Delivering lifesaving heart-attack care no matter where patients live

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Saving the lives of heart-attack patients across 45 Pennsylvania counties takes comprehensive planning and a dedicated team that extends beyond 10 hospital campuses.

The ability to assemble such a network has earned the physician-led Geisinger health system the distinction of having the first three hospitals to be recognized with Comprehensive Heart Attack Center (CHAC) certification, granted by The Joint Commission and the American Heart Association (AHA).

The system’s flagship institution—Geisinger Medical Center, in Danville—was the first hospital to earn the certification over the summer. The certification followed about a month later for Geisinger Wyoming Valley Medical Center and Geisinger Community Medical Center, in Wilkes-Barre and Scranton, respectively.

Geisinger, an integrated health system that employs about 1,700 physicians, is a member of the AMA Health System Program, which provides enterprise solutions to equip leadership, physicians and care teams with resources to help drive the future of medicine.

The three certified hospitals had previously earned recognition as Mission Lifeline Heart Attack Receiving Centers, also offered by The Joint Commission and the AHA. In a policy statement published last year in its *Circulation* journal, the AHA highlighted why the new certification was needed.

Although the Mission Lifeline program is linked to lower morbidity and mortality rates from ST-segment-elevation myocardial infarction (STEMI), the AHA’s policy statement said “significant barriers and opportunities remain.”

**Designing the ideal system of care**


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“From community education to 911 activation and emergency medical services triage and from emergency department and interfacility transfer protocols to post-acute care, each critical juncture presents unique challenges for the optimal care of patients with STEMI,” the AHA statement says, later outlining recommendations for how “the ideal STEMI system of care should be designed and implemented” so patients with STEMI receive the best evidence-based care.

To earn the Comprehensive Heart Attack Center certification, hospitals must:

- Provide continuous on-site coverage for primary percutaneous coronary intervention and cardiac surgical services.
- Implement a multidisciplinary team approach that offers a full range of advanced hemodynamic support across its continuum of care for the treatment of the most complex and critically ill patients, including those with cardiogenic shock and cardiac arrest.

George Ruiz, MD

“The fact that we went through this with all three of our hospitals that do this shows that we believe that the care that we’re delivering in Danville should be equal to the care that we’re delivering in Wilkes-Barre, and should be equal to the care that we’re delivering in Scranton,” said George Ruiz, MD, chair of Geisinger’s cardiology department.

“It’s important for us to deliver that care throughout our geography, because we don’t want geography to determine outcome,” Dr. Ruiz added. “It also speaks to Geisinger’s commitment to providing excellent care regardless of where you touch our system.”

He credits Cinde Bower-Stout, RN, MHA, Geisinger’s manager of cardiovascular quality and director of its CHAC certification program, for “connecting the dots” to integrate the system’s cardiovascular service line across the organization.
“It's been a great chance for our teams to come together and standardize the care that we deliver, and to also make sure that we are treating everyone that presents—from the mildest chest pain to the most severe of a cardiac arrest—in a great and efficient manner,” Bower-Stout said.

Cinde Bower-Stout, RN, MHA
The Comprehensive Heart Attack Center interdisciplinary team consists of physician and nurse leadership, respiratory therapists, pharmacists, emergency department and care-management staff and chaplains. It also includes outside staff in emergency medical services (EMS) and transferring hospitals.

“It starts with our relationships with our EMS partners out in the field and how quickly we are able to bring patients in that are having the most severe heart attacks,” Bower-Stout explained.

“Then, moving forward, it includes those patients that just walk into our emergency department,” she added. “From there, it's how quickly we're able to process those patients and get them whatever treatment they need—whether that's going directly to the cath lab, outpatient testing or it could be open-heart surgery.”

According to the AHA, a comprehensive heart attack center “includes an integrated system of care involving the EMS system, ED, CCL [cardiac catheterization laboratory], cardiology service, cardiothoracic surgery service, and critical care to facilitate optimal care.”

“These systems are required to maintain optimal door-to-device times and to manage patients received by the hospital directly from home or the community, by EMS, and by transfer” from nonpercutaneous coronary intervention-capable facilities, the AHA policy statement adds.

“An appropriate system in place is required to decrease and maintain short door-to-device times, facilitated by prehospital STEMI activation when possible, ED physician CCL activation when the patient is in the ED, and single-caller systems for referral hospitals,” according to the AHA.
A comprehensive heart attack center is also required to have the full range of advanced hemodynamic support for the treatment of the most complex and critically ill patients, such as those with cardiogenic shock and out-of-hospital cardiac arrest.

