EMS1

pulsara

CLOSING THE COMMUNICATION GAP:

HOW A HOSPITAL AND EMS SYSTEM IS REDUCING TIME TO TREATMENT

CAROLINAEAST
MEDICAL CENTER

MAIN ENTRANCE

CarolinaEast Medical Center is providing STEMI patients with the best possible care by streamlining communication between EMS providers and clinicians.

CarolinaEast Medical Center serves the area around New Bern, North Carolina, in the eastern part of the state — where the population is more spread out than in other parts of the state. As a result of the city's sprawling population, transport times can vary.

For example, the average transport time for CarolinaEast EMS is between five to 10 minutes. However, the department is conveniently located just three minutes away from the hospital.

> ## The recommended STEMI intervention time for the best success rate is within 90 minutes of first medical contact.

But, when CarolinaEast EMS is dispatched for mutual aid, surrounding counties can expect longer transport times. These transport times can vary between 30 to 60 minutes.

If crews are transporting a ST-Elevation Myocardial Infarction (STEMI) patient, then the recommended intervention time for the best success rate is within 90 minutes of first medical contact — after all, time is muscle. But when a majority of that time is already eaten up by patient transport, it is even more important that the hospital has all the available patient information up front so they can mobilize appropriate resources prior to patient arrival.

Funding a Communication System

Five years ago, a patient who was having a heart attack was flown off a cruise ship to CarolinaEast Medical Center. The hospital's cardiac catheterization lab treated the patient and cleared the blockage.

The patient, according to Dr. Alex Kirby, an interventional cardiologist and medical director of the cath lab at CarolinaEast, was impressed with the hospital's facility and their patient care.

As a thank you, the patient made a generous donation — with a stipulation that it would be used for cardiac services.

That donation came at the perfect time.

Kirby had been working with hospital administrators to set aside money for a system that would uniformly connect EMS providers, ER staff, cath lab members and cardiologists. Ideally, the system would help EMS providers and healthcare members communicate more easily and efficiently while transporting and treating STEMI patients, ultimately reducing treatment times.

The hospital adopted Pulsara, a smartphone-based communications platform that provides real-time, streamlined communication between providers and clinicians.
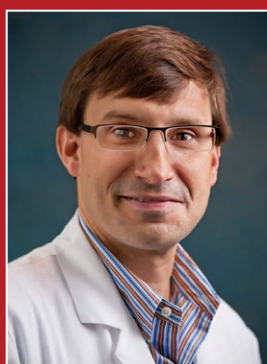
"Instead of the patients getting stopped in the ER, they'll come straight to the cath lab. That has really helped with our times for treatment from the first medical contact."

— *Dr. Alex Kirby, CarolinaEast Cath Lab Director*

The patient's donation was the exact amount Kirby was looking to allocate for this effort.

"It's a hard thing to budget, because it's for something that's really used by outside units," Kirby said, "but it helps our healthcare."

Prior to Pulsara, EMS providers would recognize the STEMI in the field and call the "STEMI phone line" in the ER.

"You talk to a physician, tell them what you have, your ETA, what interventions you've done, and then they would call security at the hospital," said Robert Montedonico, paramedic supervisor at CarolinaEast EMS. "Security would have to either individually call all the cath lab team members on call, or they would have to page them. It was a very time-consuming process."

At best, this communication method was chaotic.

"You would always be getting a little bit of second-hand information," said Kirby, "where the patient's name may change, what type of heart attack may change and the details – that campfire telephone game of passing on a message, so to speak."

The Pulsara platform has helped keep hospital staff informed about cases ahead of time, he says.

"Instead of the patients getting stopped in the ER, they'll come straight to the cath lab," Kirby said. "That has really helped with our times for treatment from the first medical contact."
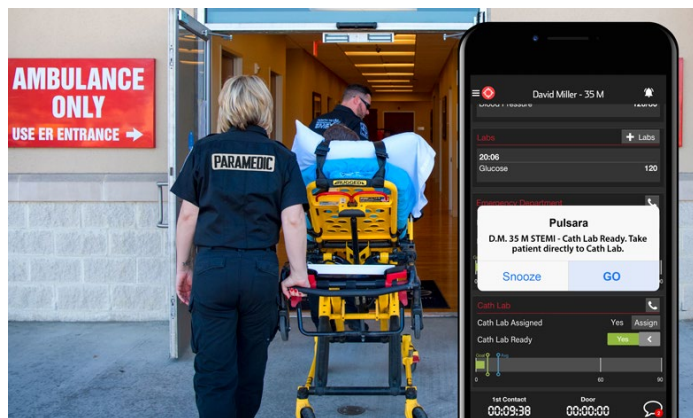
Once the protocol change was made, CarolinaEast EMS was the first EMS department in the tri-county area to implement Pulsara.

