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VA HEROES FOR HEROES

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U.S. Department of Veterans Affairs

Veterans Health Administration

VA Northeast Ohio Healthcare System

CREATING A NEW NORMAL

VA Northeast Ohio tackles COVID-19.

The storm was coming. It had ravaged China and Italy, and now COVID-19 was rapidly making its way across the United States, bringing major hospitals to their knees, and killing the elderly at an alarming rate.

VANEOHS officials knew it was only a matter of time until the deadly coronavirus claimed one of their own. Even as they began preparing, they braced themselves for the worst.

"Our population skews to older veterans," said Dr. Todd Smith, the hospital's deputy chief of staff and an internist. They have "multiple comorbidities and a lot of different illnesses. Our first thoughts were how can we mitigate the risk?"

Smith and Beth Lumia, MSW, VANEOHS's associate director, set up an incident command the first week of March and began working through every contingency they thought the health care system might face. Other health systems had run out of ventilators and other supplies. Rumors circulated that doctors were being forced to decide who would live and who would die. VANEOHS was determined to not be caught off guard.

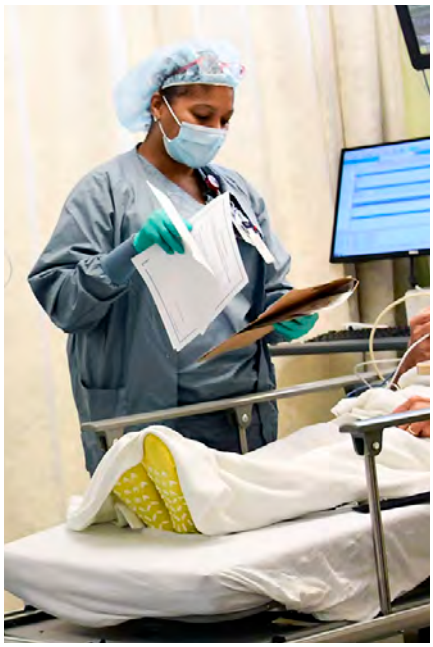
"It all boiled down to, 'Are we going to have enough resources at the right time and in the right place to take care of veterans?'" said Lumia.

The call came March 15, 2020, in the wee hours of the morning: The Cleveland VA had its first positive patient.

"We all had the visceral reaction of, OK, this is happening," Smith remembered. "It was important work. It needed to be coordinated 24 hours a day. It was a very intense time."

At first, they didn't know if they would have to isolate staff members, recalled Jeff Rusnak, chief of the Patient Transfer Center, but as much of the country scrambled to find personal protective equipment for medical workers, the Cleveland VA had a stockpile of powered air purifying respirators (PAPRs). There weren't enough disposable gowns, but they did have washable ones.

COVID tests were a different story, said Smith, but scientists at the Cleveland VA were soon developing their own tests.



"There's not a single one of us who hasn't been impacted by it. Our way of life has changed, hopefully not forever."

"We did amazing work with [testing]. The Cleveland VA is an academic medical center. We teach and we have researchers. We had good logistics contacts within different companies that made machines. We ended up with four [testing] platforms." Between them, he said, "we were able to piece together the testing that we needed."

VA also relied on community partners like the Cleveland Clinic, University Hospitals and MetroHealth to increase testing capacity: "We were able to leverage the academic community that we're a part of in Cleveland, as well as leverage a lot of the in-house expertise that we have in testing and research, laboratory work and laboratory operations," Smith continued.

It was always something. If it wasn't the tests, it was the swabs to perform the tests. At one point, Smith said, staff members checked every room to count how many swabs they had left.

Hospital staff also developed detailed plans for increasing COVID patient capacity. Regular patients would be moved from the medical ICU to the surgical ICU, for example, and the MICU would be reserved for COVID patients. The engineering department converted regular hospital rooms to negative pressure rooms. A new education program would train nurses, preparing acute care nurses to serve in the ICU, and training ambulatory care nurses to take their places on the acute wards.

Preparation helped ensure they never ran out of space. "We would meet with the different services," said Rusnak, who oversees all movement of patients in, out and within the hospital. "We would tell them what we're seeing, what's happening, and what the plan is. Every day was changing."

"People did amazing things, from standing things up that would typically take months in 12 or 24 hours, or just working hour after hour after hour," said Smith, noting that the regular business of the hospital didn't stop because of COVID. Veterans still had heart attacks and they still developed cancer. After almost a year, everyone is stretched thin.

