RAPIDAI

When minutes matter, RapidAI helps stroke teams remove time from a patient's path to treatment

Dr. Tony Goddard in the angio suite of Leeds General Infirmary, part of Leeds Teaching Hospitals NHS Trust, in Leeds, West Yorkshire, UK

It was Sunday evening, and Dr. Tony Goddard was getting ready to leave Leeds General Infirmary. The interventional neuroradiologist had just completed a stroke case at the hospital, part of Leeds Teaching Hospitals NHS Trust, when he was alerted that another patient was coming in.

That patient, Mike Wood, 57, suffered a stroke in his kitchen and was on his way to the hospital via ambulance, having been discovered by his wife, Julie. When he arrived, Mr. Wood was met and assessed by a BAT nurse—BAT stands for Brain Attack Team. His symptoms at this time included right-sided weakness, eye deviation, confusion and the inability to speak. His National Institutes of Health Stroke Scale (NIHSS) score was 18, indicating a potentially severe stroke. A non-contrast CT scan was quickly ordered, followed by CTA and CT perfusion scans.

Leeds Teaching Hospitals are equipped with RapidAI imaging technology, which uses artificial intelligence to quickly analyze a patient's brain scans and deliver results to doctors within minutes—allowing Dr. Goddard and the Brain Attack Team fast access to real-time views of Mr. Wood's brain. They could quickly see that a blood vessel was blocked, how much blood was flowing through, how much of his brain had likely "died" and how much could potentially be saved. This information helped Dr. Goddard make the call to perform a mechanical

thrombectomy, the procedure that would remove the clot and restore blood flow to Mr. Wood's brain. He said the Rapid CTP results were especially useful in determining the amount of tissue at risk of becoming infarcted if the procedure was not done immediately. "The CT perfusion results were very helpful and allowed us to make a very quick decision," Dr. Goddard said. "Just looking at the results, you could see the patient had a huge amount of salvageable tissue."

Back in the angio suite for the second time that day, Dr. Goddard used a stent retriever to successfully remove the stroke-causing blood clot through the left carotid artery. Within 24 hours, Mr. Wood's NIHSS score dropped to 7, and he was well enough to be discharged from the hospital six days after the procedure.
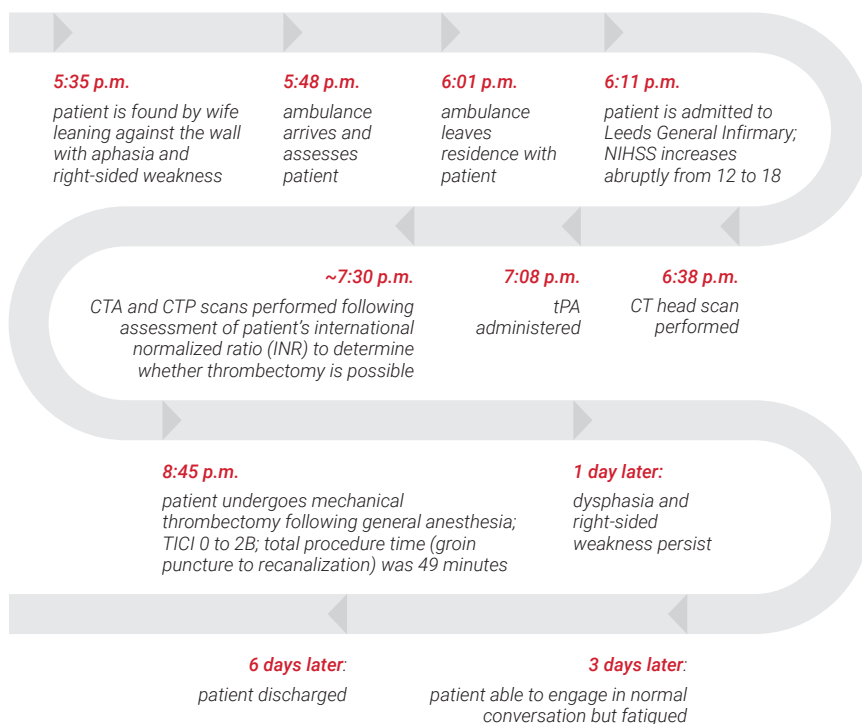
Dr. Goddard credits a number of lucky factors that led to the success of the procedure. "It's one of those situations where everything lines up. There was no traffic for the ambulance crew, so the transfer time was quite good. He collapsed in the kitchen, so he was found immediately. We were already at the hospital (having just completed another procedure), and we had the information available to us with Rapid, which really helped to remove time from the equation."