Implementing Pulsara in EMS

CarolinaEast EMS implemented the Pulsara system in March 2017. Currently, the department is only using the STEMI portion of the platform. However, hospital

"It's a much-needed and accepted change as we progress forward with communication between hospitals and providers out in the field."

— *Robert Montedonico, CarolinaEast EMS Supervisor*

administrators are looking to expand the facility's use of the platform for all time-sensitive emergencies, including sepsis, stroke and cardiac arrest.

During the department's two-month implementation period, crews and hospital staff worked together to familiarize themselves with the new system.

At first, crews would activate Pulsara and then call the STEMI line to ensure that hospital staff was receiving the proper information on their end. By using a dual process, they were able to evaluate the product.

"We were having to do a follow-up call to the STEMI line to ensure the physicians were getting used to looking for the Pulsara phone and making sure they were receiving the activations correctly and that everything was right," Montedonico said.

Now, communication between teams is seamless.

"It's a much-needed and accepted change as we progress forward with communication between hospitals and providers out in the field," he said. "Before, we were talking to an ED physician about the STEMI when we called in reports and they would ask, 'What do you have?' and say, 'OK, we'll see you in a little bit.' Now, we get to take pictures and submit those to the hospital."

Through Pulsara, CarolinaEast EMS crews also get real-time insight from physicians while they're still providing care to the patient.

"The cardiologists that are on call sometimes will say, 'Hey, can you take a right-sided EKG?' Or they'll say, 'Can you do this, or have you considered that?'" he said.

Communicating through the app does not distract crews from providing appropriate patient care, Montedonico adds.

"Once you get that information and you submit it, it's activated – you can turn it off, put it down and continue care," he said.

This streamlined process was important to CarolinaEast EMS crews due to their already short transport times.

"You don't have to fill out every single step on it. You can do a name, the picture, and then it automatically generates your ETA," Montedonico said.

The app opened communication lines with on-call physicians and cardiologists to provide STEMI patients with the best possible care, he says. However, getting everyone to come together and breaking down departmental silos was a learning process.

The Importance of Unifying Communication

Dr. Stanley Koontz, EMS medical director for CarolinaEast, said EMS and hospital staff quickly found out that one call did not do it all.

Koontz, along with colleague Dr. John Williams and Dr. James Jollis, a cardiologist and professor at Duke University in Durham, N.C., pushed the importance of EMS identifying STEMI patients in the field and transporting them directly to the cath lab.

"We really tried to home in on EMS," Koontz said. "The good thing about Pulsara is that it unifies communication."

While on shift, Koontz said he saw the platform at work firsthand.

"We had a STEMI, and you put it in and you get everything done, and now everybody's notified," he said. "Everybody sees the EKG; everybody knows where the patient is. It really streamlines the communication, especially for the hospital."

Making the change can be difficult, but getting your stakeholders to the table and ensuring their involvement is key, Koontz adds.

"You're going to have growing pains no matter what you do and what change you make," he said. "There is a ben-

> "There is a benefit to standardizing communication from everybody, from EMS to the emergency department to the cath lab team. It gets everybody on the same page and working toward a common goal."
>
> – *Dr. Stanley Koontz, CarolinaEast EMS Medical Director*

efit to standardizing communication from everybody, from EMS to the emergency department to the cath lab team. It gets everybody on the same page and working toward a common goal."

Preparing for a Patient's Arrival

In Barbara DeLong's experience, having everyone on the same page is vital. DeLong, RN, BSN, has worked at CarolinaEast for almost 30 years. She currently serves as outcomes specialist, but she spent over 28 years working in the cardiac cath lab.

"When I worked in the cath lab, all we had were beepers, and our security would have to set off the beepers," she said. "We would call them back, come in and not necessarily know anything about the patient. I wouldn't know if my other team members had gotten the message and were on their way."

