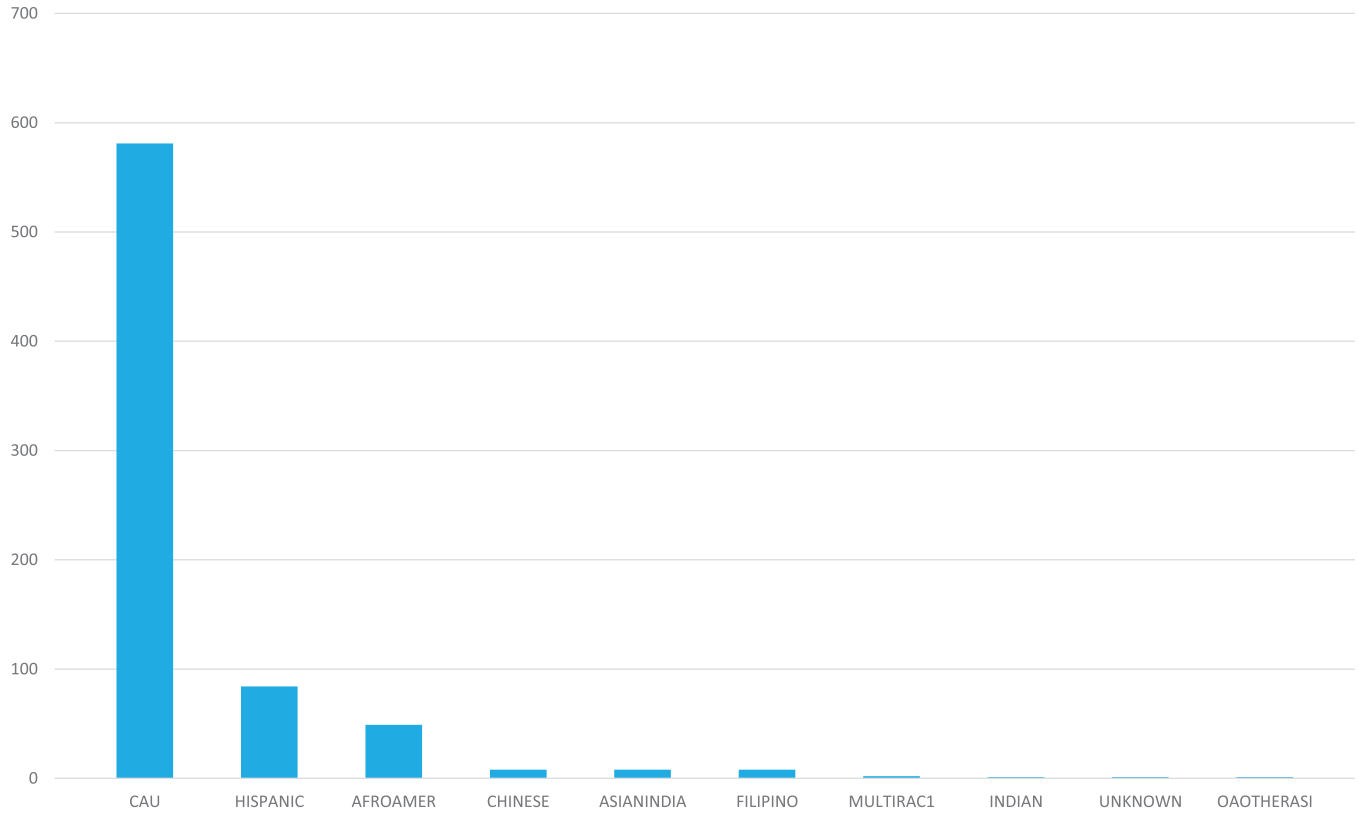
3/17/2020-6/30/2020



Youngest Patient	5 months
Oldest Patient	103 years
Average Age of Patient	66 years

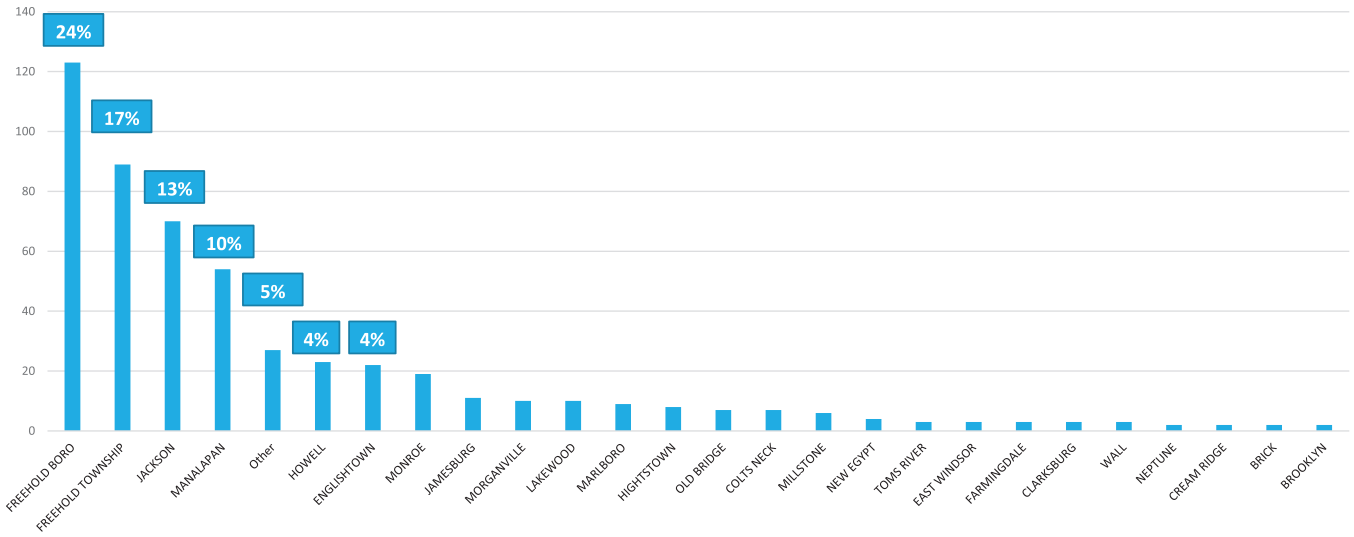
COVID Admissions by Race

3/17/2020-6/30/2020



COVID Admissions by Town

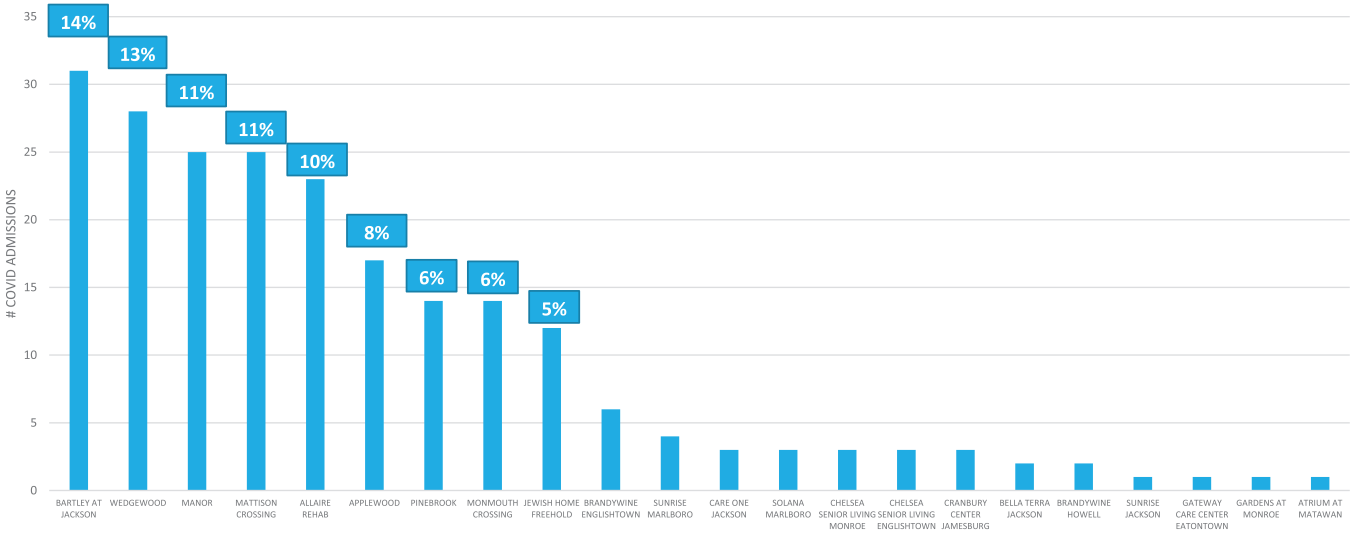
3/17/2020-6/30/2020



Other Includes: Allentown, Asbury Park, Bayonne, Bayville, Belmar, Bradley Beach, Brick, Brooklyn NY, Clarksburg, Cranbury, Cream Ridge, EastWindsor, Farmingdale, Flushing, Hazlet, Holmdel, Manasquan, Matawan, Metuchen, Mon. Junction, Neptune, New Egypt, Oakhurst, Ocean, Perrineville, Red Bank, Roosevelt,Shrewsbury, South Amboy, South River, Staten Island NY, Trenton, Wall, West New York, Wrightstown