"Morale is always a concern," said Lumia. "Even if you didn't have COVID, there's not a single one of us who hasn't been impacted by it. Our way of life has changed, hopefully not forever."

CLINICAL RESPONSE

How VANEOHS adapted to the COVID-19 pandemic.

March 15, 2020 is a date doctors and nurses at the Louis Stokes Cleveland VA Medical Center will remember forever. That was the day a global pandemic arrived on their doorstep when an elderly man with dementia tested positive for COVID-19.

"Even though you know it's coming and you're developing treatment algorithms and infection control protocols, I think a small part of you hopes that it's not going to come to your hospital," said Dr. Usha Stiefel, Chief of Infectious Diseases.

At first, said Dr. Charles LoPresti, section chief of acute care medicine, physicians looked for fevers, for chills, for typical upper respiratory symptoms, such as coughs or shortness of breath. But they soon found that positive patients could also present with just headaches or nausea/vomiting.

In the beginning, LoPresti said, doctors didn't know much about the disease, but they did know COVID patients could deteriorate rapidly.

"I don't know how many times I've had a patient about to be discharged when they crashed and ended up in the ICU," said Dr. Sarah Augustine, Associate Chief of Medicine Service.

The Medical Intensive Care Unit was initially reserved for COVID patients. Patients who weren't quite as sick, or who had started to get better, went to the Progressive Care Unit.

"It was extremely stressful," said Holly Robinson, PCU nurse manager, but "our nursing kicked in. We're going to take care of the patients."

Amid a nationwide personal protection equipment shortage, the Cleveland VA was lucky. It had extra powered air purifying respirators (PAPRs) on hand.

"We were asked to conserve, [but] we never felt that we did not have enough" said Lisa Neelon, MICU nurse manager. "My goal was to make sure the staff felt safe."

Everyone was afraid to bring COVID home – Robinson slept in a different room from her immunocompromised husband – so the hospital provided scrubs medical staff could change into at work and showers they could use before going home. No one from either the MICU or the PCU became infected with COVID at the hospital.

After almost a year, doctors and nurses have learned how to treat the virus, and the death rate has gone down. Veterans no longer go on ventilators right away; it's too hard to take them off, said Augustine. Instead, patients receive high-flow oxygen first. Similarly, drugs initially touted as lifesavers were soon discarded as ineffective and potentially harmful. They've been replaced by the steroid dexamethasone and the antiviral remdesivir. Most patients also receive blood thinners.

Nurses have learned to check lab results that normally wouldn't matter for respiratory illnesses, said Robinson, and they quickly discovered that a normal pulse oximeter reading of, say, 98 percent, wasn't necessarily accurate. Veterans' oxygen levels might really be 66 percent. "That's not something that you're presented with in nursing school."

Practitioners from throughout the Cleveland VA and other, nearby institutions – the Cleveland Clinic, University Hospital, MetroHealth – would call and text each other at all hours to pass on such odd results.

"We all became a lot closer – physically distanced, but mentally closer – to our colleagues," said Stiefel. "We were all in constant contact. There was obviously very minimal data." Studies were released early, before peer review, so physicians could learn from each other in real time.

One problem still proved nearly impossible to solve: "Patients who are alert feel trapped," said Robinson. "We've had delirium set in" after months of isolation.

Nurses, social workers and clinical psychologists might read texts from a Veteran's children. They might show a patient family photos. They might set up a tablet for video chats.

However, "it is not the same," said Augustine. "I'm not sure it's possible to realize how awful the isolation is. Worse is having to withdraw support when you haven't been able to visit your loved one. It's devastating." (The Cleveland VA recently began allowing 15-minute terminal visitations for COVID positive patients with appropriate PPE.)

When patients do recover, "it is a wonderful feeling," said Neelon. "When we sent our sickest patient out it was just a beautiful moment."

Those happy moments have sustained frontline workers for the past year. They're important because, even with vaccines, COVID isn't disappearing anytime soon, said LoPresti.

"This was an all-hands-on-deck response, and we needed everybody," he said. "I could not be happier with the willingness that I saw from everybody in terms of being flexible with rapidly changing protocols and uncertainty and personal anxiety around health so many stressors, so many reasons to not do your job well. The VA just shined through."

BACK FROM THE BRINK

Vietnam Veteran beats COVID-19.

Patty James stood in the emergency room of the Louis Stokes Cleveland VA Medical Center, March 23, 2020, trying to keep her composure as nurses wheeled her husband, David, to the back. She had rushed him to the hospital after finding him barely conscious, confused and burning with fever. She wouldn't see him again for a month, a month in which he almost died several times.