In fact, there were times when DeLong would have to call in missing team members.

"I'd have to make phone calls to find that out, but now with Pulsara, it's all there," she said. "You know that everybody is aware. Everybody is finding out what's going on at the same time. Everyone gets and shares the same information."

Having more information, DeLong says, allows hospital staff members to be fully and adequately prepared before a patient arrives.

"Pulsara gives us a better focus of what the patient is going to need," she said. "If we know the type of heart attack the patient is having, then these are the medicines I need to get ready, or these are the catheters and lines that are needed," she said. "And maybe we need respiratory here, we need somebody else here – it just streamlines everything."

In her current role, DeLong reviews all STEMI code patients for the hospital.

Improving Patient Outcomes

During her review of patient data and outcomes, DeLong starts with the first contact with the patient.

"It can be either by the ambulance personnel or in our emergency department," she said. "We look at the breakdown of times from that first contact and follow them through the completion of their cardiac cath."

From there, DeLong sends out the times and outcome of the patient to the involved participants. She says Pulsara not only assists with the communication at the time of the event but also with her data abstraction.

"The feedback assists everyone with improving care for our patients," she said. "The data is compiled and
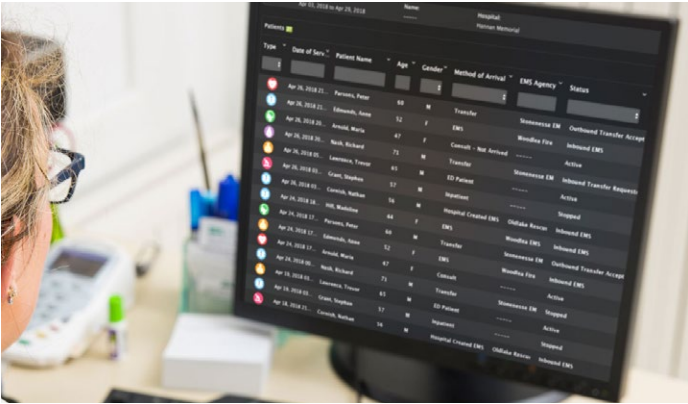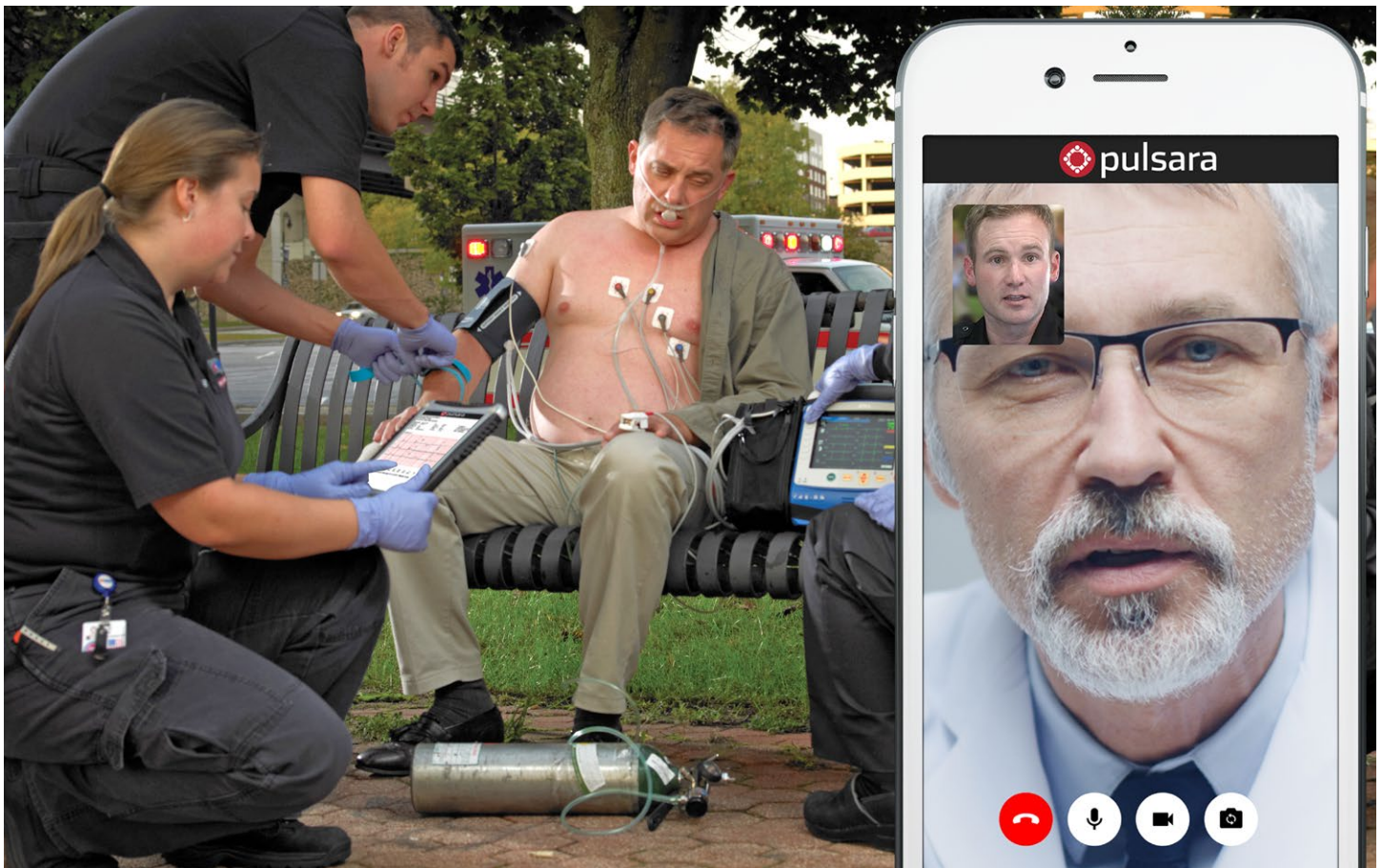
"Pulsara gives us a better focus of what the patient is going to need. If we know the type of heart attack the patient is having, then these are the medicines I need to get ready, or these are the catheters and lines that are needed."