COVID Admissions by Skilled Nursing/Assisted Living Facility

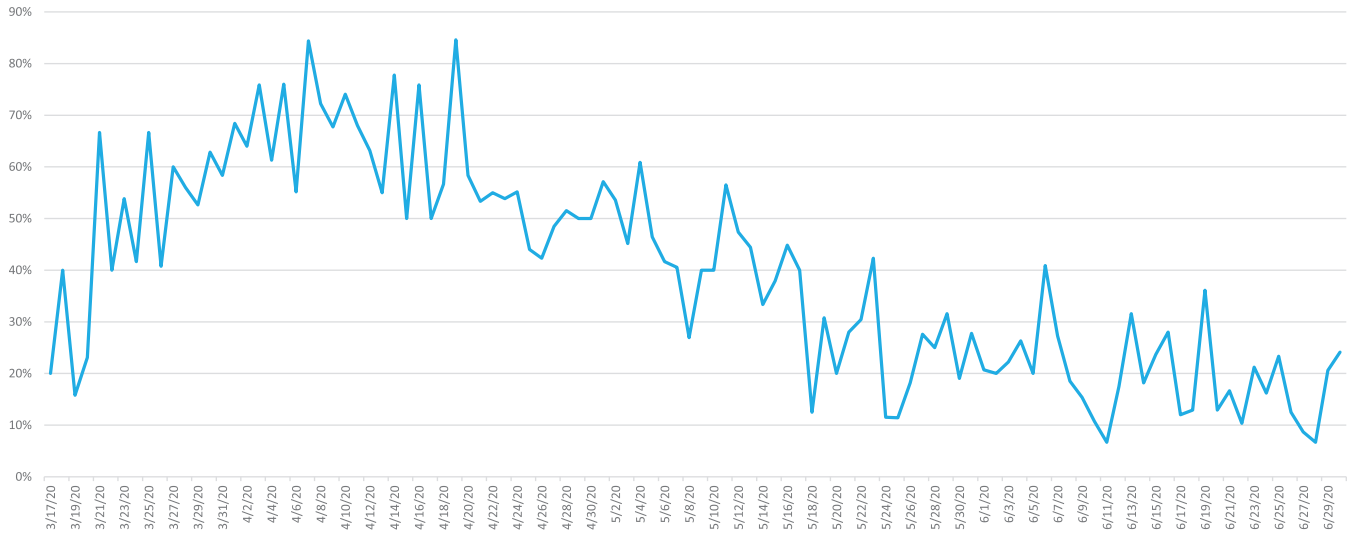
3/17/2020-6/30/2020



Other Includes: Brandywine Howell, Bella Terra Jackson, Sunrise Jackson, Gateway Care Center, Atrium at Matawan, Gardens at Monroe

% of Total Admissions that were COVID Admissions

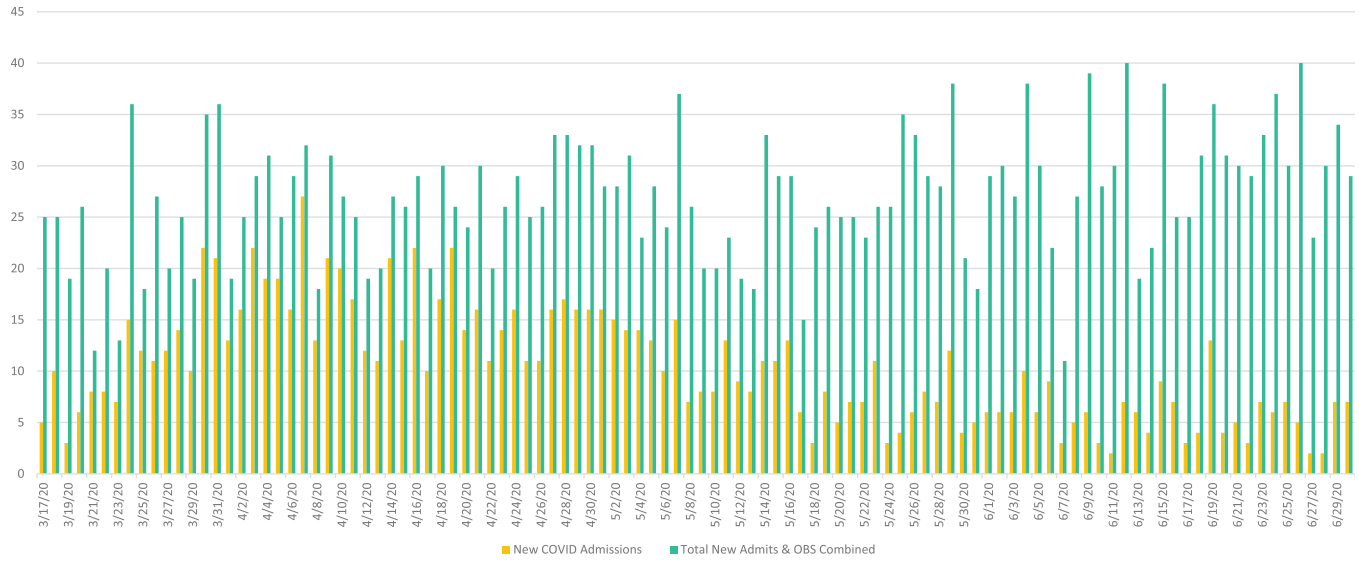
3/17/2020-6/30/2020



Highest %	85%
Lowest %	7%
Average %	40%

Total Admissions vs. COVID Admissions

3/17/2020-6/30/2020



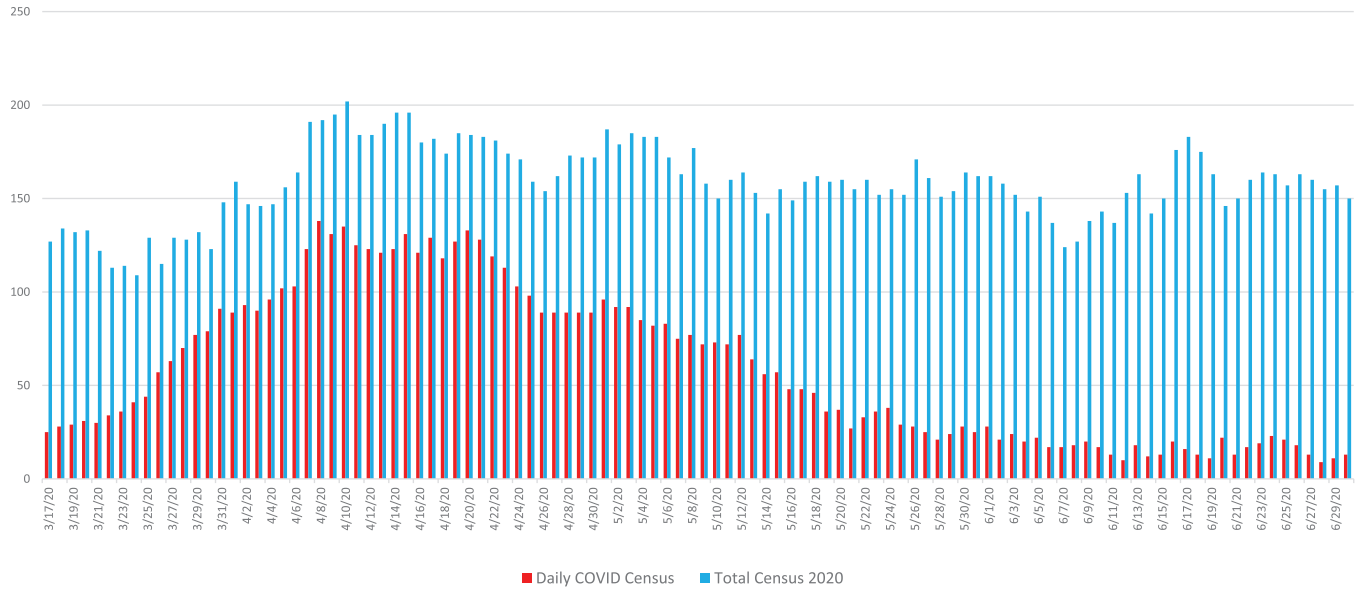
Highest COVID Admits	27
Lowest COVID Admits	2
Average COVID Admits	10

