



Note: This resource was published in 2020 and has not been updated. Contact ASPR TRACIE if you need technical assistance.

Lessons Learned

- Consider separate EDs/ treatment areas.
- Plan to continue providing care for non-COVID emergency cases.
- Review facility blueprints to understand ventilation and negative pressure options/gaps.
- Build bench strength now; capitalize on local partnerships.
- Minimize onboarding process time; maximize use of volunteers and contractors.
- Create or update organizational charts that delineate chains of command for new/related tasks.
- Assign one person to inventory and monitor PPE.
- Determine how, when, and where you will transfer patients.
- Use relationships with community to help with contact tracing. How will you handle positive cases?
- Encourage staff to use (and easy access to) mental health support.
- Communicate honestly and clearly; maintain your facility's home page.
- Drill your pandemic plan and incorporate lessons learned.

COVID-19 and Tribal Hospitals:

Tuba City Regional Health Care Corporation

In May 2020, ASPR TRACIE hosted the webinar [COVID-19: Healthcare System Operations Strategies and Experiences](#) to highlight pandemic response experiences from some of the hardest hit hospitals at the time. Commander Sara Jager, M.D., Chief Medical Officer with Tuba City Regional Health Care Corporation (Arizona), shared her experiences from a tribal hospital that serves Navajo Nation; she updated some of the information from the webinar in July 2020.

While I represent the rural perspective, we share some of the same challenges as big cities; we just apply different solutions. [Tuba City Regional Health Care Corporation](#) is a tribal hospital located in Northern Arizona and is considered a “638 site,” meaning we operate under the Indian Self-Determination Act.¹ It is also a Level 3 trauma center. We handle nearly 44,000 emergency department (ED) and 100,000 outpatient visits a year, and we have a pediatric ward and medical surge and respiratory care units. We have a heliport, but no fixed wing assets (they are on call for patient transfer). We provide a variety of other services including obstetrics, diabetes treatment and prevention, and mental health assistance. We provide nearly 20,000 dental visits annually.

We are the largest employer in an 80-mile radius with 1,200 employees. A third of our budget comes from the federal government and the rest we bill mostly through the Centers for Medicare & Medicaid Services. We are using 40 inpatient beds now to essentially save us from financial ruin while our outpatient visits are at less than 25% and we are not doing any elective surgeries.

The Navajo Nation, with a population of approximately 170,000, is the size of West Virginia and is located in the Four Corners area (Arizona, Colorado, New Mexico, and Utah). These four states have different personal protective equipment (PPE) supply chains and testing strategies and structures. Navajo Nation has a president, but there is not a unified command structure for our governments or hospitals. Some hospitals are designated Federally Qualified Health Centers (funded through the Indian Health Care Improvement Act) and the others are 638 sites like ours.

Our hospital serves about 6,000 square miles. Much of the population in Tuba City has underlying health conditions. We have 2.8 times the national level of people with diabetes. We had four times the mortality rate for Native Americans during the H1N1 pandemic. Much of our older population is still Navajo speaking and live in traditional hogans (Figure 1). Nearly 30,000 patients comprise our primary catchment area and 50,000 are eligible for specialty care. One-third of our residents do not have running water, and about 10% are without electricity.



Figure 1. Photo of traditional hogans.

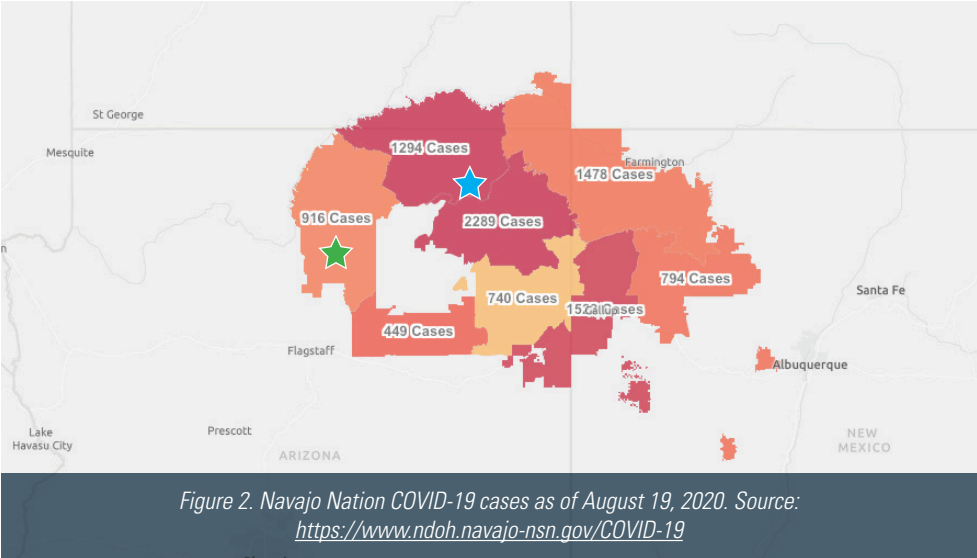
¹<https://www.hrsa.gov/opa/eligibility-and-registration/health-centers/tribal-urban-indian/index.html#--:text=Tribal%20Contract%20or%20Compact%20Health,American%20Indians%20and%20Alaska%20natives.>

Table 1 illustrates how Tuba compared to other states and cities in the U.S. specific to COVID-19 (as of May 8, 2020). If we were a state, in May, we would have had the third highest incidence or burden of disease. The hospital has been at capacity since March 18th. We are turning away admits from our own ED and from referring facilities in the smaller outlying communities.

