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Managing Patient Surge in Rural Areas: Experiences from Gallup Indian Medical Center

For many health care facilities and systems, patient transport can pose a host of logistical challenges. In many rural areas, however, it is more common practice, though often strained by various factors, including distance to receiving hospitals, geography, available mode of transport, and—in many cases—available staff to treat, transport, and receive patients. ASPR TRACIE met with Dr. Emily Bartlett, an emergency medicine physician who has worked at the Gallup Indian Medical Center in New Mexico (GIMC) since 2020 to learn more about how the center determined which patients to transport and which to treat in place as they overcame related challenges (e.g., no available beds in the region, not enough staff to accomplish patient transport). She was joined by three public information officers from [the Navajo Area Indian Health Service](#) (NAIHS): Brandon Wyaco (NAIHS), Ryan Goldtooth (Chinle Comprehensive Health Care Facility [Arizona]), and Pamela Jimm (GIMC).

■ John Hick, ASPR TRACIE Senior Editor (JH)

Can you provide some baseline information on the Navajo Nation and health care facilities?

■ Brandon Wyaco (BW)

Navajo Nation is one of the largest reservations in the U.S., with over a quarter million living in New Mexico, Arizona, and Utah (the reservation is approximately the same size as West Virginia; additional Navajo Nation members live in other states across the country). There are 13 health care facilities in the NAIHS, including three centers with trauma designations: Gallup Indian Medical Center (Level 3), and Northern Navajo Medical Center (Level 4). Chinle Comprehensive Health Care Facility is working to obtain a level 4 trauma designation. There are five service units within Navajo Nation. Each unit has satellite clinics based around the reservation. Indian Health Service provides health care to Navajo Nation and surrounding communities (including the Hopi, Zuni, Acoma, and Laguna Tribes). Dr. Bartlett works in a hub center, which serves as a referral center for Navajo Nation members who primarily live in Arizona and New Mexico.

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■ Emily Bartlett (EB)

GIMC is one of the largest facilities on the Navajo Nation. We have orthopedics, general surgery, and obstetrics coverage. We are licensed to up to 99 beds, but often operate with fewer due to nursing shortages. We do not offer inpatient dialysis, and we have a small intensive care unit (ICU) that can take 4-6 patients depending on nursing staffing. Our emergency room (ER) has 25 care spaces, including 19 rooms where patients who need to be “horizontal” can be cared for and a fast-track area for lower acuity (or “vertical”) patients.

GIMC is located in the western New Mexico town of Gallup (population 21,500), just off the border of the reservation, and about 100 miles from Albuquerque, where the only Level 1 trauma center in the state is located. Flagstaff is the next major city to our west. Though we see primarily Navajo and other indigenous patients, as an ER, we will see any patient that comes through but the only patients we admit who are non-IHS beneficiaries are trauma patients. A major highway runs through town, so we often receive major trauma patients from that area, and every ill patient from the catchment area will come to us first, then perhaps get transferred.

■ JH

Prior to the pandemic, was GIMC able to give much attention to disaster preparedness and mass casualty incident preparedness?

■ EB

Yes, there is a disaster preparedness plan that is revised annually and as part of the trauma program, there is usually an annual mass casualty incident and preparedness event in the community that includes first responders. There is recognition that being close to a highway, we need to be prepared for significant traffic incidents and industrial accidents.

■ JH

It sounds like your hospital had a reasonable amount of space that may have allowed for some expansion. How did you increase capacity?

■ EB

During the pandemic, one of the biggest challenges to expanding in-patient care was not the lack of physical space; it was staffing shortages, and I know other facilities were affected, too. There were alternative care sites (ACS) developed on Navajo Nation for low acuity patients. We used those a bit less because it was difficult to find transportation between the hospital and ACS. Emergency medical services (EMS) crews in the area already have long transport times, limited crews, and work 48-hour shifts. Another challenge was that the facility was not designed with an infectious disease like COVID in mind. We had one negative pressure room in the original ER space, which we used very judiciously at first. Early in the response, we created a two-bed negative pressure tent outside of the ER to augment capacity, and that was followed by further upgrades made in real-time to augment air flow even more.