The AHA notes that cardiogenic shock complicates STEMI in 5% to 15% of patients and is the most common cause of in-hospital mortality. It recommends the staffing of a coordinated care team that includes specialists such as cardiothoracic surgeons, interventional cardiologists, advanced heart failure specialists, critical care specialists, and allied health professionals.

**Why this certification matters**

Yassir Nawaz, MD, director of interventional cardiology in Geisinger’s northeast region—which includes Geisinger Wyoming Valley and Geisinger Community Medical Center—said much of this was already in place as the hospitals were already designated as heart attack centers. What the work to earn the Comprehensive Heart Attack Center certification brought forth was a plan to care for the patients with the most advanced and complex cardiac conditions.

“There are certain criteria, equipment, processes and plans that are already there for patients who are coming in with STEMI, but what we have tried to improve is how to take care of the sicker patients,” Dr. Nawaz said. “Putting all of these pieces together and working together has helped us take care of these very sick patients who are coming in from somewhere with a delayed presentation and advanced shock at times.”


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Yassir Nawaz, MD

There are barriers to implementing recommendations that the AHA policy statement classifies as modifiable, modifiable with difficulty and nonmodifiable.

The modifiable barriers mostly involve a lack of protocols, transfer or backup plans or strategies for what to do when patients need complex interventions.

Dr. Nawaz said these have surfaced as plans get developed for complex patients who present with advanced cardiogenic shock or in need of mechanical circulatory support. He added that it doesn’t matter if these plans are rarely used.

“How many times we're going to do it? Probably a very small number, but we know that small number can lead to improvement or maybe save the life of that very, very sick patient,” Dr. Nawaz explained.

“We have that capability,” he added. “We have put all of those plans in place in terms of who on the care team is going to take care of that patient pre- and post-procedure.”

“Modifiable with difficulty” barriers listed by the AHA include when patients are unaware or in denial that they are having a heart attack.

Bower-Stout said that Geisinger engages in extensive outreach including columns in the local newspaper that cover topics such as the importance of shortening time to treatment, how to recognize symptoms, and explaining how heart attacks present differently in men and women.
“I always tell people I would much rather have them call 911 and come in and be diagnosed with a gallbladder attack, than to sit at home for a couple of days and be having a heart attack and then present to us when they’re in cardiogenic shock and will require advanced therapy,” Bower-Stout said, noting that “no one plans on having a heart attack.”

“We’re here for them no matter what they need,” she added. “If they just need testing and outpatient treatment, we’re here. If you’re having a heart attack, we’re here for you. If you need open-heart surgery, we’re here for you.”

A nonmodifiable barrier listed by the AHA is geography, and Geisinger has worked with its EMS partners to lessen the impact of the long distances patients must travel to get emergency treatment.

They are trained to identify and call in when a patient is having STEMI, which launches the process of assembling the specialized care team.

“About 60% of our STEMI patients present via EMS, which is way higher than the national average,” Bower-Stout said. “They can start treatment in the field as we get our team activated.”

Patients can be brought in by one of nine helicopters Geisinger has spread through six locations in its vast coverage area.

“That time to activate is very important,” said Dr. Nawaz. “Every second counts.”

The EMS crew is invited to observe procedures.

“Our physicians are so quick at getting these arteries open, we don’t feel like we’re taking them out of the field for very long,” Bower-Stout said. “But they can actually visualize the closed artery and then see the wire pass through, and then the balloon inflates and then the patient says, ‘Oh my goodness, I feel so much better.’”

“Then they become great teachers,” she added. “When they’re transporting patients in, they can tell them exactly what’s going to happen when they arrive, which is wonderful.”

After each emergency transport, the event is reviewed and feedback is given to all who were involved.

In addition to being part of the Mission Lifeline program, Geisinger was able to get rolling with the Comprehensive Heart Attack Center certification early by participating in its pilot program—which Bower-Stout compared to having a dress rehearsal before the theater critics put their reviews in the newspaper.
“We’ve defied orthodoxy on this one, and we’ve tried to make sure that people have access to these services even if they aren’t living in the middle of Manhattan,” Dr. Ruiz said.

“It’s been an amazing and worthwhile journey that I would recommend for other systems that also want to provide great care,” he added. “Because to get this certification, people have to talk, protocols have to align and—in the end—people benefit. In this case, it’s the people of Northeastern Pennsylvania, which is really the reason why we come to work every day.”