Inpatient COVID Census

3/17/2020-6/30/2020

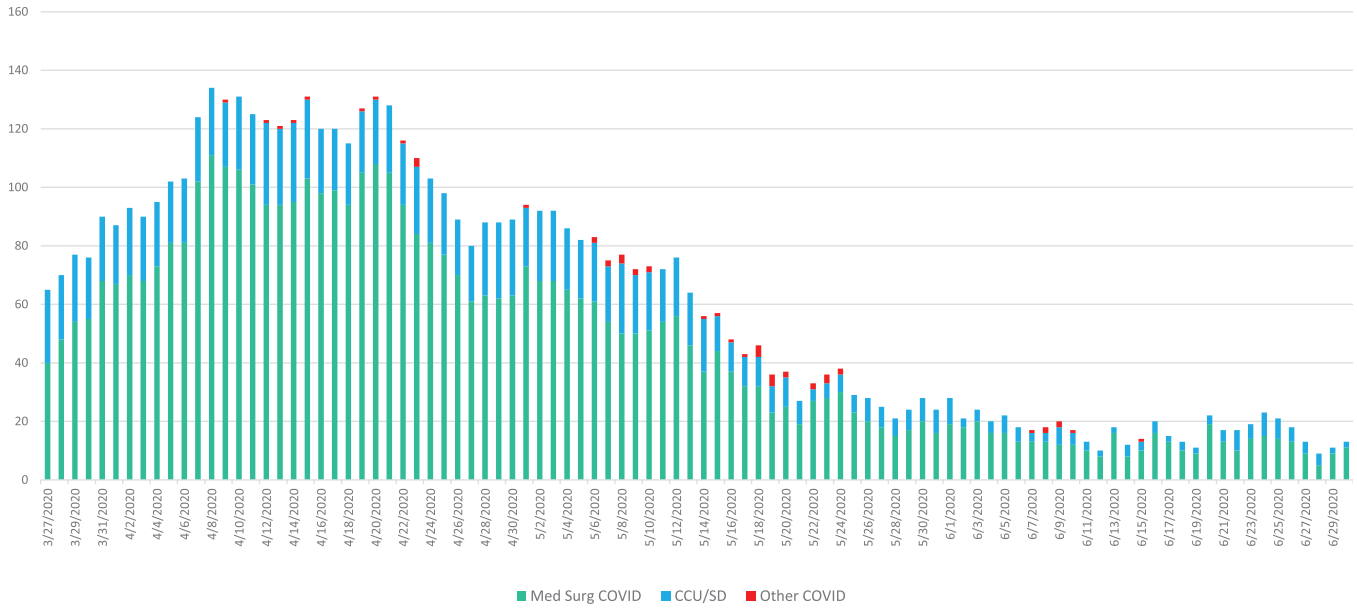
Daily Total Census vs. Daily COVID Census

