Pulsara Case Study: Miami Valley Hospital

OPTIMIZATION OF STROKE PROCESSES

First in World to Transform Stroke Care by Integrating Innovative Technologies

How one system combined advanced cerebrovascular imaging software and a secure mobile communication platform to enhance processes for stroke treatment.

BACKGROUND

Miami Valley Hospital, part of the Premier Health hospital system, is a 970-bed comprehensive stroke center in Dayton, Ohio.

Premier Health is recognized for its award-winning care of complex strokes. In addition to Miami Valley, the system includes three other stroke facilities that hold Joint Commission stroke certifications and work together to provide outstanding care to the Dayton community and southwest region of Ohio.

PROBLEM

Built on a culture of excellence, Miami Valley Hospital consistently improves its stroke care processes. With up to 60 individuals responding to one stroke case—EMS providers, neurologists, CT technologists, nurses, and consulting and emergency physicians—having the right technology in place and used effectively makes all the difference for patient outcomes.

"Our goal is to treat our patients as well as we can," said John Terry, MD, Neurologist and Director of Inpatient Stroke Care at Miami Valley. "A lot of information needs to be generated and communicated, and it has to be done in a way that gives everyone a good idea of what others are thinking."
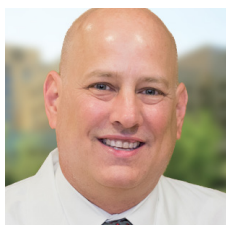
That information includes the level of blood flow to the patient's brain, something that can only be seen with advanced imaging. Miami Valley needed a way to capture and communicate these critical details instantly to accelerate the diagnosis and treatment of patients experiencing an acute stroke.

SOLUTION

This past year, Miami Valley added RapidAI to its established Pulsara communication workflow. The Rapid software platform uses artificial intelligence to process critical stroke imaging information, shortening to five minutes a data interpretation process that traditionally took a CT technologist at least 20.

The Pulsara and RapidAI integration enables coordinated real-time sharing with the entire stroke team—something that has yet to happen at any other stroke center in the world.

"Communication is an exchange of information, including when a patient's symptoms started, and what their CT perfusion and vascular term look like," said Terry. "Advanced imaging has become a super important part of that."

Viewing the Rapid results available through the Pulsara communication platform provides comprehensive data about a patient's stroke condition in real-time. This allows neurologists to make critical decisions, such as when it's safe to remove a blood clot, and when and if clot-busting medication can be used.

"The ability to have the images available as soon as they come out of the Rapid system is of particular importance to the patients being considered for endovascular treatment," said Terry.

RESULTS

The instant coordination of care can help buy more time for a stroke patient, who depends on efficient and rapid treatment to have a good outcome.

Prior to integrating the technologies, Miami Valley's stroke team knew a CT scan was underway, but not necessarily when it was completed. Now, all members receive an alert as soon as the images are available, and the neurologists can evaluate the results immediately on their mobile devices.

This allows the team to begin the most appropriate interventions faster since physicians no longer have to pull the needed information manually—including logging onto a computer and potentially dealing with firewalls to access it.

The Rapid platform also provides the 3D reconstructed images that previously had to be input by the CT technologist, saving even more valuable time and providing a complete picture of the patient's condition.

"People need to start looking at their processes and figure out the most efficient way to communicate information and make decisions based on that quick delivery," said Terry. "That's going to require us to embrace newer technology."
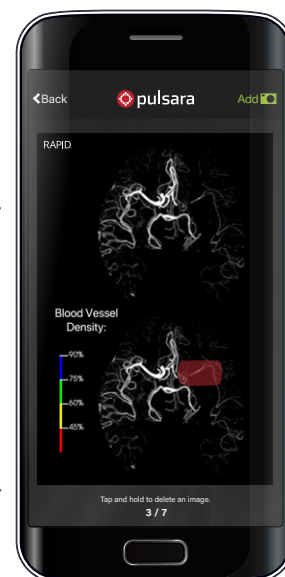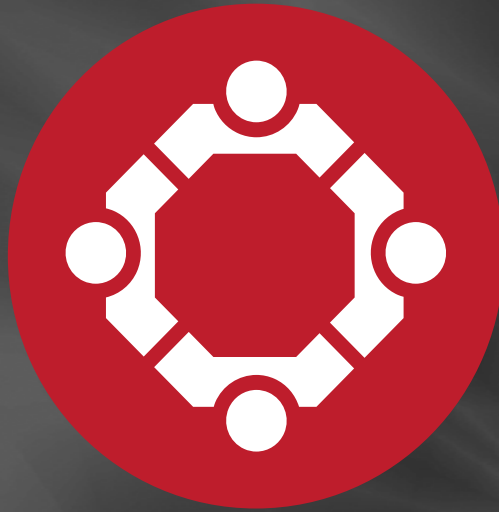
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