Table 1. Geographic Regions by Unadjusted COVID-19 Incidence Rate per 100K (May 8, 2020)

Geographic Region	Unadjusted incidence rate per 100,000 (as of May 8, 2020)
New York State	1,632
New York City	11,283
Navajo Nation	1,133
Western Navajo Agency	1,233
Massachusetts	1,049
Rhode Island	963
Louisiana	648
New Orleans	~1,600

As of July 1, we have admitted a total of 265 COVID patients and transferred another 75 to a higher level of care. A total of 91 Tuba patients have been intubated; 57 were done here on site. Of those intubated, 45% have died, 30% went home or to a skilled nursing facility, 20% are still hospitalized and the status of 5% is unknown due to poor feedback mechanisms from accepting facilities. Our total number of deaths is 61.



The map in Figure 2 highlights the Navajo Nation service area, color coded by the number of COVID cases as of Aug 19, 2020. Chilchinbeto, indicated by the blue star, is where a super spreader event occurred at a church gathering on March 6th. We had patients arriving here (green star) in our hospital by March 12th, but we did not know it. Once we identified that we did have positives, we entered “Code Green” disaster response, activating our plan and allowing people to work outside of their specialties.

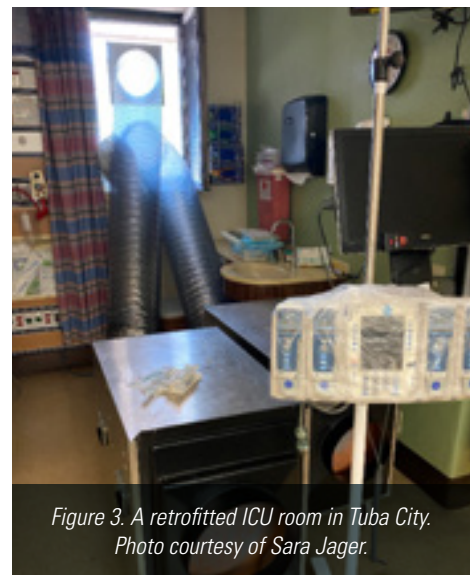
Staffing Issues

We scrambled furiously to convert our pediatric ward to a respiratory care unit and, as of July 6, 2020, the pediatric ward remains converted; we have not admitted any children since March 17. Our nurses became adult respiratory providers. We set up tents outside for COVID-19 testing, and our six-bed ICU quickly became a COVID-only ICU. We quickly created separate EDs—one for COVID patients and another for non-COVID patients. It was very important for us to show the community that it was still safe for them to come to us. Our hospital was built in 1967, and it has been fit and refit time and again since then. We did not know where our negative pressure rooms vented or where our ducts led; we had to bring in an engineer to help, taking time and money. We learned we did not actually have any negative pressure rooms and ended up retrofitting nine rooms (two in

During a pandemic or other emergency, healthcare facilities face significant challenges to quickly onboard additional healthcare providers when hospital admissions and ICU occupancy increase rapidly. This [onboarding checklist](#) can ensure new employees are compliant with administrative requirements, familiar with the mission and culture of the hospital, and understand expectations.

obstetrics, two in the respiratory care unit, and the entire ICU). Figure 3 is a photo of an ICU room that we retrofitted. The equipment is very loud, making it difficult to communicate with patients in person and loved ones and interpreters via Zoom (especially for our older population who may only speak Navajo).

We assumed help was not coming, and that we would have to figure out how to manage the response using existing resources. Three Disaster Medical Assistance Team (DMAT) nurses came to help, however, and encouraged us to address our staffing challenge. We had the facility, the beds, and the infrastructure, but we did not have the human resources and that remains a problem. Very early on we converted Certified Registered Nurse Anesthetists who had previous experience and felt comfortable returning to the bedside to ICU Registered Nurses. I reassigned some of our outpatient nurse practitioners (who maybe had not worked as a floor nurse in 15 years) to the respiratory care unit and the ED. Our certified medical assistants helped with lab draws in the respiratory care unit.