Photo courtesy of Dr. Emily Bartlett

■ JH

Did you do any separate triage for lower acuity care patients?

■ EB

While the negative pressure tents were for higher acuity patients, we also used outdoor, semi-open tents for triage and lower acuity care patients for a period of time while upgrades were being made to the facility. This posed a significant challenge, as it can get quite cold in the winter, and heating the tents was a challenge. This was an appropriate adaptation, but not an ideal long-term solution.

■ JH

What was peak census at worst of the worst?

■ EB

Peak daily census in the ER during the pandemic was 130 patients per day, compared to a baseline of 90-105.

■ JH

From a staffing standpoint, did you use any federal, state, or local resources? Did you have to adapt your staffing in different ways in the facility?

■ EB

Disaster Medical Assistance Teams (DMAT) teams helped with staffing. Nursing staffing for both the ER and inpatient unit were our main limitation. We developed clinical guidance that allowed us to use EMT and paramedics in the ER setting to offload as many nursing tasks as safely as possible. They mainly worked in pods we created of patients with fewer needs for nursing interventions. An internal IHS critical response team of consultative experts came through to provide guidance (but not staffing). One challenge we faced with using DMAT and other teams was credentialing and onboarding, both of which consumed a lot of time and delayed the onboarding and hiring of longer-term staff. Human resources became a limiting factor in our response.

■ JH

How did you expand ICU capacity?

■ EB

At one point, we were discussing when to declare crisis standards of care, and one measure we considered taking was expanding nursing ratios on the floors. We wanted to be sure we took all possible steps before saying we couldn't take any more patients. We also talked about how to identify and manage patients who were likely to decompensate pre-transfer.

Our ICU is staffed by internal medicine physicians and had six inpatient beds and related nursing needs, but we did expand, and often boarded critically ill patients in the ER for days at a time. One way we mitigated that was to develop protocols and checklists to ensure that routine care that is standard on in-patient units (e.g., administering scheduled medications and home medications) was standard in the ER for patients there for several days. For example, a patient diagnosed with diabetic ketoacidosis whose entire course would traditionally be completed inpatient might be managed in the ER and eventually discharged if no beds became available. We frequently consulted with an inpatient hospitalist for assistance with patients who wouldn't typically be treated in the ER. We also used teleconsultation programs. The University of New Mexico has a provider access line and an image sharing platform; while not a formal telehealth service, we used these tools to consult with an intensivist for recommendations on both pediatric and adult patients. The Brigham and Women's Hospital has an outreach program focused on internal medicine and offered consultation with some of their pulmonary/critical care doctors on rounds on the inpatient side. These were some of the ways we augmented our critical care capabilities in the ICU. Beyond the ER and the ICU there isn't another space in our facility that is appropriate for critical care.

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The volunteers did a great job, too. Team Rubicon, Global Health Force, Project Hope, and others traveled to Navajo Nation and provided the volunteer staffing Dr. Bartlett mentioned. Their passion to provide the best quality health care, not just related to COVID-19, but overall, was very appreciated.

Without their help, we would have been very limited in in staffing situations for our facility. We were able to put those teams where they were needed most, and this helped minimize the amount of staff burnout we experienced.

Lastly, we would like to say thank you to all Gallup Indian Medical Center employees for their commitment and dedication during this pandemic.

- Brandon Wyaco, Navajo Area Public Information Officer

■ JH

Your point about standard work is so important; those checklists are so helpful for conditions we don't deal with on a daily basis, especially during a surge. From a supply standpoint, did you have any issues with oxygen supply or high-flow systems?

■ EB

We use bottled oxygen in the low acuity spaces in the ER and the more acute area has wall oxygen. At one point, the supply for in-patient units via the wall oxygen was so strained, we had to limit the rate of oxygen administered to patients to 4 liters per minute to avoid overtaxing the overall hospital system. Another challenge we faced was that the oxygen in the negative pressure tents (for high-acuity care patients) was supplied by H-tanks, and some treatments burned through oxygen very quickly. We would then have to call someone who worked in the hospital boiler room to replace the tank; this took some getting used to.