3/17/2020-6/30/2020



COVID Census by Level of Care Ordered

3/17/2020-6/30/2020

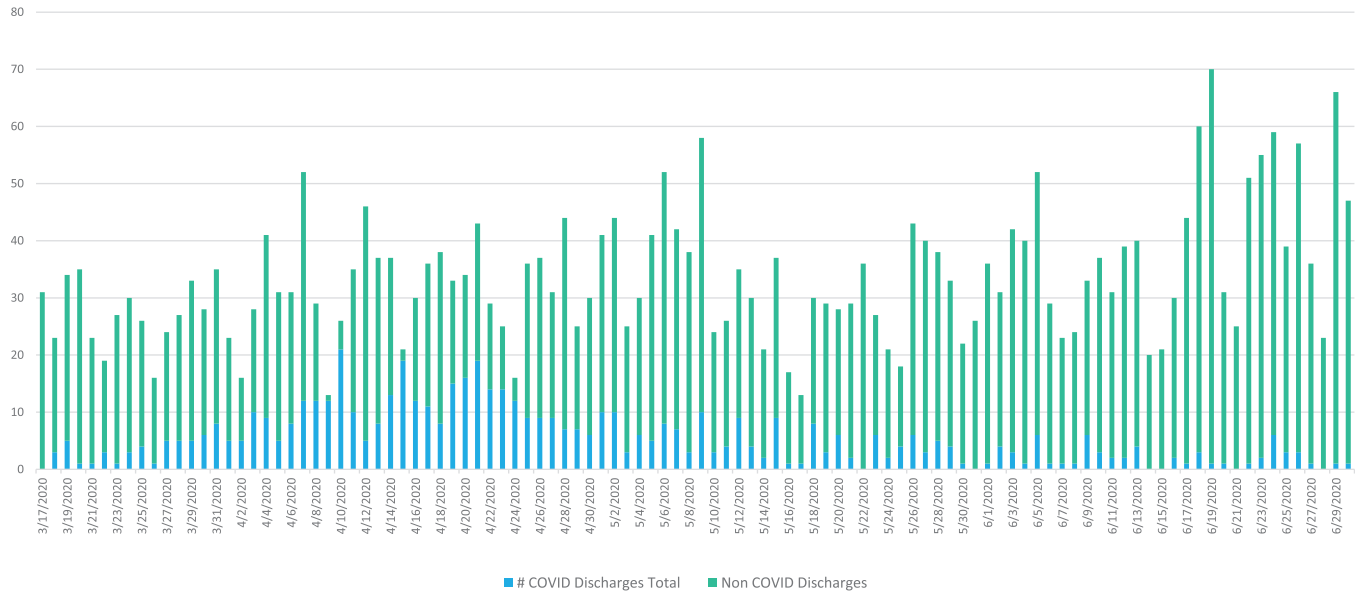


Total Inpatient COVID Discharges as of 6/30/2020: 596

Includes Positive and PUI Inpatient discharges

Daily COVID Inpatient Discharges vs Non-COVID Inpatient Discharges

3/17/2020-6/30/2020

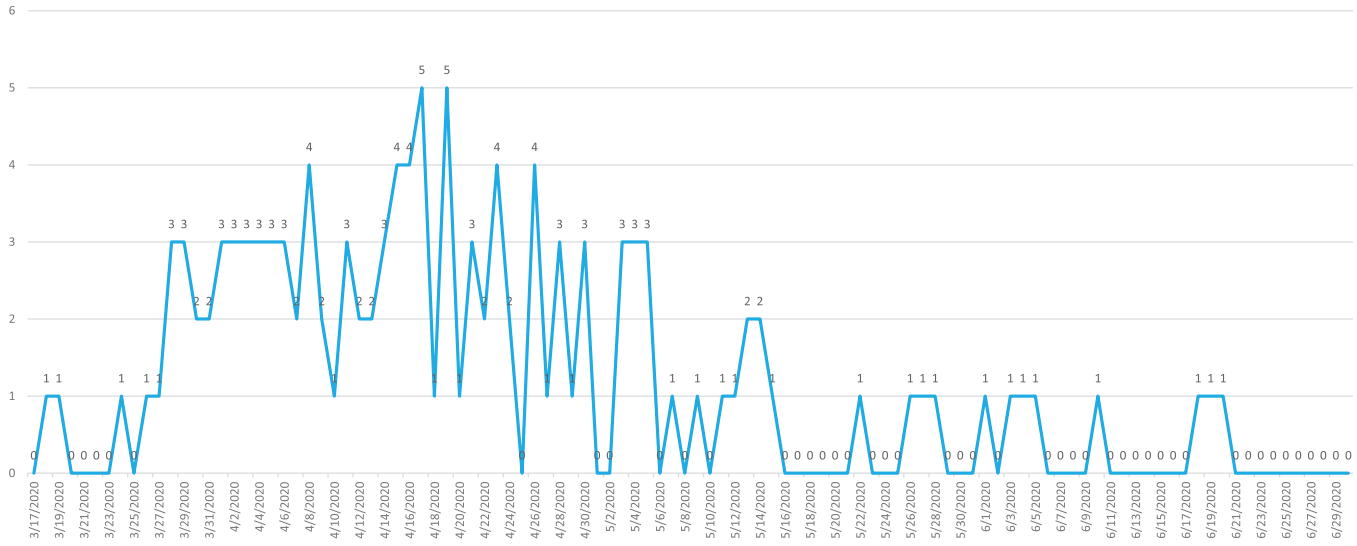


Total COVID Expirations as of 6/30/2020: 115

Positive Expirations

Daily COVID Expirations for CentraState Medical Center

3/17/2020-6/30/2020

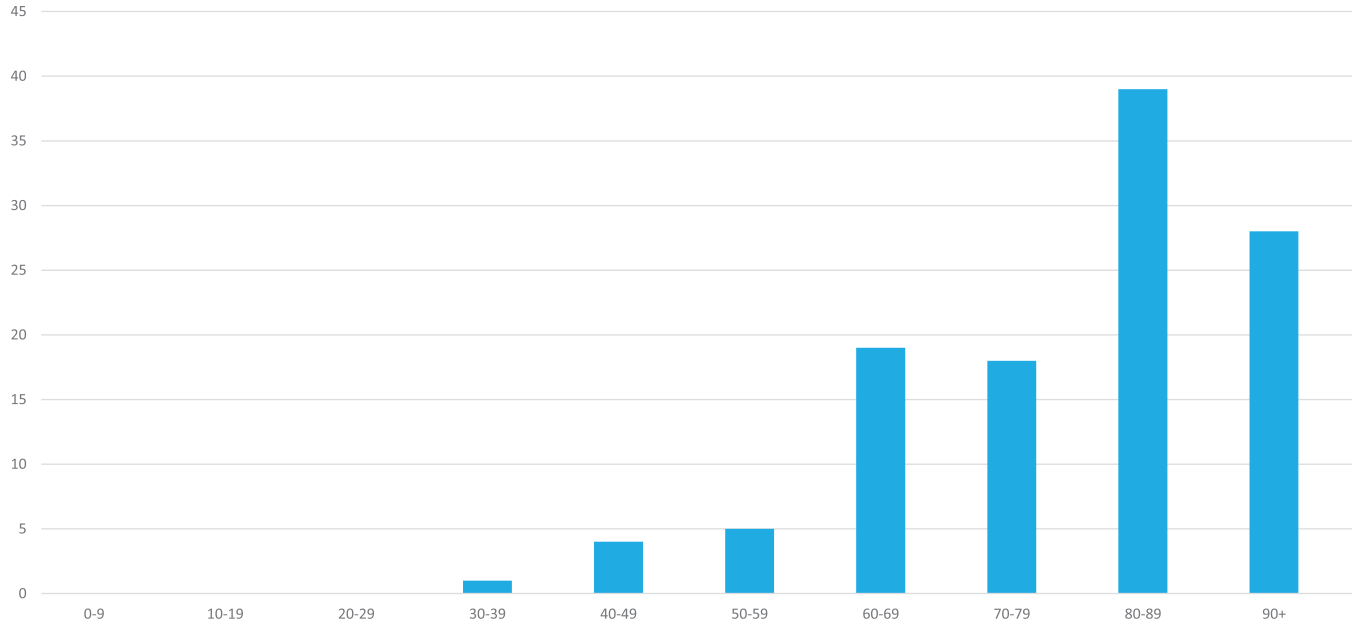


Values shown are discrete number of expirations due to COVID

High	5
Low	0
Average	1

COVID Expirations by Age Cohort for CentraState Medical Center

3/17/2020-6/30/2020

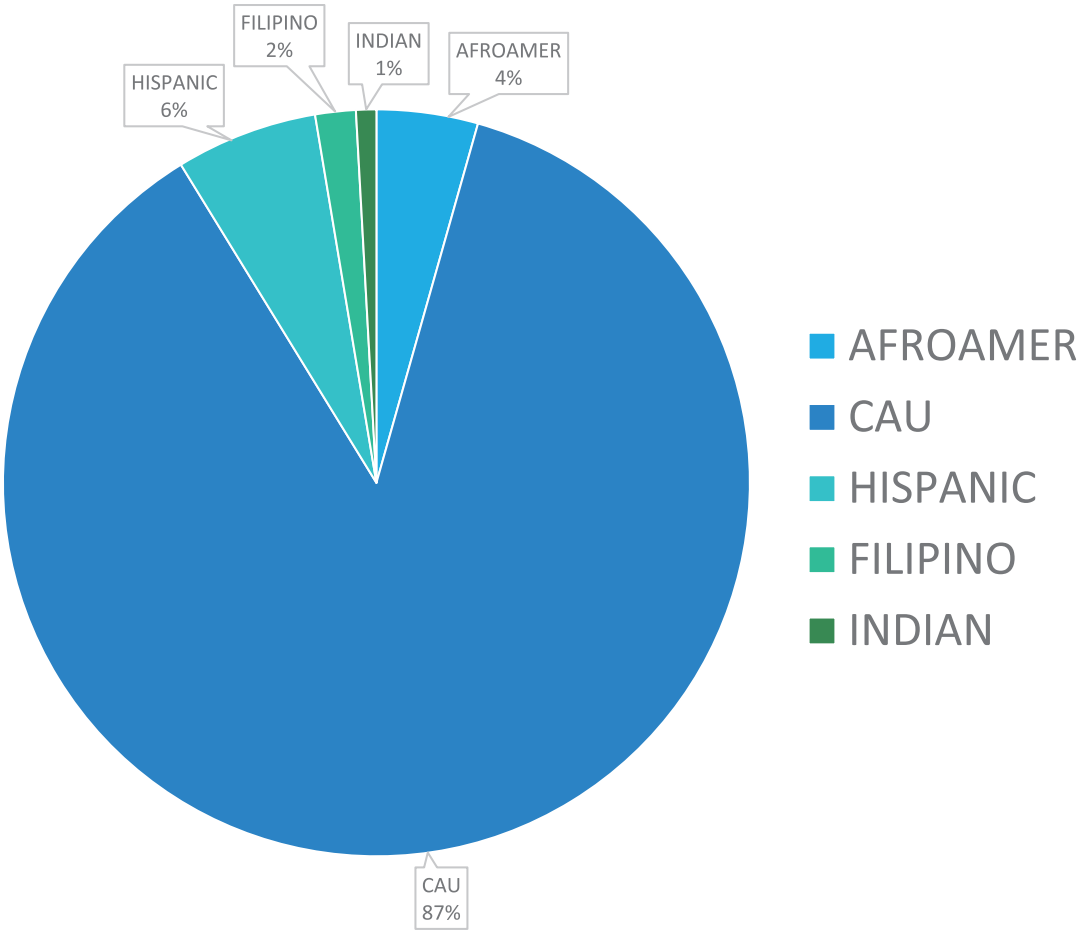


Values shown are discrete number of expirations due to COVID

Oldest	103
Youngest	32
Average	79

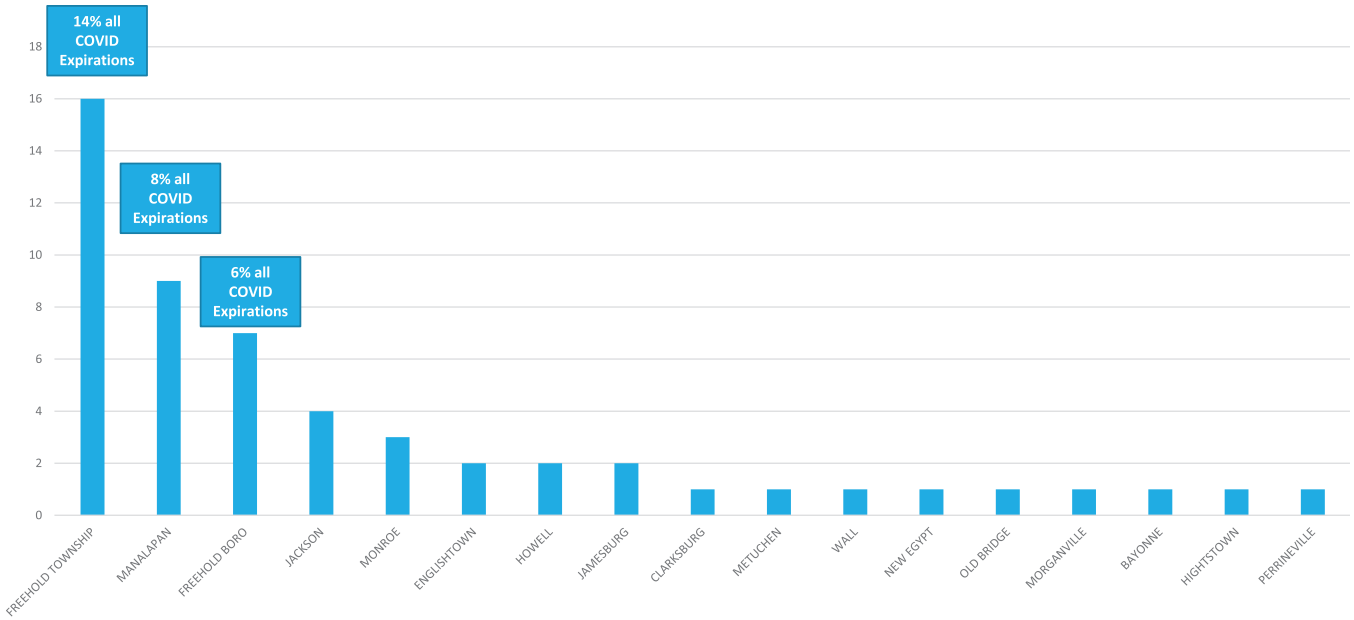
COVID Expirations by Race for CentraState Medical Center

