

RAPID^{AI}

With the help of RapidAI technology, physicians are intervening outside of traditionally accepted time windows—with life-saving outcomes.

When an 87-year-old Wisconsin man arrived at a hospital with aphasia and weakness on his right side, he was lucky to have made it there. A veteran who lives alone, he was found on the living room floor of his apartment around 11 a.m. by the volunteer who brings his daily Meals on Wheels delivery. Realizing the man had a stroke, the volunteer called 911, but she had no idea how long he had been in that condition. No one did.

“He received his meals daily through Meals on Wheels, so we knew they had seen him the day before,” said Dr. Daniel Gibson, the neurointerventional surgeon who performed the patient’s thrombectomy. “The next day, 24 hours later, they came back and found him with complete paralysis of the right side, an inability to speak or communicate, and a lack of awareness of things on the right, which are classic symptoms of a severe stroke involving the left hemisphere. His NIH stroke scale score was 23, which was consistent with a major life-threatening stroke. With his clinical history of atrial fibrillation, our ED providers immediately suspected that he had a large vessel ischemic stroke.”

The triage protocol at the receiving hospital is to screen patients with a last known well of less than 24 hours or when symptom onset is unknown. The patient, falling within the latter category, was given multiple scans, including a CT perfusion scan. His Rapid CTP results were favorable, showing what Gibson termed “a potentially reversible stroke.” But how should the patient be treated?

Guidelines established in 2018 by the American Heart Association (AHA) recommend that endovascular treatment should not be pursued if more than 24 hours has elapsed since the patient’s last known normal. In this case, the patient was last seen in a normal state more than a day before arriving at the hospital. “According to the current AHA guidelines, this patient would not have met inclusion criteria in any published randomized clinical trials related to mechanical therapies for stroke,” Gibson said.



Dr. Daniel Gibson, neurointerventional surgeon

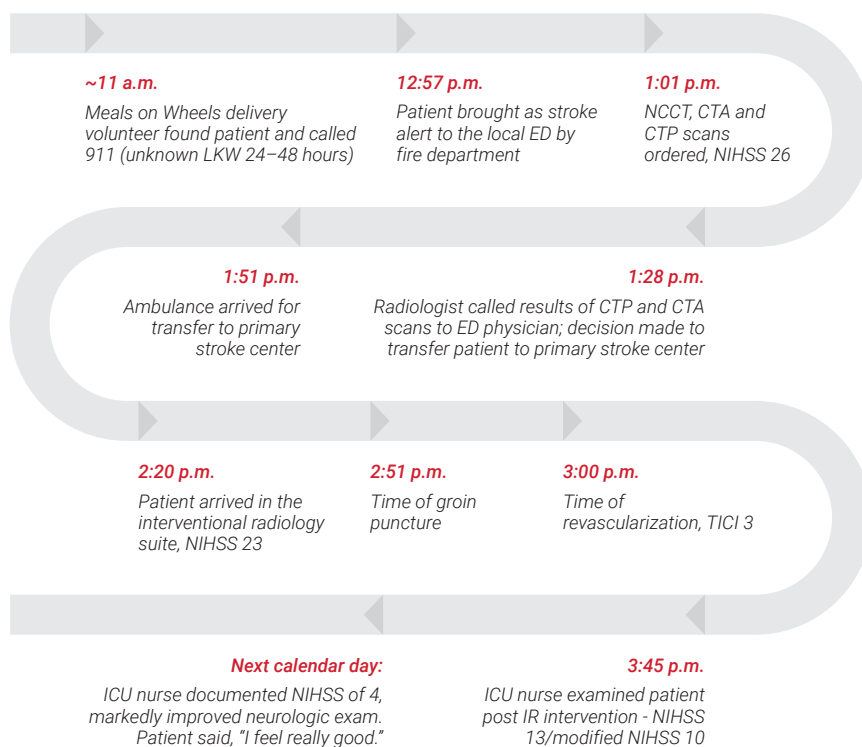
Despite the ambiguity of the patient’s last known well time, his Rapid® results were encouraging enough for transfer to the health system’s primary stroke center, where Gibson and the stroke team decided to move forward with a mechanical thrombectomy to remove the clot blocking blood flow to his brain.