We had a sufficient inventory of ventilators, but we had limited respiratory therapist staffing. Managing overall supply flows was also a challenge, though having one of our surgeons serve as an incident commander and a central figure who could understand and support our ER supply needs was helpful since so much of the patient surge occurred in the ER. People were being tasked with things outside their core duties; at one point, for example, someone who worked in the dental clinic was tasked with the operations supply chain monitoring role (specifically tracking critical care equipment as we were going through a higher rate than normal). Sourcing personal protective equipment (PPE) was also a challenge, but we were able to access a sufficient amount.



Photo courtesy of Dr. Emily Bartlett

■ JH

Most smaller communities have maybe two ambulances that can be staffed at any given time. On top of that, it sounds like they were making several transfers each day, many miles away. What was done to augment EMS? How did they cope with those additional responsibilities?

■ EB

I would just like to acknowledge the incredibly hard work our EMS staff did for the community during the COVID response. Prior to the pandemic, we would send patients with more complex medical needs to the University Hospital in Albuquerque (and some community health care systems there), Farmington (where there is a regional medical center), Flagstaff, and then Phoenix. Even at baseline, most transfers occurred by flight due to limited ground EMS capacity. Taking a patient to Albuquerque and back would take a minimum of five hours on the ground; there simply are not enough ground crews in the area to accomplish this type of patient transfer. Air transfer continued during the pandemic, but in addition to having limited flight teams, bad weather often challenged patient transfer. So did calculating oxygen needs during transport; we had to be mindful of various modalities and running out of oxygen during air transfer.

■ JH

As your transfer management worked across multiple states, how did you identify beds?

■ EB

You need to have an accepting facility with an appropriate bed before you can even consider calling for patient transport. Many facilities were strained during the pandemic which meant we had to expand the radius when we searched for an accepting facility. At baseline, we made individual calls to two or three hospital systems in nearby states on our internal list, and this was based on patient need. During the pandemic, the radius expanded, and we often had to make 20-30 calls to find a facility. Initially, New Mexico developed a hub and spoke model, where smaller facilities would transfer

patients into a regional hub, but the challenge we encountered with this model was that the regional hub was frequently at capacity and could not accept additional patients, leading us to frequently expand our search for a bed across state lines.

■ JH

Making those calls is very time consuming—whose responsibility was that?

■ EB

During the pandemic, we detailed staff from clinics to help with making the calls throughout the day (but not 24/7). This person had a checklist with questions and answers to provide to the receiving facility (e.g., the patient's most recent lab results). This really is a time-consuming task, as you have to make a call, then often wait for a call back to provide more information. This process can take close to an hour. Our ER clerks did not have the bandwidth to take on these additional tasks/make more calls; often the ER physicians did make the calls themselves when other resources were not available.

Later the state set up a patient transfer coordination line, limited to general medical ICU-level care patients (e.g., a COVID-positive patient on a ventilator would be transferred via that line, but we would not use that line for someone with a gastrointestinal bleed who needed an upper endoscopy). When that was functional, that would decrease the number of calls we had to make, but there were lengths of time when there were simply no ICU beds available in the state, regardless of them operating significantly over ICU capacity. One benefit of the transfer line was that we were quickly informed that there were no ICU beds left in the state, and we reverted to calling out-of-state facilities.

■ JH

How did you prioritize who to transfer?

■ EB

We did this at our facility level. If we had a patient who needed a time-sensitive intervention or service we couldn't provide, we would prioritize them for transfer. During the pandemic, we would have a "whole ER Team huddle" to determine priorities and allocate resources accordingly. That said, however, some smaller rural facilities nearby might have had a critically ill patient (for example, a patient with an epidural hemorrhage), but there was no way to communicate or prioritize like that between organizations in the same way we did within our own hospital.

■ JH

Arizona has a call system in place for rural hospitals called REACH—has there been any additional regional dialogue about transfer management based on this or a similar model?

■ EB

REACH is an adaptation of [a central call line Arizona](#) used during COVID to help with patient transfer between rural facilities. It is focused on IHS, 638 (tribally managed hospitals) and critical access hospitals in the state because many of the transfer requests during the COVID pandemic originated from those types of facilities. Under this program, a centralized call center seeks placement for patients on behalf of facilities and takes into account geographic proximity, services needed and patient acuity. The Arizona Department of Health has presented on the REACH model to the New Mexico Department of Health; New Mexico is considering replicating or joining Arizona to create a more regional program in the future.