3/17/2020-6/30/2020



COVID Expirations by Town, Excluding Facilities

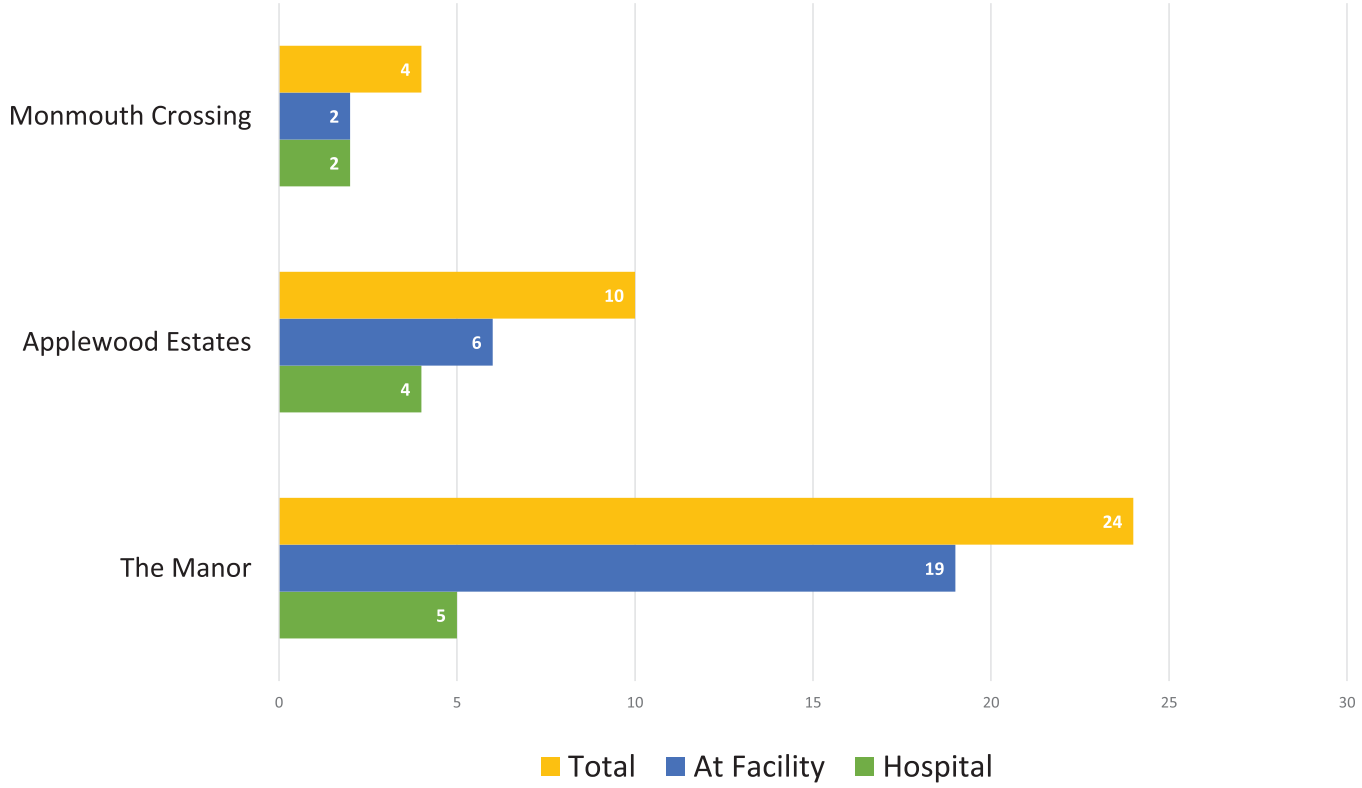
3/17/2020-6/30/2020



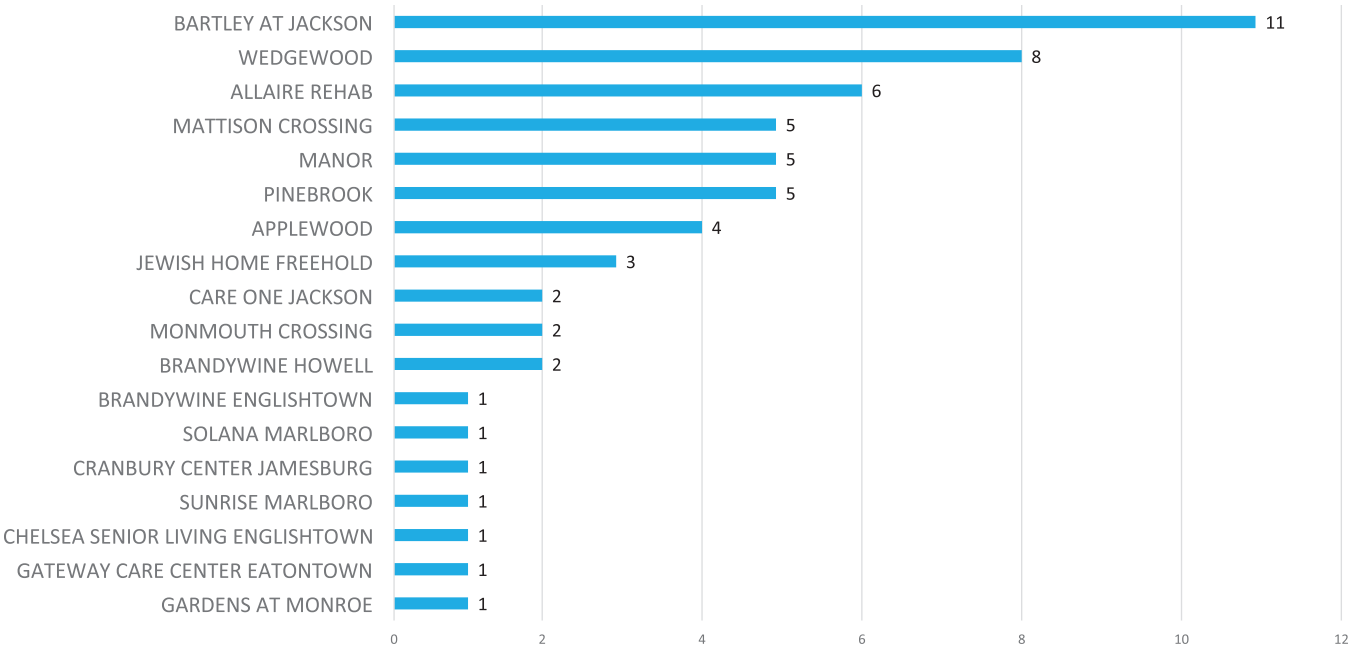
Values shown are discrete number of expirations due to COVID