Mike Wood with his wife, Julie

When Mike Wood had his stroke, he was cooking in his home in Alwoodley, Leeds. The otherwise healthy 57 year old remembers feeling a sudden odd sensation down his right side and losing sight in his right eye, but he doesn't recall much after that. "I remember waking up in the ambulance and then going straight into the hospital for a CT scan, but I don't remember anything much after that for a couple of days," he said. Mr. Wood is fortunate that he was quickly discovered by his wife, Julie, and that Leeds General Infirmary, where he was taken for treatment, is equipped with RapidAI imaging technology, which helped his stroke care team speed up the process of determining the best treatment for his condition: mechanical thrombectomy. "I think it is miraculous. I was told I would have either been dead or paralyzed down the right side without this particular treatment," Mr. Wood said. Within a month after being discharged, he had made a nearly complete recovery: "It's still quite early days but I'm slowly starting to go out for walks with the dog, although Julie is keeping a close eye on me," he said."

Stroke Timeline

5:35 p.m.
patient is found by wife leaning against the wall with aphasia and right-sided weakness

5:48 p.m.
ambulance arrives and assesses patient

6:01 p.m.
ambulance leaves residence with patient

6:11 p.m.
patient is admitted to Leeds General Infirmary; NIHSS increases abruptly from 12 to 18

~7:30 p.m.
CTA and CTP scans performed following assessment of patient's international normalized ratio (INR) to determine whether thrombectomy is possible

7:08 p.m.
tPA administered

6:38 p.m.
CT head scan performed

8:45 p.m.
patient undergoes mechanical thrombectomy following general anesthesia; TICI 0 to 2B; total procedure time (groin puncture to recanalization) was 49 minutes

1 day later:
dysphasia and right-sided weakness persist

6 days later:
patient discharged

3 days later:
patient able to engage in normal conversation but fatigued

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. Based on intelligence gained over 1,000,000 scans from more than 1,600 hospitals in over 50 countries, the Rapid platform uses artificial intelligence to create high quality, advanced images from non-contrast CT, CT angiography, CT perfusion, and MRI diffusion and perfusion scans. The Rapid imaging platform includes Rapid ICH, Rapid ASPECTS, Rapid CTA, Rapid LVO, Rapid CTP, and Rapid MRI. RapidAI also offers SurgicalPreview®, a comprehensive aneurysm management platform. RapidAI empowers clinicians to make faster, more accurate diagnostic and treatment decisions for stroke and aneurysm patients using clinically-proven, data-driven technology. With our validated, trusted products developed by medical experts, clinicians worldwide are improving patient care and outcomes every day. For more information, visit RapidAI.com.

NHS
The Leeds Teaching Hospitals
NHS Trust

Leeds General Infirmary, a hospital operated by Leeds Teaching Hospitals NHS Trust, is the hub of a large regional stroke network serving 2.5 million people in Leeds and the surrounding area. The network handles about 3,000 stroke admissions each year. Patients that urgently require treatment to remove a stroke-causing blood clot are often transferred to Leeds General Infirmary to undergo a mechanical thrombectomy.

In an effort to streamline and speed up the transfer decision-making process for stroke patients, Leeds Teaching Hospitals installed the Rapid imaging platform across various sites in its stroke network. This multi-site adoption of Rapid has allowed physicians like Dr. Tony Goddard, an interventional neuroradiologist at Leeds General Infirmary, to immediately view the Rapid results of stroke patients scanned at other hospitals. With instant access to real-time views of a patient's brain, he can quickly assess whether the patient would benefit from a thrombectomy and advise if a transfer is necessary.

"RapidAI allows us to select the patients who are most likely to benefit from treatment and helps us avoid transferring patients who would not benefit from it. For patients being transferred, it helps us know how much time we have by giving us an idea of how quickly the stroke might progress, so it's really been a revolution in helping patients have the best possible outcome."

Dr. Tony Goddard
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