

# RAPID<sup>AI</sup>

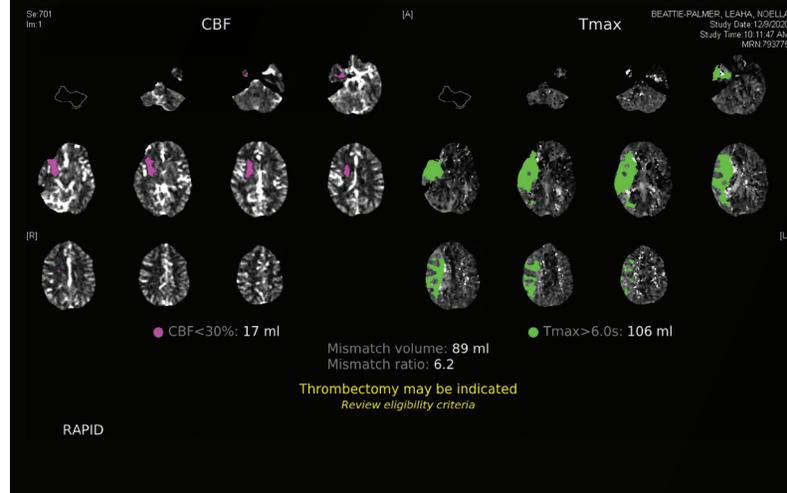
## Stroke teams are using RapidAI to drive parallel workflows and save time

Dr. Luciana Catanese, like many of us, typically begins her workday by checking her email. The morning of Dec. 9, 2020 was no different. The vascular neurologist started her shift at 8 am at Hamilton General Hospital (HGH) in Hamilton, Ontario, and was scrolling through emails on her mobile phone when she saw a new message that was particularly alarming: the CT perfusion imaging results of an acute ischemic stroke patient.

That patient, 50-year-old Leaha Beattie-Palmer, had arrived at another regional hospital in Kitchener, Ontario, only half an hour earlier. Because both hospitals are equipped with RapidAI imaging technology and are part of the same regional stroke network, Dr. Catanese was able to view Beattie-Palmer's imaging results on her mobile device in real time. They revealed a large amount of tissue that could potentially be saved if quick action was taken to restore blood flow to the brain. The procedure to do that, endovascular thrombectomy (EVT), required the patient to be transferred to HGH.

"The images showed a very large mismatch volume, so I knew the patient was a potential candidate for EVT," Dr. Catanese said. "I knew I didn't want to waste any time, so I connected with the team in Kitchener immediately to get the patient's clinical history."

Hamilton General Hospital, operated by Hamilton Health Sciences, is the hub of the Central South Regional Stroke Network, which provides tertiary level stroke care to hospitals within the central south Ontario region. Around 150 thrombectomies are performed there each year on acute



The Rapid CTP results for stroke patient Leaha Beattie-Palmer revealed a large mismatch volume, indicating lots of salvageable tissue.

stroke patients from across the region. Typically, when a patient arrives with stroke symptoms, local hospitals in the network contact provincial telestroke services before connecting with the stroke team at HGH for consultation. In this case, however, through the use of the Rapid imaging platform, Dr. Catanese had immediate access to the patient's images and was able to connect with the site before the initial telestroke consultation was even triggered.

"It allowed me to quickly obtain the required information from the referring site, initiate the transfer process and alert the EVT team," Dr. Catanese said. "It really expedited our workflow. We saved 30 minutes if not more, which is critical since shorter treatment times translate into better functional outcomes for stroke patients."

The stroke team at HGH didn't waste any time. While Beattie-Palmer was being transferred, they began what Dr. Catanese described as a parallel workflow, preparing the angio suite and obtaining consent from the patient's husband for the EVT procedure. They also obtained consent to enroll her in TIMELESS, a clinical trial evaluating the efficacy of the clot-busting drug Tenecteplase.

Upon arriving at HGH, Beattie-Palmer was re-scanned per hospital protocol. Her National Institutes of Health Stroke Scale (NIHSS) score, which had been 16 when she was first admitted, was now 20, indicating a potentially severe stroke. The TIMELESS study drug was administered to potentially help