The couple wasn't too concerned when David first started showing cold symptoms a week earlier. He drives a school bus to keep busy in retirement and colds are part of the territory.

But David, who has diabetes and 10 stents in his heart, now had a fever of 103 and was disoriented. Patty, a cardiac monitor technician, realized his symptoms matched COVID-19. She was terrified. To make matters worse, she had to go into quarantine herself. She couldn't stay with her husband. She couldn't see the family she needed for support. (Patty never got sick.)

"It was hard to process," she recalled, "especially the next morning when they told me he was positive for COVID." Then came even more devastating news: David was going downhill fast and would need to be put on a ventilator. Doctors asked Patty if she would consider a do-not-resuscitate order.

No, absolutely not, Patty said. Her husband had a lot of life left to live. She rushed back to the hospital and, unable to visit David – VA was closed to visitors – she sat in her car for hours. Nurses set up a brief video feed, and doctors asked to try experimental medications.

Over the next couple of weeks, David battled COVID-19 and pneumonia. His blood pressure dropped repeatedly. He had a minor heart attack. Doctors tried taking him off the ventilator with dismal results. No one thought he was going to make it.

It was "hell," Patty said. "He was there. I was here."

"You just felt really helpless," added David's son, Daniel James, who was stuck in Florida. "In a normal situation, we'd be rotating shifts and be able to talk to the doctors in person instead of them video chatting with us and showing him lying there. Sometimes he would flutter an eye when we got to talk to him."

But Patty was right: David wasn't ready to go. After 17 days, he became the hospital's first COVID patient to be successfully taken off a ventilator.

"I could breathe again," cried Patty, crediting the ICU nurses. They "were unreal, so caring."

The hospital remains a hazy blur for David. His first memory is of trying to stand. "They had me in one of those cradles, and they put my feet on the floor. I just collapsed." He had lost some 50 pounds and couldn't walk. He needed oxygen and physical therapy.

David had a birthday in the hospital, and staff surprised their "miracle" patient with a party, complete with cake and orange sherbet, and his family joining in via video screen. They even gave him the perfect present: He was going home soon.

"I tell people, 'You've got to try the VA.' The VA in northeast Ohio is the greatest."

"He pushed his walker out of the way at one point and showed us that he could take steps, that he was walking," said Daniel. "He was laughing. He was joking. You know, he was back. It was just amazing."

VA staff lined the halls to cheer David on his way. His motorcycle club met him along the road, and a police officer friend gave him an escort, sirens blazing. Kids and grandkids waited outside his house. (The couple has a blended family of five children and eight grandchildren.)

David had a long way to go in his recovery, but he was "ecstatic" to be home. He still suffers from occasional confusion and nightmares. He still needs an inhaler four times a day. But thanks to the VA, he's alive. He met his new great-granddaughter. He walks several miles every day. He drives his school bus.

"If I had gone to another hospital, I'd have been dead," he said. "I tell people, 'You've got to try the VA.' The VA in in northeast Ohio is the greatest."

VIRTUAL CARE

VA leads movement in response to COVID-19.

Last March, as COVID-19 began to ravage the country, staff throughout VA Northeast Ohio Healthcare System faced the biggest challenge of their careers. They knew their elderly patients might be hit hard by the disease. But while they temporarily shut down outpatient clinics and planned for worst-case scenarios like running out of ventilators, they knew that they couldn't discontinue routine care. Veterans depended on them.

So doctors, nurses and administrators turned to the VA's Video Connect program. They overhauled the VA Northeast Ohio Healthcare System practically overnight, transforming it into an organization that provided many day-to-day services virtually.

Staff worked around the clock to set up computers and tablets, and to teach more than 115,000 employees and veterans how to access virtual visits, according to David Chmielewski, chief of the hospital's Community Outpatient Service.

> **"This made a lot of people really reconsider how they provide healthcare."**

Virtual appointments increased 2,816 percent over the previous year, according to the telehealth team. Between March and December, there were 50,771 virtual visits, and 23,425 patients used the service for the first time.

"It was staggering," said Chmielewski.

"You can do a lot of chronic care management," explained Dr. Corinna Falck-Ytter, associate chief of staff for primary care. Patients who are stable but may have diabetes or hypertension or sleep apnea are generally good candidates. "Making sure that they're taking their medications and their blood pressure is controlled–those are easier to do via video. Of course, if somebody says 'I have chest pain' they have to come in."

