Medicare will pay more than $1,000 for AI to analyze a heart scan. Is that too much?

As insurers pay for more AI-powered devices, the debate over value grows

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When patients visit Matthew Budoff for a CT angiogram of their heart, the preventive cardiologist may tell them about a new test. It's not covered by insurance, he explains, but for an extra $850, an artificial intelligence algorithm can quantify and characterize the volume of plaque in their coronary arteries. How much of that plaque is calcified and stable? How much is the more dangerous soft plaque that could rupture and cause a heart attack or stroke?

Budoff is one of a relatively small number of cardiologists and radiologists who offer AI plaque analysis of those coronary CT studies. But next year, the technology is likely to see a significant boost as private insurance companies start to cover the algorithms from AI vendors Heartflow, Cleerly, and Elucid, and Medicare sets a national payment rate of just over $1,000.

The technology is coming of age as debate grows over the cost of devices powered by artificial intelligence and machine learning. AI device companies say that their algorithms' price is justified by the downstream savings when the test results lead to better care and help avoid unnecessary, expensive procedures. But as insurance starts to cover more algorithms, some medical groups and physicians worry AI's costs could balloon out of proportion with its benefits.

Device makers pitch coronary plaque AI as a way to better understand and tackle a patient's risk of heart attack or stroke. Often, a patient getting a coronary CT angiogram to look for blockages might be dismissed because there didn't appear to be a lot of plaque, or referred for an invasive coronary angiogram, in which a flexible tube is threaded through an artery to check for harmful buildup. With the new analysis, Budoff said he can use detailed plaque characterizations from a noninvasive CT scan to inform care decisions for in-between patients.

"If there's not a lot of plaque, but a lot of it's the bad, soft plaque, we up our game," said Budoff, who has run clinical trials for Heartflow, sits on the data safety monitoring board for Cleerly, and received more than $25,000 in speaking fees from Heartflow in 2024. Tracking a patient's plaque volumes over years of treatment will also help guide his management decisions, he said.

Who pays for AI?

Private insurers including Cigna and UnitedHealthcare started covering the technology in October. In January, AI plaque analysis will graduate from its temporary emerging technology billing code to a Category I code for well-established tools. At the end of October, Medicare's physician fee schedule set the national payment rate for that new code.

Now that there's a national rate, removing uncertainty about how much a practice will get paid for the technology, Cara Santillo, Heartflow's senior vice president of market access and reimbursement, expects to see more doctors' offices and imaging centers adopting the company's plaque algorithm.

As the Centers for Medicare and Medicaid Services enables the use of coronary plaque AI, it is also weighing its approach to paying for software as a service and AI devices, requesting feedback from the public in its proposed fee schedule.

The American College of Cardiology noted in its response to CMS that invoiced costs for coronary plaque analysis and a predecessor cardiology AI tool, both around $1,000, are several times more expensive than the technical component payment for the underlying CT angiograms that they analyze.

The organization worries that AI payments have the potential to eat into Medicare's other physician payments. "The system is a zero-sum game," said James Vavricek, ACC's director of federal regulatory affairs. "As more and more things are added, and especially if they're really expensive, then everything else is depressed to squeeze it into the same box."

Pricing for software analysis can be a "black box," the ACC wrote in its comment. "This is not like every other service physicians provide where it's quite clear what the costs are," said Vavricek. "No one has much insight into how that gets determined." Medicare's current method of determining appropriate software and AI fees is a "Band-Aid," the ACC wrote, calling for scrutiny to understand pricing and value.

As those conversations continue, vendors are wary of insurers and medical groups putting all of AI into one bucket. "Everybody talks about AI, but I'd rather them talk about plaque, because plaque is the thing that kills you, and AI is just a method by which we measure it," said Cleerly CEO James Min. "I don't envy Medicare in their analysis of how to move forward in this space," said Heartflow's Santillo. "But I do look forward to working with them on a solution."

What value does AI bring to the table?

The debate over how to value AI devices in health care will become more important as the number of reimbursable AI devices grows. Coronary plaque's predecessor, an algorithm that analyzes real-time blood flow through arteries to determine the extent of possible blockages, is one of the only AI devices to receive significant payment from Medicare. It generated $12.7 million in outpatient payments in 2023 — a relatively small outlay, but for only 14,000 uses of the technology.

The pathway to Medicare payment for coronary plaque has been significantly faster than its predecessor, and it's notable that commercial insurance companies have chosen to reimburse for the technology before Medicare — "something I've never seen in my career," said Elucid CEO Kelly Huang. If coronary plaque follows in the footsteps of the algorithm that measures blood flow, it could come to lead the list of Medicare payments for AI.

"An AI tool has to bring to the dance evidence that either it's offsetting costs or it's enhancing efficiency," said Campbell Rogers, Heartflow's chief medical officer. "If it's offsetting costs, payers may well gravitate towards it and see value in it. And if it's enhancing efficiency, providers may well see value in it."

At the recent American Heart Association meeting in New Orleans, Cleerly and Heartflow presented research showing how their AI could be used to better predict heart attacks and strokes. Adding Cleerly's algorithm to cardiovascular risk scores improved the prediction of a major event from 62% to 75%, showed one observational study based on 6,500 patients in an international registry. A retrospective analysis of about 8,000 patients showed those with the highest plaque volume as measured by Heartflow's AI were more than five times as likely to have a major event.

The hope is that identifying patients at risk of heart attacks and strokes earlier will help doctors prevent them — which factors into their marketed cost savings. A Heartflow studypresented at AHA modeled that using its plaque tool would result in fewer clinical events over time compared to using coronary CT angiograms alone, reducing the cost of an extra year of good-quality life for patients.

"If you could prevent that heart attack or stroke with a $2,000 cardiac CT angiogram with add-ons, you're saving the health system $500,000 of care should that person with a heart attack actually survive," said Elucid's Huang.

Can AI reduce heart attacks?

The companies also say that the tools will reduce the use of the invasive coronary angiograms, which carry rare but serious risks of blood clots and cardiovascular events. "About two-thirds of the people who show up in a cath lab for an invasive procedure are not found to have actionable coronary disease. That's a waste," said Cleerly's Min. "You've subjected a patient to a potentially harmful procedure at a very high cost, and you've got nothing from that."

Sanket Dhruva, an assistant professor in cardiology at the University of California San Francisco School of Medicine who studies evidence-based health policy, agreed that cutting down on unnecessary cath lab procedures would save money and avoid patient risk. “However, if a lot more people end up getting the [AI] test because it’s now available and covered by insurance that may not have even gotten any tests, then the total cost at a population level could be rising,” he said.

The value of AI-based tools like coronary plaque analysis will be easier to understand once physicians can clearly see how they impact patient outcomes — and that will take time. “People don’t have heart attacks just because you want them to,” said Min. “You have to wait and see what happens.” Cleerly started a randomized trial in 2023 that will track whether the addition of AI coronary plaque analysis lowers heart attack rates for patients with no symptoms of heart disease. That is “the ultimate answer that we would be looking for,” said Budoff; its results won’t be available until 2028.

Cleerly and Heartflow have done research suggesting that their tools change physicians’ management decisions, like how to medicate a patient, around half to two-thirds of the time. Some research has suggested those changes have an impact on patients’ cholesterol levels. But that doesn’t necessarily mean those patients live longer, healthier lives, said Dhruva.

“We need to be careful about being enamored with novel technologies. They’re neat, they’re predictive,” said Dhruva. “But it’s only good if you can take actions on that prediction that are going to really steer you away from that heart attack, away from that death, away from that cardiac arrest.”