– Barbara DeLong, RN, CarolinaEast, Outcomes Specialist

goes to a committee for review every two months. The committee is a multidisciplinary group in which suggestions can be made and improvements implemented to further improve the quality and efficiency of care for our patients."

EMS personnel, DeLong said, have appreciated the feedback.

"They start the process and we're the next step," she said. "It helps them take care of future patients. It also finishes up the case for them if they go home and say, 'Well, I wonder what happened to that person?'"

As a result, interactions between cardiologists and EMS providers have increased.

"Before, we would maybe see them if we got the chance to go down to the cath lab and drop the patient off, which didn't happen very often," Montedonico said.

Now, EMS providers and cardiologists are communicating regularly.

"They'll show the before and after pictures when they're clearing the blockage," Montedonico said, "and that's something we'll even provide feedback on."

The biggest success story, according to Kirby, is simple: Using the Pulsara platform allows each player — whether they're in the EMS or hospital system — to ensure that they are ready and fully prepared for each patient.

This is especially important when transportation times are longer than usual, he adds.

"In the areas that are less densely populated, where transportation issues become a probability, if you get notified earlier, it helps with the time component," Kirby said.

Because time is muscle, early intervention directly translates to lowering mortality and morbidity rates after STEMI. At CarolinaEast and surrounding EMS agencies, making the appropriate communication changes has been an effective catalyst in reducing time to treatment and saving patients' lives. ●

ABOUT THE SPONSOR

Pulsara is a healthcare communication platform that connects teams across organizations. What makes Pulsara so unique is that we enable networked communication across the entire dynamic care team for any patient event. The Pulsara platform, built on the power of mobile technology, unites the right clinicians at the right time for the right patient -- providing transparency and streamlined communication.

Simply CREATE a dedicated patient channel. BUILD the team. And, COMMUNICATE using audio, video, instant messaging, data, images, and key benchmarks. Studies report an average decreased treatment time of nearly 30% when using the platform. Pulsara is the evidence-based standard of care.

Visit www.pulsara.com for more information.

ABOUT THE AUTHOR

Sarah Calams previously served as associate editor of EMS1. In addition to her regular editing duties, Sarah delved deep into the people and issues that make up the EMS industry to bring insights and lessons learned to EMS providers everywhere.