After becoming one of the first hospitals to employ cardioversion in the emergency department, Our Lady of Lourdes Medical Center, combined the treatment with another first: use of a patient’s wearable fitness tracker to diagnose and resolve a common heart irregularity. ABC World News Tonight, CNBC, and NPR were among the media outlets that covered the story.

Last year, Jeffrey Bravo, a 42-year-old teacher, lost consciousness and woke up in the Lourdes ER with his heart spiking to 190 beats per minute. The experienced Lourdes team of emergency medicine physician Monika Smith, DO, cardiologist Vivek Sailam, MD, and cardiac nurse practitioner Carol McDougall, MSN, APN-C, had the option of shocking Bravo’s heart back to normal to resolve the atrial fibrillation (A fib). But, according to treatment criteria, they could do so only if the A fib had initially begun less than 48 hours earlier. Otherwise, pooling of blood in the heart could create emboli that would travel to the brain if the normal heart rhythm was restarted. Instead, the patient would need more time and medications, including blood thinners to resolve the clots. The team needed to know when his heart rhythm became irregular.

Fitbit Interrogated Just in Time
But Bravo had not experienced any other symptoms to mark the start of his A fib, such as palpitations, dizziness, shortness of breath or chest discomfort. In the ER, medication therapy brought down his heart rate but the A fib activity remained. Since the patient could not recall symptoms, it was impossible to assign an onset time.

Forced to assume that the A fib activity may have begun 48 or more hours earlier, the team prepared to start anticoagulant therapy. But, McDougall noticed that Bravo wore a Fitbit—a recent present from his wife that had tracked his heart rate all day long.

The team asked for and received permission to access the app on Bravo’s smartphone, where data from the Fitbit was received, saved and displayed. There, they could plainly see that the start time for his atrial fibrillation was three hours prior to coming to the emergency department. He was still well within the window for using immediate electrical cardioversion of his heart rhythm.

“It was beautiful,” said McDougall. “The app showed exactly the time his heart rate shot up and we were able to correct it.”

After performing the conversion procedure in the ED, the Lourdes staff checked the smartphone app again, which accurately recorded a change in heart rate consistent with the A fib ceasing and with their ED data. “They shocked my heart and it went back into a normal rhythm and I was sent home later that day,” said Bravo.

Benefits to the Patient and Cost Savings
The Fitbit allowed Bravo quicker rescue from the life-threatening risk posed by A fib, and permitted him to avoid admission as an inpatient to the hospital, where he would have undergone an additional one to two days of invasive testing.

Last year, the Lourdes team received significant attention when it published its experience with the case in the *Annals of Emergency Medicine*. Though fitness trackers are not medical devices, the Lourdes team sees them as an inexpensive way for physicians to tell when and how often patients go into an irregular heart rate—and to see if those events correspond to symptoms.

“People often have vague complaints, like dizziness or chest pain, that go away by the time they get to us,” said Dr. Smith. “The wearable trackers can be another important source of information.”

Some cardiologists, including Dr. Sailam are recommending Fitbit-type devices to their A fib patients to track heart rates at home. And, clinical-grade wearables are expected to be increasingly important.

Bravo had a healthy follow-up appointment a few weeks later.

More Emergency Department News: In July, the State of New Jersey officially designated Our Lady of Lourdes a Comprehensive Stroke Center.
Lourdes Survey Sheds Light on National Problem: Violence Towards Emergency Department Staff

Healthcare and social-service settings are the most common environments for injuries due to an assault at work. Three years ago, a rash of violent incidents against emergency department staff in South Jersey hospitals led to policy reviews. In a national survey that year, more than half of nurses and nursing students reported being verbally abused, and more than 20 percent physically assaulted.

The following year, Jenice Forde-Baker, MD, Assistant Director of Emergency Medicine at Our Lady of Lourdes Medical Center, and her colleague Steven Hochman, MD, an emergency physician at St. Joseph’s Regional Medical Center in Paterson, NJ, decided to look at the issue. Among the 223 survey responses they received from their colleagues at New Jersey hospital emergency departments, nearly 80 percent said they experienced verbal or physical assaults at least weekly. They reported being threatened, cursed or screamed at, insulted, harassed, punched, kicked, bitten, or otherwise attacked.

“We should not be accepting this as just an inevitable part of the job,” said Dr. Forde-Baker. Since then, she has participated in a statewide campaign to raise awareness about violence (the definition of which includes verbal violence or threat of violence) in emergency departments and to develop ways to increase security.

But healthcare is still looking for consensus on the problem. In 2011, New Jersey adopted legislation elevating an attack on healthcare workers from a simple assault to aggravated assault. But Dr. Forde-Baker was unable to find anyone who had a case successfully prosecuted under this protection. More than half of the employees they surveyed didn’t know about the law, the enforcement of which is complicated when incidents take place with patients who, for medical reasons, may not be able to control their actions.

New Jersey now requires hospitals to organize violence prevention committees and offer at least two hours of training on the topic each year. By comparison, new OSHA rules in California require healthcare facilities to immediately begin reporting violent incidents, keep violent-incident logs, review existing procedures and establish a workplace violence prevention plan.

“Quelling the storm of violence in healthcare settings remains an ongoing challenge,” said Dr. Forde-Baker, who conducted her survey with support from the New Jersey chapter of the American College of Emergency Medicine Physicians. The ACEP offers a free presentation on workplace violence and prevention.