Patients don't have to spend hours driving to doctors' appointments when using VA Video Connect. It keeps high-risk veterans home more. Relatives can be more involved in care decisions. (A provider can conference in a third party, such as a spouse or a child.)

Elderly patients, many of whom weren't tech savvy, were a particular concern in the transition, but VA did everything possible to provide support and access. For example, the telehealth team processed 4,744 test calls with patients.

"People were going to church virtually," said Chmielewski, explaining that many Veterans became more comfortable with video chatting as the pandemic progressed. "It wasn't a foreign language anymore. You could say something like, 'Do you Zoom with your grandchildren?'"

The VA even loaned preprogrammed devices, complete with cellular network plans, to patients who didn't have any other way to connect.

Veterans can also visit local clinics and connect virtually with specialists who might be located an hour or more away. Nurses take the patients' vital signs, and will notice if something is wrong, Chmielewski said.

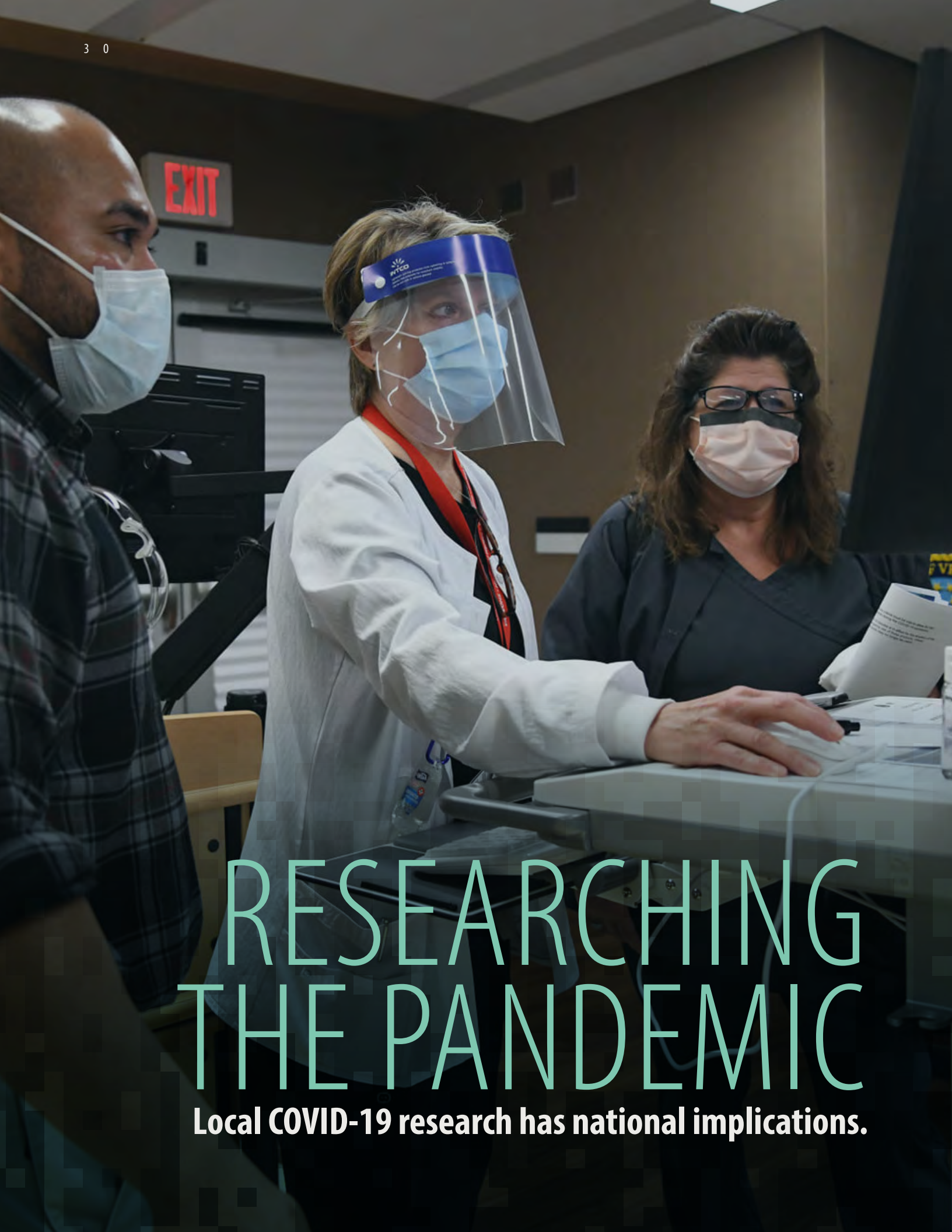
If necessary, providers can conduct appointments over the phone, although it's not as effective, said George Kasidonis Jr., a clinical social worker who received an award for carrying out the most virtual visits in the VA. On a video call, "you get to read body language and facial expressions." If someone is in crisis, he can send emergency help via VA Video Connect.