■ JH

Who manages the coordination calls?

■ EB

This was a grassroots effort that was initiated by Dr. Margaret Greenwood-Ericksen (a University of New Mexico faculty member) who was tasked by her chair with doing outreach to IHS hospitals during the pandemic; it is now lead by Dr. Jeanie Ringelberg (also with IHS). While not formally supported by the state, it has been recognized as having value. One challenge with these calls is the administrative lift associated with sending invitations and keeping the roster updated. We also found during the pandemic that there were calls happening amongst the major metropolitan hospital systems. We realized during the pediatric RSV surge that occurred in the winter of 2022-2023 that a lot of the "players" had changed, so it took some time to determine who to connect with again.

■ JH

As you look forward, are there other lessons you are incorporating, or changes you would like to see made in the future?

■ EB

The increase in ground transport capability driven by the pandemic response will continue to improve our standard operations. For example, we now have a hospital-based and staffed ambulance that can be used for inter-facility transfers when needed. We've also been able to monitor trends in patients with respiratory complaints. In fact, last year, during the surge in pediatric patients with respiratory illnesses, we were able to detect the uptick. Those same regional coordination group calls made it possible for us to rapidly share information and prepare for and treat pediatric patients.

That communication network served as a platform to address other challenges. We still meet once a month and will increase frequency in times of stress. We can also bring in expert teams to speak to the group (e.g., pediatric intensivists) at meetings and answer questions.

Critical care supply management remains a priority, both due to changes in needs and disruption in supply chains. We have a workgroup looking at this.

As far as flexibility of staffing, we have increased the number of health tech positions in the ER which has helped us expand operations and will continue indefinitely.

We also continue to upgrade infrastructure with improved airflow for negative pressure care spaces.

■ JH

Is there anything on your wish list?

■ EB

The most moral distress we felt was caring for patients who needed a service that we were not equipped to provide; we really struggled to get them to the appropriate facility. Having support for those high acuity patients—where there is concern that they might continue to deteriorate if they keep boarding in your ER, and/or concern related to equity and access to care—is extremely challenging and consumed a lot of our bandwidth. Having some type of system that could guarantee our patients would get appropriate treatment in times of strain would be reassuring.

Another wish would be to expand teleconsultation and image sharing services. We are working on developing tele-neurology services for stroke care. It would be helpful to be able to discuss with an intensivist how to ensure that patients who might need adjustments to ventilator settings, for example, are getting appropriate care at your facility or how to upskill what your facility may be able to provide. These consults could also prevent patient transfer while elevating the care provided internally. It would also make a significant difference and be very helpful to have a consulting specialist view some of our images.

One last wish would be increased EMS support, including prioritizing interfacility transfers in addition to ground calls. One of my colleagues pointed out that the sickest patient in the community may be a patient in the ER who needs transfer. This might ultimately mean that we boost interfacility capacity, use different crews, or enact other proactive solutions; this is still an active conversation.

■ JH

How have your staff held up? Has there been a lot of turnover?

■ EB

Our group has made a concerted effort to have more stable employee physician staffing, which improves cultural sensitivity and familiarity with the system. We had to pay attention to burnout and physician capacity. We all care about the community, we care about what we are doing, and we are wearing multiple hats and taking on multiple roles in addition to our clinical roles. We tried to be mindful of giving people some breaks and we also had people work in pairs. This made it easier for someone to step away for a bit as needed (e.g., to take sick leave or care for a loved one); the other person could continue the work. We still have a higher percentage of contract nursing; this was a real challenge during the pandemic and making up for nursing shortages was a strain overall. We have had several conversations

around moral distress, witnessing community members being affected in such a significant way, caring for people in non-normal environments, general wellness, and the need to debrief. At least one physician said the difficulty with patient transfers was so overwhelming it was a primary reason they left. I have a number of patients who have lost multiple family members; the community continues to experience fallout and significant distress around the disruption in their home lives.