*Figure 3. A retrofitted ICU room in Tuba City.
Photo courtesy of Sara Jager.*

Nursing recruitment in rural areas like ours is very difficult. At baseline before coronavirus, we had a 14 percent vacancy rate. We had no local bench to call upon when COVID-19 hit. The nearest facility is in Flagstaff (74 miles away). The U.S. Department of Veterans Affairs and University of California San Francisco augmented our nursing staff for several weeks. We are not a very nimble organization when it comes to memoranda of agreement (MOA)—we have not had a disaster to respond to in the past decade. We have been fighting the usual battles of poverty without a disaster to push us to get an MOA in place. It is so important to develop your partnerships to bring in staff for these types of short-term assignments.

It is also important to note that this process is very burdensome for your human resources, information technology, and clinical education staff; maximizing your onboarding process (to about four hours or less if possible) can help you best utilize all the volunteers or the contractors that come to help. We did not handle that very well at first and it cost us many days. Planning to use the rest of your staff in a pandemic is also critical; I have a lot of physical therapists, dentists, and optometrists that I used in other areas. Some work on our contact tracing teams. Some ancillary staff from my clinic are laundering scrubs and gowns; my dentists were sewing gowns for five weeks because we were not able to get our orders of PPE.

We had a hard time getting our hospital leadership to accept a pandemic was coming and it was not until people got really sick that we changed our processes and created our respiratory care unit. But before we did, many staff were exposed and some of them got sick and some died. In a small community, no one is untouched by this pandemic. Everyone knows a family member who has died, staff members have died. At one point, I had three secretaries out sick with coronavirus. They did not contract it through work; it came from the community and their family members. We do not have the time to talk about or mourn staff member deaths, friends, and family deaths, and I am sure this will have a significant effect on our providers and community members. Taking care of your own is very hard on your heart; it is important to have mental health services in place and encourage their use.

Personal Protective Equipment

With regards to PPE, inventory your stock early on, then assign a single person to monitor this all the time. We found that the insecure supply chain for PPE and the ever-changing PPE recommendations caused a lot of staff insecurity. We did try to buy it ourselves. We went to Arizona and they referred us to Navajo leadership but Navajo Nation did not have any stockpile to supply us either. We ended up ordering millions of dollars of PPE, hoping that our orders were big enough to be counted among all the other large orders being made across the country. We ordered paper gowns at the end of February; they arrived at the end of May. We ended up making our own and the community support

was great, but ordering PPE and receiving and tracking items made and donated by the community needed a significant amount of organization. I used my orthopedic surgeons who are well connected in the community and know how to get things done. While they are not performing surgery, they are organizing decontamination of N95 masks and gown patterns.

Patient Care and Transfer

In an attempt to stave off intubation and provide better comfort care, we acquired six new high-flow nasal cannula. We also acquired HEPA filters for our negative pressure rooms, and tents were erected that we used for testing. We realized that we needed a lot of signs for different areas; it has been challenging to get residents who have known the way the hospital has worked for 50 years to try to do something different. We have yet to hold on to our intubated patients; once they are intubated they wait here two to six hours and then there are they are on their way to a larger facility in Phoenix.

Another challenge we faced was determining how and which patients to transfer. Our helicopter is busy all the time; it is assigned to us intermittently. This has not been a great solution. The State of Arizona was a little slow to figure this out. Our physicians had to call around, trying to find beds and other facilities for the patients we had to transfer. The Statewide Transfer Center has been invaluable. It is also important to reach out to local schools and hotels to determine if they can serve as alternate care sites.

Communications and Contact Tracing

Local health departments can help with contact tracing and community mitigation and support. We were fortunate because we had two physicians that had graduated from the Centers for Disease Control and Prevention epidemiologic intelligence service fellowship and a very well established and connected medical staff that's been here for 30 plus years that understood our surrounding areas and their assets and their weaknesses. Some neighboring facilities have not been so lucky; they are primarily staffed by locums, have had trouble retaining staff, and have fared far worse. This has impacted our ability to operate because the disease is propagating in these communities. At week 9 we had not yet peaked. We were able to transfer and discharge and intubate and medicate, but until the community started changing their behaviors, the disease propagated. Navajo Nation enacted strict curfews and "lockdown" as well as mandatory masking, in an attempt to stop the spread of the disease beyond the hospital walls. As of July 6, I can say I think it worked.

It is critical to develop a contract tracing plan now. You will no doubt have many positive tests; how will you track people down, notify them, and how will you encourage patients to isolate from the people they live with? Here we have clustered living conditions, and often 10 people live in one home. We no longer refer to cases as "persons under investigation," we call it "family under investigation."

When it comes to communicating with your community, be honest and punctual. Do not try to hide what is happening, as you will risk community distrust. At first, we tried to minimize the effect on our community, and community members did not know what was happening at the hospital. They were looking to us for guidance and we were not giving it. It is important to identify your preferred community media outlets (including both social media and newspaper). Consider putting someone (e.g., public affairs staff) in charge of updating your hospital's homepage daily. Patients remain fearful of returning to the hospital now four months into our response. It is hampering our ability to deliver care for them and is an ongoing struggle as the rest of the state is facing overwhelming disease burden.