“His perfusion imaging looked incredibly favorable, and I feel like we have a societal obligation on some level to treat these patients whenever possible,” Gibson explained. “My preference in these cases, when there is no clinical evidence with which to guide treatment, is to reach out to the patient’s family or surrogate decision-maker and explain all options. If that is not possible, the question becomes whether to rigidly adhere to current clinical guidelines—which we recognize are not always applicable to all patients—or apply the Golden Rule and treat others as you or your loved ones would want to be treated in a similar situation.”

“In this case, while we didn’t know exactly when the patient’s symptoms started, there was a high probability the stroke was less than 24 hours old, and his perfusion imaging suggested that regardless of time, the physiology of the stroke was fundamentally reversible with restored blood flow. Philosophically, I recognize guidelines have immense value but inherently lag behind both technology and published clinical evidence. Currently, it’s the evolution in imaging technology like RapidAI and ever-improving medical devices for retrieving clots that are driving our willingness and proficiency to treat patients who historically have been left to die.”

The procedure was successful, and the patient has since made a complete recovery. Fortunately, he wasn’t treated strictly according to guidelines. He was treated according to the results of his perfusion scan by a doctor who looked at the human being on the table and the clinical evidence of his condition.

Stroke Timeline



RapidAI gives stroke teams and their patients suffering from stroke, more of what they desperately need: time. By notifying the entire stroke care team—doctors, emergency personnel and logistics—at the earliest possible moment and giving them the patient images and information they need to make the best possible decisions, they can save lives.

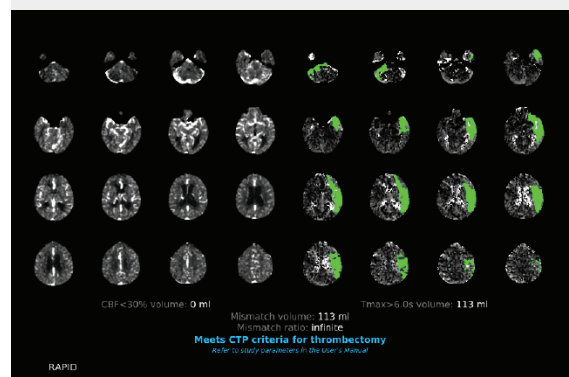
About RapidAI

RapidAI is the worldwide leader in advanced imaging for stroke. Installed in over 1,500 hospitals in more than 50 countries, the Rapid imaging platform, powered by artificial intelligence, includes Rapid CTP, Rapid MRI, Rapid CTA, Rapid ICH, and Rapid ASPECTS*. RapidAI empowers clinicians to make faster, more accurate diagnostic and treatment decisions for stroke patients using clinically proven, data-driven technology. With our validated, trusted platform, developed by stroke experts, clinicians worldwide are improving patient care and outcomes every day. The Rapid platform has been shown to aid in patient selection in both early and late-window clinical stroke trials. In addition to achieving the best clinical outcomes and largest treatment effects ever obtained, the results of these trials led to new American Heart Association and American Stroke Association treatment guidelines and have dramatically altered the management of acute stroke around the world. For more information, visit [RapidAI.com](https://www.rapidai.com).

*Rapid ASPECTS is not commercially available in the U.S.

RAPIDAI

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Green means go

Dr. Daniel Gibson's first grade daughter has gotten quite proficient at reading the mismatch maps the Rapid imaging platform sends her dad. If there's a lot of green (representing salvageable brain tissue) and little red, she knows her dad is going to be hurrying to the hospital to make someone well again. And that idea makes her very happy.



The flow to restore the flow

Protocols are everything when a stroke patient is brought in. Those developed at the advanced primary stroke center (PSC) the patient was brought to are managed in part by Abby Kosmoski, neurointerventional surgery nurse practitioner. When

the patient arrived at the receiving hospital, he was immediately assessed and given three scans: NCCT, CTA and CTP. Rapid results and source images were then delivered to stroke team members via PACS, email and the Rapid Mobile App. The patient was transferred to the PSC and taken into the interventional radiology (IR) suite where a mechanical thrombectomy was performed. The operation's efficacy was graded. After the reperfusion was deemed successful, the patient was taken to the neuro intensive care unit for one-on-one nursing for 24 hours. "Lots of things have to happen in parallel, so the speed at which the doctors can get these images and make game-time decisions is remarkable," Kosmoski said.