**Q:** How has RapidAI impacted stroke care in your network?

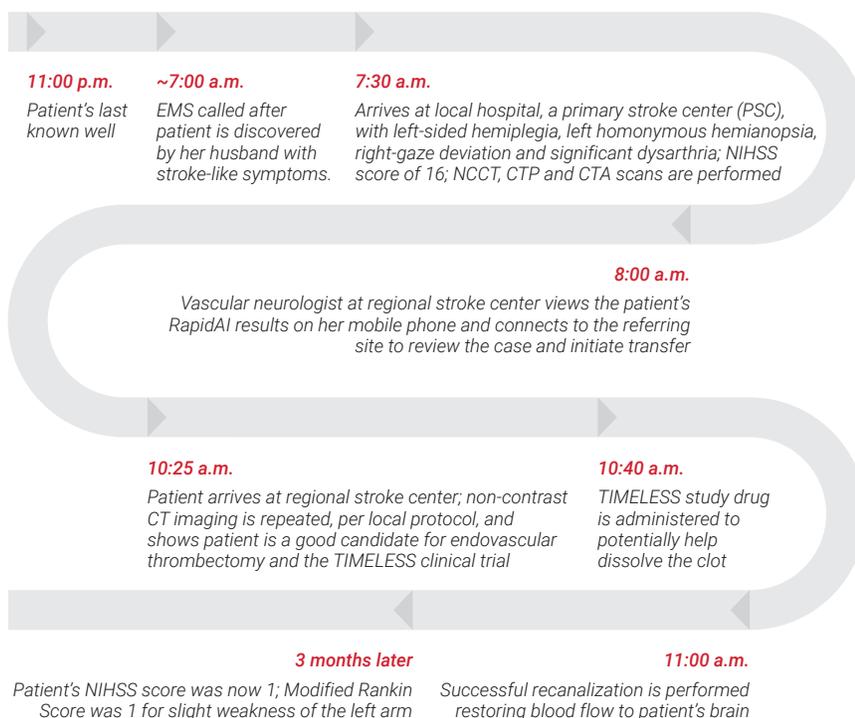
**A:** "First, RapidAI has allowed us to quadruple the time window for revascularization therapy in selective ischemic stroke patients from 6 to 24 hours, which has been a game changer. Secondly, it has provided us with an imaging platform that is available at our fingertips, on our smartphones, whether by email or the Rapid Mobile App, allowing us to review images done at other sites quickly in real time. It has also provided our regional stroke centers with a validated and automated tool to identify EVT candidates, which can expedite stroke triage and transfer decision-making, potentially improving outcomes for patients. It has become an invaluable tool."

**Dr. Luciana Catanese**  
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break up the clot prior to the procedure. In the angio suite, Dr. Bill Wang, the neurointerventionalist on call, performed the mechanical thrombectomy that successfully removed the main clot and restored blood flow to the patient's brain, putting her on track to a nearly complete recovery.

"I think she had an excellent outcome. She regained full independence despite having a significant clot burden and also presenting a long time after she had been last seen well (about 12 hours)," Dr. Catanese said. "RapidAI allowed us to shorten our treatment time considerably, so I think it was highly effective in this case."

## Stroke Timeline



## About RapidAI

RapidAI is the worldwide leader in advanced cerebrovascular imaging and workflow. Based on intelligence gained over 2 million scans from more than 1,800 hospitals in over 60 countries, the Rapid® platform uses artificial intelligence to create high quality, advanced images from non-contrast CT, CT angiography, CT perfusion, cone beam CT and MRI diffusion and perfusion scans. The Rapid imaging platform includes Rapid ICH, Rapid ASPECTS, Rapid CTA, Rapid LVO, Rapid CTP, Rapid for Angio and Rapid MRI. RapidAI also offers Rapid Aneurysm, 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 its validated, trusted products developed by medical experts, clinicians worldwide are improving patient care and outcomes every day. For more information, visit [www.RapidAI.com](http://www.RapidAI.com).

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Leaha Beattie-Palmer with her husband, Mark, and their teenage daughters, Jazmine and Jade, at a soccer game in Hamilton, Ontario, before the Covid-19 pandemic.

## Stroke during a pandemic

Leaha Beattie-Palmer has usually been the one providing care to others. The 50-year-old wife and mother of two daughters is a registered nurse for a homecare service in Ontario. Recently, though, she found herself on the other side of the patient-caregiver relationship when she had a stroke in her sleep. She was discovered by her husband, Mark, who called 9-1-1. Taken first to a hospital in Kitchener near her home, Beattie-Palmer was later transferred to Hamilton General Hospital, where she received a mechanical thrombectomy to remove the clot blocking blood flow to her brain.

The procedure was successful, but it was just the beginning of a long road to recovery. In all, she spent 42 days in hospitals for recovery and rehabilitation, first in Hamilton and then in Kitchener—a journey made even more difficult due to the global Covid-19 crisis. While her husband as primary caregiver was able to visit, Beattie-Palmer could only interact with her teenage daughters via FaceTime.

"It was a little traumatic for my family, because they weren't able to visit like they normally would have been able to. My two daughters saw me when the paramedics took me away, and then they didn't see me until I came home," she said.

Still, despite the hardship, she said she is thankful for the care she received. "Based on what other people have said and what I've seen of other stroke survivors, I think my recovery has been very good," she said. Beattie-Palmer was finally discharged home on Jan. 19, 2021, and not long after was making plans to return to nursing.