CSMC Facility COVID Expirations

Percent of all COVID Inpatient Expirations that were from a CSMC Facility 10%

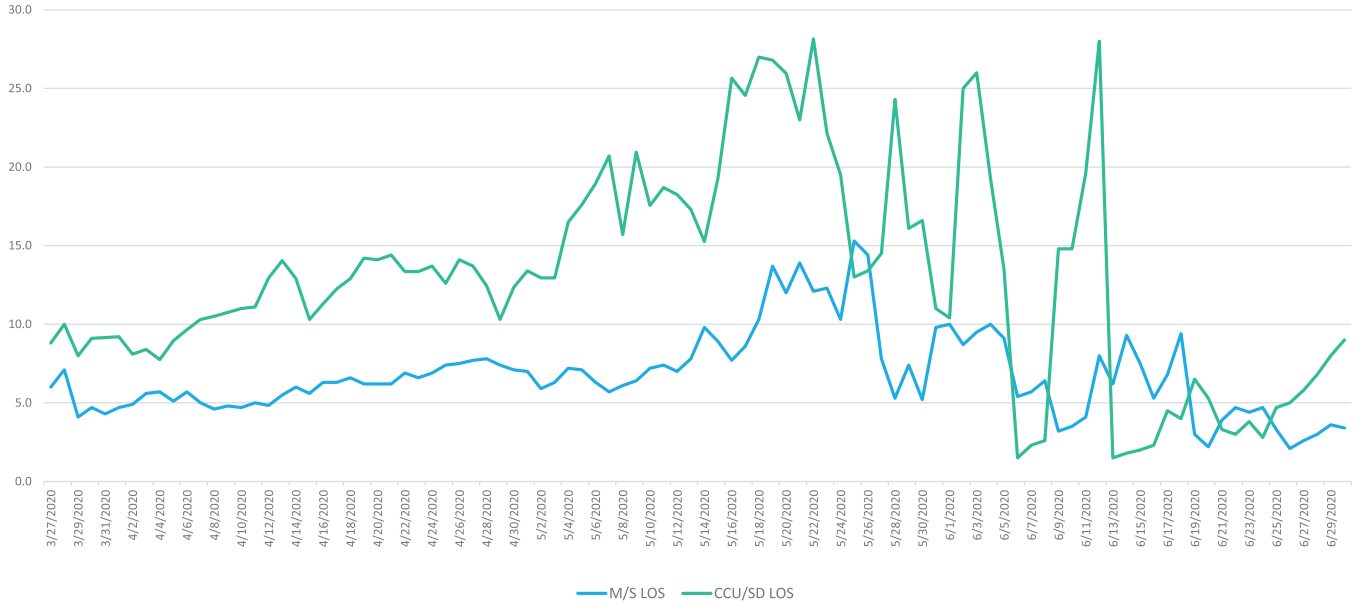


Inpatient COVID Expirations by Skilled Nursing/Assisted Living Facility



COVID Length of Stay by Level of Care

3/17/2020-6/30/2020



Average COVID L.O.S for Med/Surg: 6.8

Average COVID L.O.S for CCU/SD: 12.9

Recovery Rate of COVID Admissions as of 6/30/2020: 85%

Of all COVID Positive/PUI Inpatients

Mortality Rate of COVID Admissions as of 6/30/2020: 15%

Of all COVID Positive/PUI Inpatients

Senior Services Dashboard

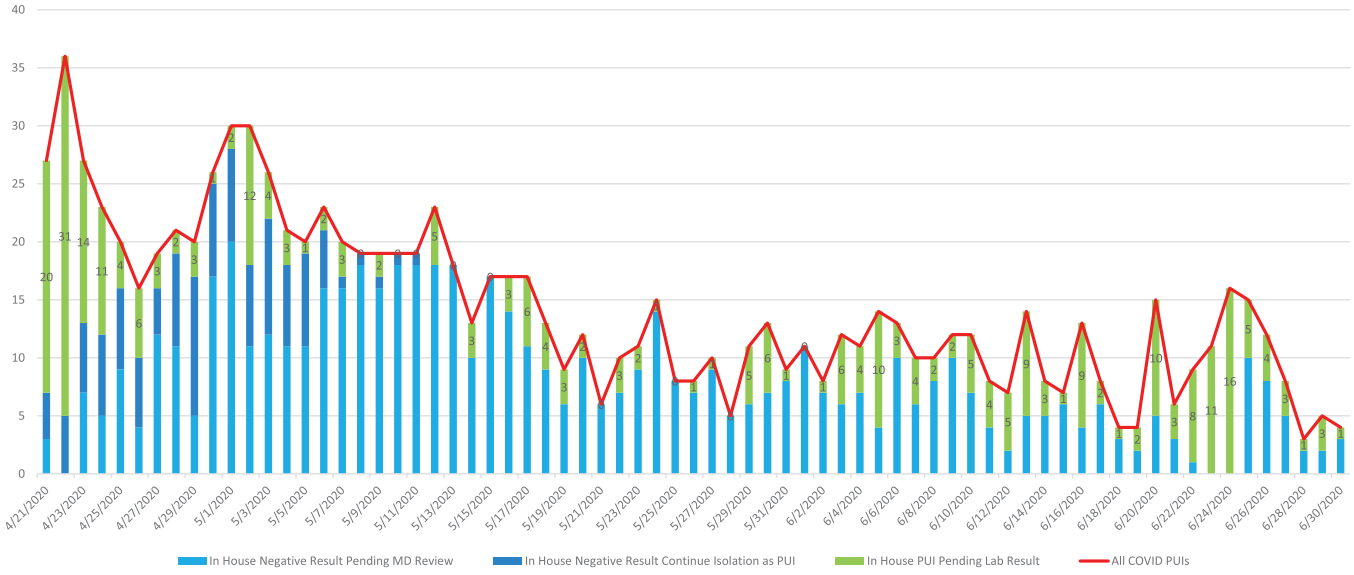
THE MANOR		Measure	6/30/2020	Year to Date
	Residents	Current Total Resident Census	81	-
		COVID Positive Residents	0	79
		COVID Positive Residents Expired	0	24
		COVID Recoveries	40	55
		Current Residents with Symptoms	0	-
	Staff	Total Staff	145	145
		COVID Positive Staff	0	35
		COVID Positive Staff Expired	0	1
		Staff out with Symptoms	0	27
		Staff Recovered / Back to Work	0	63

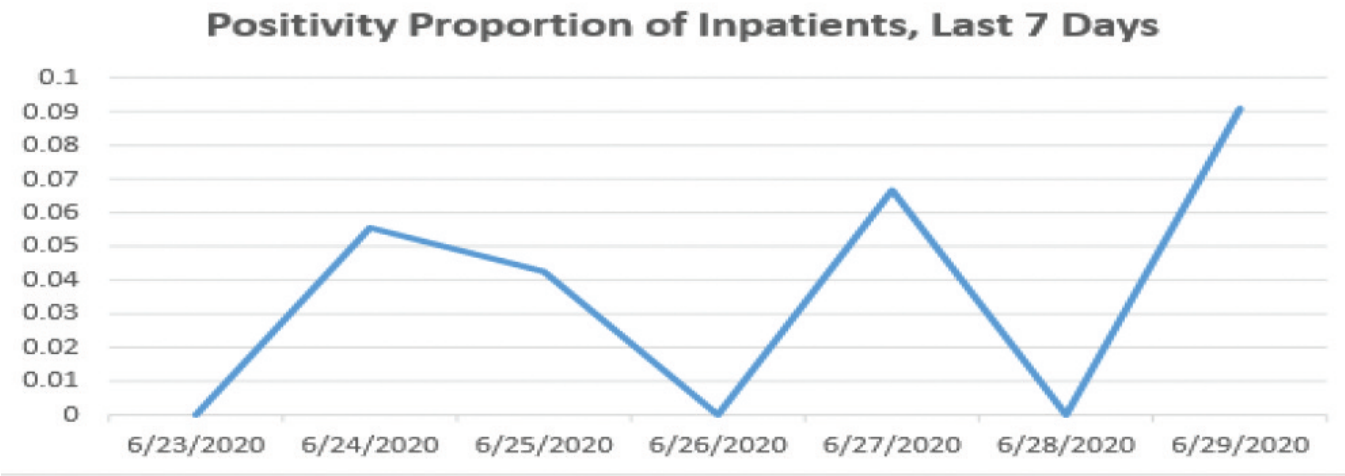
APPLEWOOD		Measure	6/30/2020	Year to Date
	Residents	Current Total Resident Census	337	-
		COVID Positive Residents	0	37
		COVID Positive Residents Expired	0	10
		Current Residents with Symptoms	0	37
		COVID Recoveries	0	27
	Staff	Total Staff	226	226
		COVID Positive Staff	0	28
		COVID Positive Staff Expired	0	0
		Staff out with Symptoms	0	23
		Staff Recovered / Back to Work	0	51

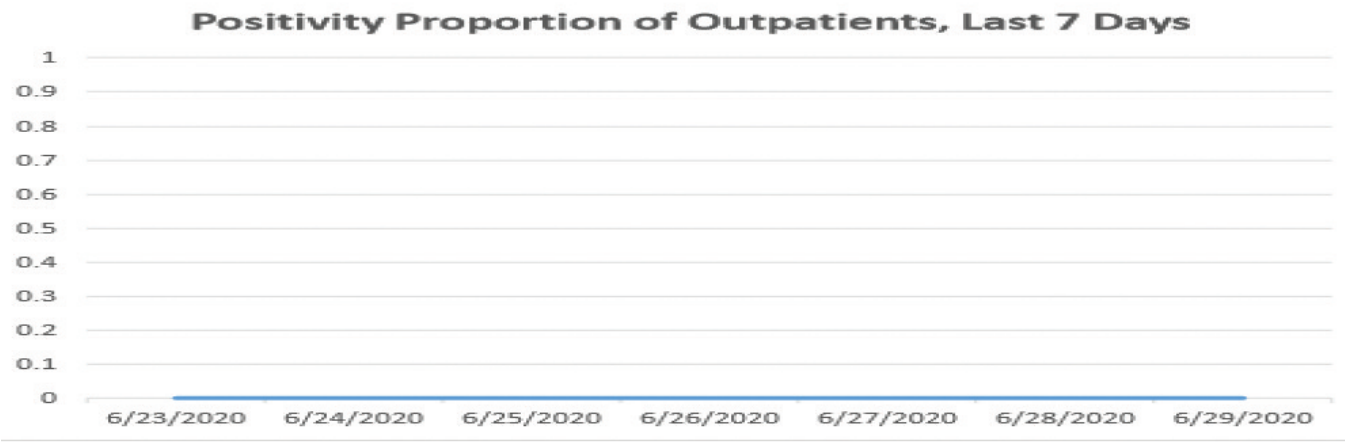
MONMOUTH CROSSING		Measure	6/30/2020	Year to Date
	Residents	Current Total Resident Census	60	-
		COVID Positive Residents	0	22
		COVID Positive Residents Expired	0	2
		Current Residents with Symptoms	0	0
		COVID Recoveries	0	15
	Staff	Total Staff	85	85
		COVID Positive Staff	0	12
		COVID Positive Staff Expired	0	0
		Staff out with Symptoms	0	1
		Staff Recovered / Back to Work	0	16

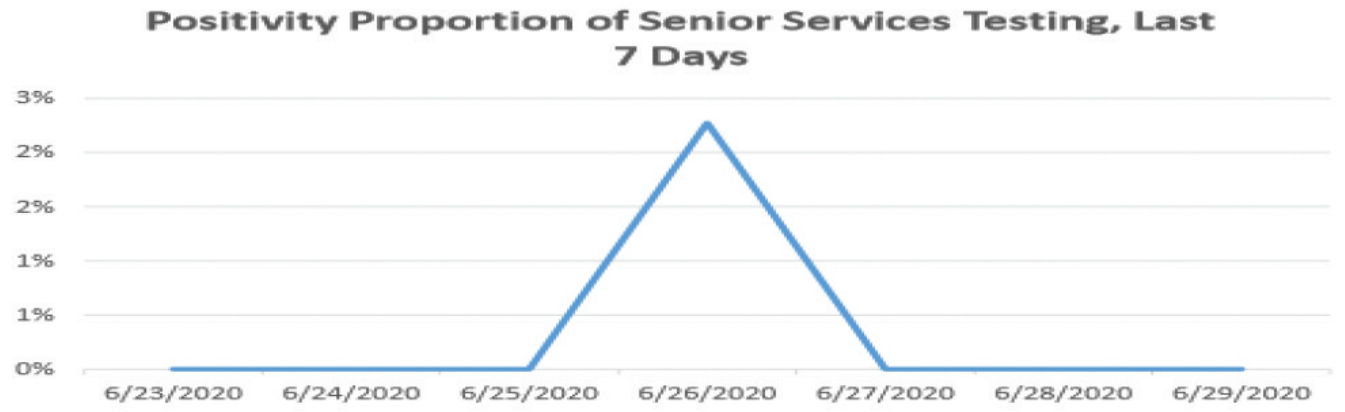
Breakdown of PUI Status

4/21/2020-6/30/2020









INPATIENT	Date	Total Results	Positive	Negative	% Positive
	6/23/2020	0	0	0	#DIV/0!
	6/24/2020	36	2	34	6%
	6/25/2020	47	2	45	4%
	6/26/2020	21	0	21	0
	6/27/2020	15	1	14	7%
	6/28/2020	16	0	16	0%
	6/29/2020	33	3	30	9%

Includes all tests performed on inpatients, including inpatients needing clearence for surgery/procedure