Providers can also share their screens and resources with patients. They can glimpse patients' home lives.

"I routinely tell my patients to [check their] blood pressure while online. I can watch them do it, see if their technique is acceptable, and I have immediate data," said Falck-Ytter.

Virtual visits, said Rachael Oberlander, facility telehealth coordinator, have "nowhere to go other than up," even after the pandemic tapers off. Patients that "like it, are going to continue to use it. As we see new generations, we'll also see more tech savvy users demanding virtual visits."

"This made a lot of people really reconsider how they provide health care," added Chmielewski. "We can cut [in-person] visits down from every three months to maybe once a year or every two years. Nobody ever wants a global pandemic to hit, but it did really take the health care industry and flip it upside down."



RESEARCHING THE PANDEMIC

Local COVID-19 research has national implications.

Scientists and researchers have long believed that the world was overdue for another pandemic like the 1918 Spanish flu outbreak that killed millions. Still, many were caught off guard at just how rapidly COVID-19 began spreading in early 2020.

Infectious disease physicians and other experts at the Louis Stokes Cleveland VA Medical Center followed news stories and scientific studies carefully. All too soon, they were conducting their own research.

"Infectious disease has been a really strong discipline in our VA," said Dr. Robert A. Bonomo, an infectious disease specialist and associate chief of staff for academic affairs at the hospital. "Where should our research priorities be reconfigured as a result of COVID? What were the important studies to get out there quickly?"

Bonomo served on the steering committee for VA CURES, which is the VA's national response to COVID, reviewing research applications and prioritizing "the biomedical efforts to combat the virus."

Locally, he said, doctors are examining the immunology of COVID infections, including how long antibodies will last after a vaccine, "which is very, very relevant. We want to know how long we're going to be protected."

The hospital's research program is so well respected nationwide that it was the only VA medical center invited to participate in the Pfizer vaccine trial, which kicked off with historic speed in May. About 62 Veterans and employees volunteered.

"Within like a week of having the RNA sequence of the virus, [Pfizer was] able to design a vaccine," said Dr. Curtis Donskey, an infectious disease specialist and chair of the hospital's Infection Control Committee. "They were ready to start doing trials about two to three months [later]. That's never really been accomplished before."

"We were thrilled to be asked," he continued. "We want Veterans to be involved in these types of trials. It gives us some assurance that the vaccine works well in our population. The trial helped us be very well prepared to implement the vaccine." They already knew how to give it, handle it. They already had one of the special freezers to store it at negative 70 degrees.

While VA researchers work to eradicate COVID with the vaccine, they're also helping develop treatment protocols and guidelines.

VANEOHS' Chief of Gastroenterology and Hepatology, Dr. Yngve Falck-Ytter, helped author the Infectious Disease Society of America's "Guidelines on the Treatment and Management of Patients with COVID." His work with IDSA was instrumental in stopping the use of hydroxychloroquine as a therapy for COVID. There are, he said, no studies that show that it helps, whereas it can have serious side effects like heart arrhythmias.

"Luckily, people read our guidelines and the use plummeted," he said. Nationally, VA became one of the first health care systems to advise against its use.

VA's goal was not only to heal COVID-stricken Veterans, but also to also to protect staff. The hospital managed to provide enough personal protective equipment in spite of a nationwide shortage.

"There was a concern that people would be working under hazardous conditions," said Donskey. However, it soon seemed like the COVID ward was the safest place in the hospital because everyone was so careful.

A study confirmed it: No employee on the COVID ward or in the ICU had a high-risk exposure at work for seven months, and risk decreased over time as doctors learned more about the disease, Donskey said.

For example, fist bumps have long been thought to be safer than shaking hands. Donskey put that to the test. After touching keyboards contaminated with a benign virus, volunteers exchanged both greetings. Both transmitted the virus. "We would recommend using an elbow bump or avoiding any contact greeting," Donskey said.

He also studied different types of disinfectants. Both steam and ultraviolet light proved to be extremely effective at eradicating viruses, he said – especially steam. After hearing that rice cookers are routinely used to decontaminate masks in Asia, Donskey and his team decided to experiment. Rice cookers turned out to be excellent sterilizers.

