

NATIONAL PARK MEDICAL CENTER

Arkansas Hospital Improves Treatment Times for STEMI and Stroke



THE BACKGROUND

National Park Medical Center (NPMC) is a 163-bed hospital that has been delivering healthcare to the community of Hot Springs, Arkansas, for nearly 70 years. Offering a full range of inpatient and outpatient services, NPMC, which is part of the Lifepoint Health family of hospitals, is also home to the Heart and Vascular Center of Central Arkansas. The facility was recently recognized for excellence through the receipt of Chest Pain Center Accreditation with PCI through the American College of Cardiology Accreditation Services.

With an affordable cost of living, numerous golf courses, and several lakes, Hot Springs has become a magnet for retirees. That means that National Park sees its fair share of cardiac and stroke related patients, says Emergency Room Director Priscilla Couch, RN, MSN.

THE CHALLENGE

Previously, when the emergency department received an ambulance call that a patient was experiencing chest pain and possibly a STEMI, an ECG would be sent from the ambulance to the emergency department by fax. But the transmission wasn't always successful, Couch says.

And even when the ECG did make its way to the ED, there were hiccups in communicating the information to vital members of the healthcare team. "Our ER doctor would call the cardiologist and try to explain the patient's condition without a visual, which takes time," recalls Couch. "Then, with limited information, the cardiologist would have to decide, well, is that a real STEMI or not?"

That deliberation would leave Couch waiting before she put out calls asking cardiac cath lab staff, including an interventional cardiologist, radiology technologists, and a cardiac-care nurse, to assemble. "When a patient is experiencing a STEMI, those are precious minutes that are being wasted," Couch says. [Studies have shown](#) that the risk of 1-year mortality for STEMI patients is increased by 7.5% for each 30-minute delay in treatment.¹



KEY RESULTS

- ▶ Average D2B time under 60 minutes for 3 consecutive quarters
- ▶ 80% decrease in average door-to-CT time for stroke

1. De Luca, Giuseppe, Harry Suryapranata, Jan Paul Ottervanger, and Elliott M. Antman. "Time Delay to Treatment and Mortality in Primary Angioplasty for Acute Myocardial Infarction." *Circulation* 109, no. 10 (2004): 1223–25. <https://doi.org/10.1161/01.cir.0000121424.76486.20>.

THE SOLUTION

Everything moved quickly on the early April 2022 morning when Walt Everton, 56, experiencing extreme chest pain, arrived at the NPMC emergency room. “You’re having a massive heart attack,” he recalls Clayton Nash, M.D., the emergency room physician, telling him. Within minutes, Everton was in the cardiac cath lab, having two life-saving stents inserted.

Thanks to a grant from the Arkansas Department of Health, Pulsara, a mobile healthcare communication program that unites care teams on a single patient channel, had been implemented at NPMC about a year before Everton arrived at the ED. The platform played a key role in the rapid and efficient care he received. With Pulsara, every member of the cardiac catheterization team is able to access an ECG, along with a patient’s vitals and other critical information, in real time.



NPMC’s very first cardiac case after the platform was brought online in January 2021 was a STEMI. From the start, it was clear that Pulsara was going to make a big difference in the hospital’s ability to provide the kind of fast, efficient care that leads to the best possible outcomes for these patients.

“Thanks to Pulsara, EMS was able to let everyone who was critical to care know that a STEMI patient was arriving,” Couch says. “We had a 15-minute window to prepare for that patient, and by the time he got here, the cardiologist had shown up on his own, and the cath team had shown up on their own because they’d received an alert from Pulsara on their phones. That also meant that when the patient did arrive, the nurse was able to stay in the room and provide care rather than having to step out and make four phone calls.” It’s a scenario that’s been repeated, thanks to Pulsara, scores of times in the last 15 months.

THE RESULTS

The instant coordination of care Pulsara provides has sped up time-to-treatment for STEMI patients at NPMC. “Since we implemented Pulsara, we’re getting patients to the cath lab in a much more timely way than we had in the past,” says Couch. The American Heart Association’s guidelines recommend a door-to-balloon (D2B) time of 90 minutes for best patient outcomes. For the three most recent consecutive quarters, NPMC has achieved an average D2B time of under 60 minutes. “Before Pulsara, that’s something we would never have imagined we could achieve,” Couch says.

Pulsara is having an equally dramatic impact on providing stroke care. National guidelines call for a door-to-CT (DCT) time within 25 minutes for suspected stroke patients. With the coordinated real-time information sharing that Pulsara facilitates, NPMC is able to have staff on standby, ready to take a patient who may be experiencing a stroke from the ambulance straight to a cleared CT scanner table. Last year, NPMC went from an average door-to-CT time of 30 minutes to less than six minutes, a remarkable 80 percent decrease. “Time is brain when it comes to stroke patients,” notes Couch, “so providing medication or other treatment promptly can mean a much better quality of life.”

Pulsara is also helping unify EMS and hospital teams. Klay Hall, Director of Administration at LifeNet EMS in Arkansas, says, “We are a bigger part of the overall team now, and that has allowed us to appreciate that the minutes that we’re saving in the field are helping these patients. That draws you into a more team mentality. This is technology that’s helping our patients, helping us be a part of the bigger team, and making a difference. And when you’re in a job where you serve others, it’s important to know you’re making a difference.”

For Walt, the difference Pulsara made means everything. Speaking in a strong, unwavering voice just a couple of weeks after he experienced a STEMI, he says, “The fact that the information my doctors needed was there instantly at National Park and that everybody acted together is the reason I can continue to play with my grandkids and be here with my wife today.”