OUTPATIENT	Date	Total Results	Positive	Negative	% Positive
	6/23/2020	0	0	0	#DIV/0!
	6/24/2020	15	0	15	0%
	6/25/2020	9	0	0	0%
	6/26/2020	4	0	4	0%
	6/27/2020	49	0	49	0%
	6/28/2020	5	0	5	0%
	6/29/2020	25	0	25	0%

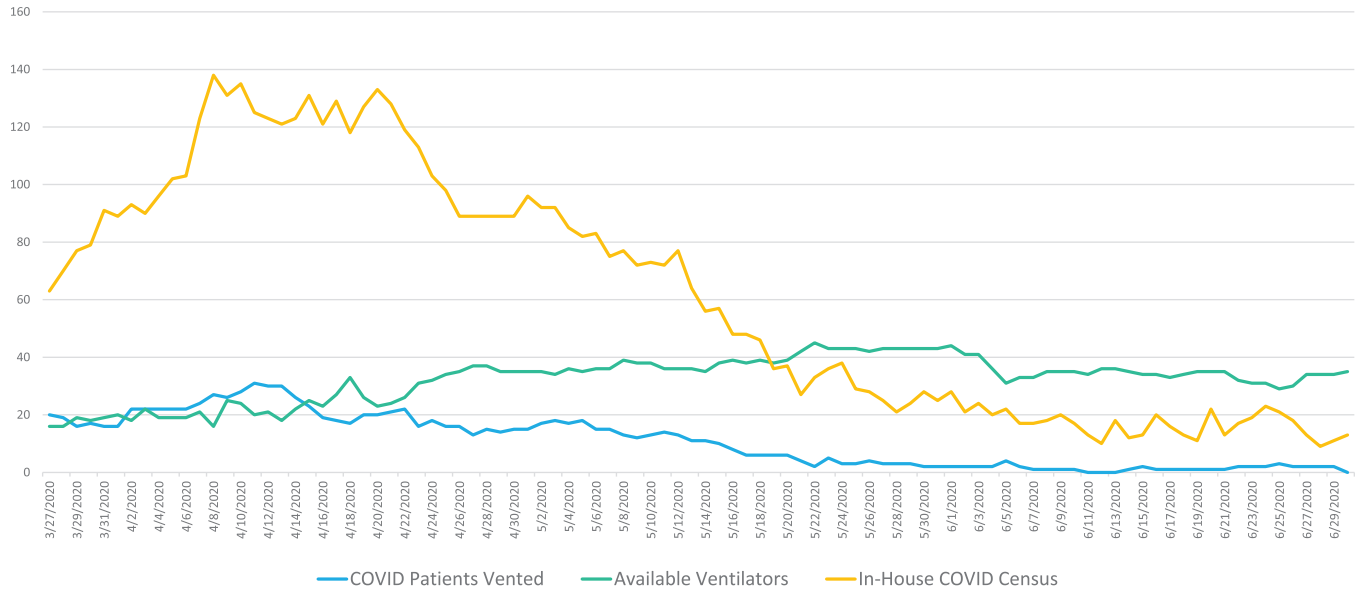
Includes all tests performed on outpatients, including ED & pre-testing for elective surgeries/procedures

SENIOR SERVICES	Date	Total Results	Positive	Negative	% Positive
	6/23/2020	48	0	48	0%
	6/24/2020	112	0	112	0%
	6/25/2020	9	0	9	0%
	6/26/2020	44	1	43	2%
	6/27/2020	43	0	43	0%
	6/28/2020	34	0	34	0%
	6/29/2020	7	0	7	0%

Includes testing on Senior Service Residents/Employees

Ventilator Info (COVID Vents vs Available Vents)

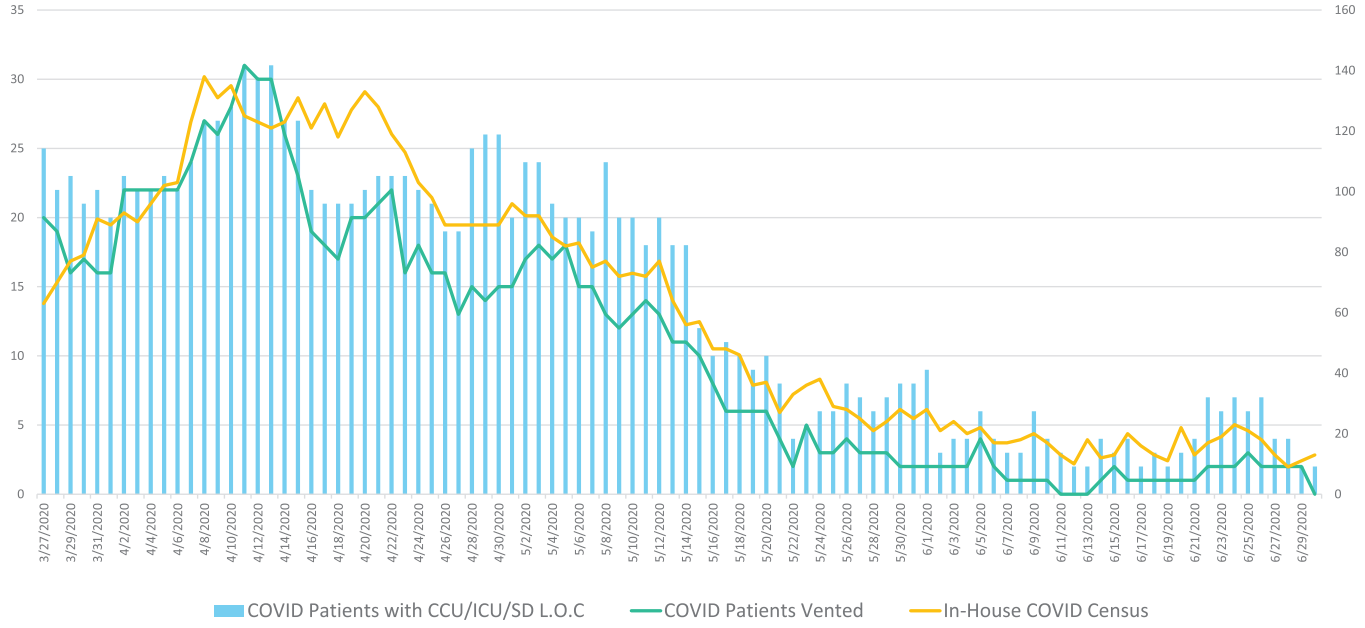
3/17/2020-6/30/2020



High	31
Low	0
Average	10

CCU/ICU/SD Patients vs. Ventilator Usage

3/27/2020-6/30/2020



COVID-19 Lifetime Dashboard

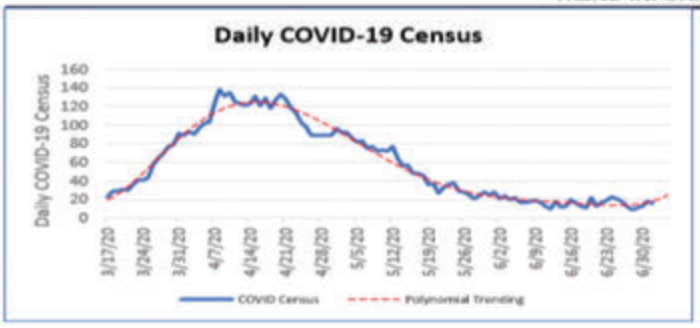
All values are reported as life to date (Start date 3/1/2020)

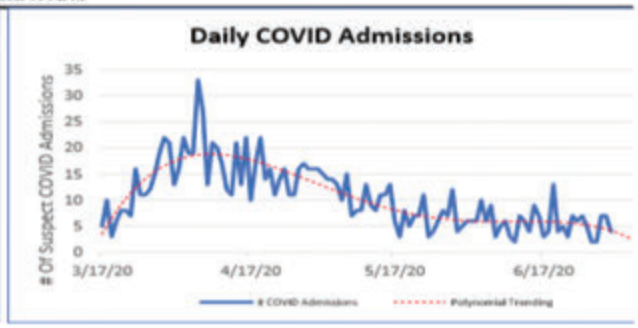
TOTAL COVID TESTS* (INPT & OP)	5350
POSITIVITY RATE OF ALL TESTING	16.0%
TOTAL TESTED ED DISCHARGES & HOME MONITOR	573
ED SYMPTOM & NO TEST	366

SUSPECTED COVID ADMISSIONS TOTAL	743
CURRENT IN HOUSE COVID CENSUS	16
COVID INPATIENT DISCHARGES TOTAL	596

COVID EXPIRATIONS	POS	PUI
	115	0

TREND INFORMATION





** Total COVID Tests is inclusive of the testing done on inpatients, ED treat and release, senior service entities. Duplicate testing and employee population tested also included in this number. Lab stats from Harvest. As of 6/30

COVID-19 Current Dashboard

Tuesday, June 30, 2020

Version: 6/30/2020 @ 8:15 AM Submitted By: Gaye Werblin

CONFIDENTIAL INFORMATION

CURRENT HOSPITAL CENSUS	154
TOTAL ED VISITS PRIOR DAY	107
SUSPECTED COVID INPATIENT DISCHARGES PRIOR DAY	1
POSITIVE	1
PUI	0