Throughout the pandemic, Bonomo said, such research has been key, but so is flexibility.

"I'm very proud to say that the VA has an emerging infectious diseases network," he said. "You can't anticipate everything, but you can develop systems to help you pivot fast. Supporting research programs that anticipate significant challenges to our health care system is very, very important to mitigating pandemics."

HOPE ON THE HORIZON

COVID-19 vaccines are delivered to VANEOHS.

The year 2020, the year of the pandemic, ended on a hopeful note: More than one vaccine had proved effective against COVID-19. While this was welcome news to VA Northeast Ohio Healthcare System officials, it wasn't a total surprise. The hospital was the only VA healthcare facility to participate in Pfizer's vaccine trial, and was ready to begin vaccinations the day after receiving its first shipment.

The vaccine's development was rapid not only because much of the world's scientific community focused on it, but because of the type of vaccine itself.

RNA vaccines can be produced and adjusted rapidly, explained Brett Carroll, a doctor of pharmacy and the healthcare system's vaccine coordinator. This one is 95 percent effective, and "tells our bodies to make a partial spike protein, the little red spikes you see all over COVID. Your body recognizes that, and fights it off."

"Although the timeline was very rapid," said Dr. Curtis Donskey, an infectious disease specialist and chair of the hospital's Infection Control Committee, "all of the usual safety measures were in place. This was just like any other clinical trial. They had data from 30,000 participants by the end."

In fact, while previous vaccine trials may have lasted longer, they've had fewer participants, said Tim Heimann, a doctor of pharmacy who serves as assistant director of the hospital's Community Outpatient and Pharmacy services. "If you look at vaccine studies, that first month is when 99 percent of the long-term negative effects happen. We are way beyond that."

Most of the reactions are mild, said Carroll, injection-site discomfort, and occasionally fevers after the second dose. "That's your body's immune response."

The VA began vaccinating staff members Dec. 16, immediately followed by long-term care residents.

"There were lots of tears of joy," from exhausted health care workers, said Heimann.

Outpatient Veterans 75 and older became eligible for vaccine appointments after the first of the year, and the hospital plans to vaccinate 100,000 Veterans over six months. It's challenging, said Heimann and Carroll: Guidelines are ever changing. No one wants elderly Veterans to stand in line for hours. Patients must wait 15 minutes after receiving vaccines, and they require enough room to socially distance. Then, everyone must return for round two.

It's "a daunting task," but it's worth it, said Heimann. "If you get a vaccine, you're not going to be sick enough to be in the hospital. Every day, we're giving 300, 400 or 500 vaccines," and that number is expected to reach at least 1,200 a day. "By the end of the day, you made a difference."

"I've never seen anything so well run," said Dr. Sarah Augustine, associate chief of Medicine Service. It's "phenomenal."

The vaccines themselves require special handling. They must be stored at -70 F, but the hospital already had a special freezer from the trial. VA managed to track down two more, as well as several battery-powered refrigerators and freezers.

"There's only two sites in our region that can house the Pfizer [vaccine]," Carroll noted. "Everybody else is splitting the allotments of Moderna. This gives us a lot more vaccines so we're able to take care of more people in a rapid manner. It's good for five days once it's refrigerated. We receive it here in Cleveland and we ship it down to Akron twice a week, and we're able to take care of Veterans in that area. We'll be doing the same in Youngstown, and hopefully at some other sites too in the future."

The team was initially short vaccinators, so nurses and doctors volunteered to help give injections.

"Normally, docs don't give vaccines," said Augustine. "People literally cry when they go down to that clinic. It is one of the few positive things we've had in a long time to combat this disease.

"Just to see the lobby full of socially distant Vets waiting for their vaccines – I've had Vets cry when I gave it to them. I've had Vets pull out their vaccination card from when they were vaccinated for polio. The things you hear in this clinic are just unbelievable. That has been very inspiring for a lot of staff."

Fidelis Uzomah, a nurse in the medical center's long term care wing, was inspired as well. He was one of the first employees to receive the vaccine in December. It was his duty to protect both his patients at work and his family at home, he said. He even convinced several coworkers and residents to get their own shots.

"I see the vaccine like a shield armor that can help me protect my patients," he said. "They need me here. If I'm sick at home, I'm not taking care of them."

Still, "the vaccine is not an immediate solution," Heimann cautioned. It takes time to develop an immune response, and no one knows if recipients can still transmit the virus. "Two years from now, we'll know that answer. You'll see us masking for quite a while."