

The Big Idea

Q How do you provide medical care to those who live far from clinics?

A. Bring the clinic to the patients.

BY CHELSEA JULIAN AND ANGELA PERSON

Jesse E. Jones, executive director of the Wichita Housing Authority in Anadarko, Okla., had a logistics problem. Indian Health Services was a great resource for tribal members who lived nearby, but many lived too far away to make health care checkups on a regular basis.

As a result, patients often waited until problems became more severe before seeking treatment.

That's when faculty and students in the Christopher C. Gibbs College of Architecture at the University of Oklahoma and representatives from the Wichita and Affiliated Tribes hit upon an idea to deliver health care to rural tribe members through a mobile medical unit.

The traveling unit is one of OU's community engagement projects that provide opportunities for civic engagement and leadership development to students, faculty and the community. The projects partner OU resources and expertise with the knowledge and assets of diverse communities.

"We have been very optimistic about the mobile clinic, as this is a new avenue to help out our tribal members and other Natives in the surrounding rural areas," Jones says. "Many of our rural Native people don't have the ability to travel distances to get to Indian Health Services, which jeopardizes their health and longevity. If we can help those in the rural areas that need Indian Health Services, then we have performed a great improvement upon their lives and the family members who depend on them."

The project was led by Bryan Bloom, an assistant professor in OU's Haskell and Irene Lemon Construction Science Division, and supported by assistant professor Ken Marold from the Division of Architecture.

Marold conceptualized and designed the mobile unit. He also created a fabrication strategy for building the unit quickly.

"I designed and developed a piece of software to generate this project," says Marold. "The kit of parts was CNC [machine operated cutting tools] milled and

a short, 3-D puzzle-like assembly diagram was generated. When the architectural design was done, there was no other step but to build."

The medical unit is composed of multiple pre-cut, prepared materials and designed to allow for "ease-of-construction" for those who may not have all the tools or experience for a traditional build. The design helps to decrease barriers associated with construction for future builds. Essentially after the frame is cut out, the only tools someone needs to erect it is a drill and a rubber mallet.

Bloom engaged with tribal representatives and oversaw construction, guiding students enrolled in his spring 2021 "Design + Build" class in crafting the mobile clinic. Materials were donated by

Patriot Roofing, VaproShield, Cover Your Pergola and Trailer Made Trailers of Colorado.

"One of the things I try to convey to the students is that, no matter how routine or unique the project, our job is to collaborate with the designer—to offer some practical field knowledge



The interior of the mobile medical unit was designed for ease of construction as a machine-milled "kit of parts." Builders only need a few simple tools, like a drill and rubber mallet.



Construction science students in OU's "Design + Build" class assemble the mobile unit, which was built from donated materials.

of how materials attach to each other, how to best sequence the work, how to keep weather out," says Bloom. "So, on this project, I've found that coupling that awareness with digital design and fabrication really broadens the lens of our capabilities as builders."

Construction science senior Asael Herrera says of the experience, "I wanted to take this class to have the opportunity to give back to the community. I didn't know it would be a medical mobile unit, but it's amazing to give back to our community in this way. This is a great experience because there are people learning and teaching across a variety of construction backgrounds."

Ben Bigelow, director of OU's construction science division, agrees. "Any time we can engage the students and get their hands on a real project, it is a real differentiator. It better prepares the students for their careers."

"When we can combine that project experience with service to something bigger, it goes to another level," he adds. "The Wichita Housing Authority has been an awesome partner and I am just so proud of what Bryan Bloom and his students have accomplished. Great partners and great faculty made this possible."

The mobile medical unit was delivered to Anadarko by Bloom and his team this past summer. The Wichita and Affiliated Tribes now use the trailer to provide service to tribal



OU construction design members Jerry Puckett, Bryan Bloom and Ken Marold deliver the completed medical unit to Anadarko, Okla., where it now serves tribal members in southern and southwestern Oklahoma.

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Lancer Stephens, a member of the Wichita/Creek Nations and an associate professor in the OU Hudson College of Public Health, says the mobile clinic provides the tribe a resource for emergency medical care, as well as routine and preventive health care.

"If there's one thing the past 19 months have taught us, it is to prepare for the unexpected," Stephens says.

"While we never hope for there to be another epidemic or disaster in the communities of Anadarko and surrounding rural areas, there is a possibility for natural disasters such as wildfires and tornados. Given the mobile clinic's multipurpose blueprint, food and water distribution, cooling stations, well-checks, vaccinations and other outreach opportunities will now be a reality and the tribe will be in a better position to offer assistance in times of need.

"I've been very fortunate to see this project come to fruition from both sides, the university side as an employee and the Wichita side as an enrolled member," Stephens says.

"Additionally, I appreciated the opportunity to speak with the students who worked on the project and share some of the cultural history of the Wichita tribe, as well as that of the many other tribal nations of Oklahoma. I believe it helped them understand that this wasn't just a project for a grade, but a real opportunity for them to take part in something that was going to provide years of service and make a real difference to a community."

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