CURRENT SUSPECTED COVID CENSUS	13
INPATIENT POSITIVES	9
INPATIENT PUIs	4

CURRENT SUSPECTED COVID VENTED PATIENTS	0
VENTS AVAILABLE	35
SUSPECTED COVID EXPIRATIONS PRIOR DAY	0
POSITIVE	0
PUI	0

Testing Information

TOTAL # OF RESULTS RECEIVED PRIOR DAY	40

TOTAL # POSITIVE RESULTS RECEIVED PRIOR DAY	3

TOTAL # NEGATIVE RESULTS RECEIVED PRIOR DAY	37

Current COVID Capacity Information

Unit	Current Census	Capacity Level	Avail. Beds
3 North	**11**	73%	4
Stepdown	**2**	20%	8
	TOTAL COVID BEDS AVAIL		**12**

***Highlight indicates capacity on that unit. More of the box highlighted, higher capacity the unit is operating at. >50% = Green / 50% ≥ x >75% = Yellow / x > 75% = Red*

POSITIVITY RATE OF TESTS *LAST UPD 6/24/20*	**18%****

** Positivity rate is of all testing YTD. Over the last 7 days, average positivity rates of testing are as follows:

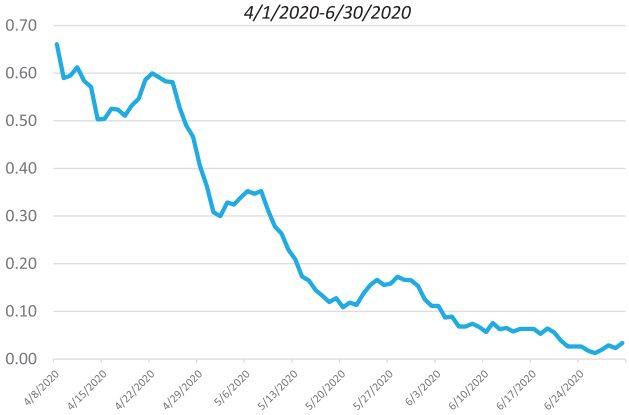
Senior Services	0.3%
Inpatient	4.8%
Outpatient	0%

**Returned 5 ventilators to State of NJ on 6/4*

The Road to Re-Opening

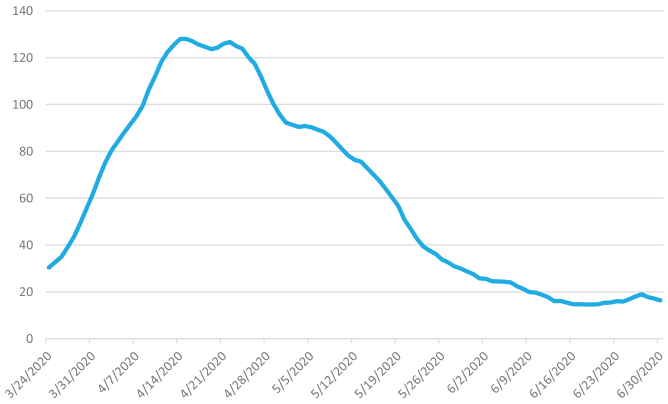
7 DAY MOVING AVERAGE PROPORTION OF POSITIVE TEST RESULTS TO ALL TEST RESULTS OF INPATIENTS

4/1/2020-6/30/2020



7 DAY MOVING AVERAGE OF IN-HOUSE COVID CENSUS

3/17/2020-6/30/2020



7 DAY MOVING AVERAGE OF NEW COVID ADMISSIONS

3/17/2020-6/30/2020

APPENDIX A:

The CentraState Covid-19 Response Team List

Geronima Alday, MD
Family Medicine, Family Practice Residency Program

Philip Angello*, MD
Family Medicine

Sydney Asslestine, MD
Family Practice

Kenneth Barofsky, MD
Internal Medicine/Pulmonary

Nicole Castro, MD
Family Practice

Ayesha Chaudhary*, MD
Internal Medicine

Jamie Cherian*, DO
Family Practice

Shirlynn Althea Chu, MD
Family Practice

Maria Ciminelli, MD
Family Medicine, Family Practice Residency Program

Alfred DeLuca, MD
Internal Medicine/Infectious Disease

Alix DeTullio, APN
Family Medicine

Kathryn Donohue, APN
Internal Medicine

Kenneth Eng*, DO
Family Medicine

Lee Ettinger*, MD
Internal Medicine/Critical Care

Adetoun Faniyan, MD
Internal Medicine

Kevin Farris*, MD
Family Medicine

Eduard Fuzaylov, MD
Internal Medicine

Baber Ghauri, MD
Internal Medicine

Parneet Grewal, MD
Family Practice

Ira Gurland, MD
Internal Medicine/Infectious Disease

Farida Hassan, MD
Internal Medicine

Shalena Islam, MD
Family Practice

Zeeshan Khan*, MD
Family Medicine, Family Practice Residency Program

Miah Kim*, DO
Family Medicine

Robert Kim, MD
Family Practice

Sunanda Krishna, MD
Internal Medicine

Ramanasri Kudipudi*, MD
Internal Medicine/Infectious Disease

Sherry Kumar, MD
Family Practice

Arthur Kwok*, MD
Family Practice

Carrie Liming, APN
Surgery

Richard Lock, MD
Internal Medicine

Sharon Lorfing*, APN
Surgery/Cancer Services

Kevin Ly, MD
Family Practice

Atul Maini
Internal Medicine/Nephrology

Farag Mankarios*, MD
Internal Medicine

Tricia Marceante, APN
Internal Medicine/Cardiology

James Matera*, DO
Nephrology

Kirk McCalmon, MD
Family Practice

Tusharkumar Mistry, MD
Internal Medicine

Tomi Olaniyan, MD
Family Practice

Rupa Panchal, MD
Internal Medicine

Yatin Patil, MD
Internal Medicine

Jacey Pudney, MD
Family Practice

Mahvish Qazi, MD
Family Practice

Joshua Raymond*, MD
Family Medicine, Family Practice Residency Program

Henry Redel, MD
Internal Medicine/Infectious Disease

Dan Sandru*, MD
Family Medicine

Grant Sewell, MD
Family Medicine

Anand Shah, MD
Family Practice

Nirav N. Shah*, DO
Internal Medicine/Pulmonary/ Critical Care

Nivedita Sharma*, MD
Internal Medicine

Brittany Shepherd*, MD
Internal Medicine

Taru Sinha, MD
Family Medicine

Sean Sussman, MD
Family Practice

Jayanthi Talamati, MD
Internal Medicine

Atlas Trieu*, MD
Internal Medicine

Raahi Upadhyay, MD
Family Practice

Thomas Wall, MD
Family Practice

Maher Youssef, MD
Internal Medicine, Chief of Staff

* Team member who participated in interview.

APPENDIX B: CentraState Leadership/Management Team Members Interviewed for COVID-19 Report

Barone, Nancy
Vice President
Development

D'Elia, Vincent
Vice President
Marketing & Public/
Government Relations

Dellocono, John
Sr. Vice President/CFO
Finance

DeSimone, David
Sr. Vice President
Organizational Transformation/
Chief Legal Officer

Freeman, Karen
Vice President
Quality/Patient Safety

Geisler, Linda
Vice President/CNO
Patient Services

Gribbin, John
President/CEO
Chief Executive Officer

Keane, Fran
Vice President
Human Resources

Kelly, Kim
Vice President
Clinical Services

Matera, James, DO
Sr. Vice President/CMO
Medical Director

Richvalsky, James
Vice President
Physician Practice Management

Rommel-Connors, Deborah
Vice President
Revenue Cycle Management

Scott, Thomas
Sr. Vice President/COO
Chief Operating Officer

Ulett, John
Vice President/CIO
Information Technology

Van Wert, Danielle
Safety Director
Environmental Services/Safety

Werblin, Gaye
Patient Access Services Director

Linda Pacetti
Clinical Director, Lab Services

Jacquie Breuer
Infection Control Coordinator

Ron Mangin
Clinical Director Pharmacy

Gerard Crosbie
Director, Materials Management

Toni Lynn Davis
Administrator, Manor

Maureen Colandrea
Nurse Manager, PCU

Laurie Gambardella
Administrative Director, ED/OBS

Joan Leimbach
Manager Care Coordination

Annie Shelton
Nurse Manager, CCU

Cathy Volker-Lutz
Mgr., Sterile Processing

John Whalen
Clinical Director Respiratory
Services

Barbara Yuhas
Director of Med/Surg Nursing

Helena Berardinelli
Director of Activities at The Manor

Kristen Connors
Clinical Leader ED

Pam Flynn
Clinical Leader ED

Jackie Lavigne
Clinical Leader Oncology

Ashley Mackiel
Magnet Coordinator

Lisa Rivera
Nursing Wound APN

Linda Rizzo
Director Healthcare
Services/Applewood Estates

Christine Scasny
Nursing Float Pool

James Stroud
Sup Facilities Management/
Monmouth Crossing

"It humbled me to know that something that you can't even see, with no brain and only genetic material, could cripple the country – it's a bring you to your knees kind of thing. It took a sub-micron particle to teach us a lesson. There is still so much to learn in medicine."

— Dr. James Matera, Chief Medical Officer

CentraState Healthcare System®

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