

AI versus AI: The emerging arms race over health insurance denials

New startups are harnessing artificial intelligence to appeal denials by health insurers

By [Casey Ross](#)

Dec. 12, 2024

Chief Investigative Reporter, Data & Technology | STAT News

Like many Americans, Holden Karau said she was fed up with health insurance.

The software engineer's disillusionment began in 2019, when her insurer, UnitedHealthcare, balked at covering physical therapy after she was hit by a car and could not walk. She said the hassles piled on stress, forced her to pay more out of pocket, and delayed access to care she needed to recover from multiple broken bones.

Now, she's at the forefront of an effort to help patients fight back.

Karau's company, [FightHealthInsurance.com](#), is one of many upstart businesses seeking to harness the power of artificial intelligence to combat denials by health insurers that block access to medical services.

"There's a lot of technology on the insurance side to automate denials," Karau said. "I think it's time to build the tools for patients and providers."

Her company, and its companions in the market, are just getting off the ground. But they promise to help automate appeals for providers and patients, making it much faster and easier to contest denials that often go unchallenged. Evidence shows that tens of millions of denials issued annually by private health insurers are infrequently appealed by patients, even though the appeals are often successful. Both the extent of denials — and patients' success at getting them overturned — vary by coverage type and insurer, but the difficulty of fighting back has created a widespread feeling of disempowerment, experts said.

Pent up rage over health insurance hassles burst into public view following the targeted killing of UnitedHealthcare's chief executive Brian Thompson, whose shooting death prompted mournful responses from co-workers and colleagues but schadenfreude from thousands of social media commenters. Luigi Mangione, a 26-year-old suspect arrested in possession of a screed against health insurers, has been charged with the murder.

A spokesman for UnitedHealth declined to comment for this article.

In recent years, insurers have increased the use of algorithms and predictive software in the process of making coverage decisions. An [investigative series by STAT](#) found that UnitedHealth Group pressured its employees to follow the conclusions of an algorithm called nH Predict to cut off payment for the care of desperately ill older Americans with Medicare Advantage coverage. A subsequent [U.S. Senate inquiry](#) found the company's denial rate for rehabilitative care jumped dramatically following adoption of the algorithm, reaching nearly 23 percent in 2022. The Senate report found that Humana and CVS/Aetna also relied heavily on algorithmic tools in issuing denials. Cigna has faced scrutiny over similar practices.

Meanwhile, advances in AI technology have created an opportunity to help patients push back.

A large handful of start-ups launched in the past couple of years are using generative AI and other forms of the technology to analyze clinical data and coverage requirements, and help draft appeal letters for doctors and patients. Nine companies have raised about \$36 million from investors in recent years, according to Rock Health, which tracks investments in digital health companies. That is not a huge haul in the context of the billions of dollars raised by companies developing AI tools for use in health care. But it is becoming an increasingly active area of innovation, as providers and patients seek relief from denials and constant demands for more paperwork from insurers.

The rise of these companies raises the spectre of an AI arms race between parties on opposites of health care transactions, with both sides relying on an imperfect and ever-changing technology to advocate for their positions. Rachele Hendricks-Sturup, a researcher who has

examined AI's use in coverage decisions, said leaving such consequential decisions up to AI-generated tools may only compound problems of bias and unfairness.

“We need to have clinical subject matter experts that are willing to work with the patient, work with their doctor, to understand what information is needed to get the patient the care that they need,” said Hendricks-Sturup, research director at the Duke-Margolis Center for Health Policy. The challenge, she said, is to deploy AI tools in a way that creates more effective communication and improves upon the fragmented and opaque denial-and-appeal process currently in place.

“We have to take this seriously,” she said. “Lives are at stake. Livelihoods are at stake, Businesses are at stake.”

The companies working on behalf of patients and providers are taking multiple approaches. They include Banjo Health, Crosby Health, ParX Solutions, CoFactor AI, and Guardian AI, all of which are using AI and software tools to help automate appeals by providers. CoverMyMeds and eBlu Solutions are focused on helping doctors and patients get access to medications often restricted by insurers. And a company called Claimable uses generative AI to help patients file appeals, allowing them to draft letters to insurers by analyzing policy details, clinical research, and patients' own medical stories.

Claimable is currently focused on autoimmune disorders and a handful of other conditions where patients experience frequent denials for expensive medications. But its founder, Warris Bokhari, a former physician in the United Kingdom's National Health Service, said Claimable is looking to expand to areas where patients and their families are particularly disadvantaged by denials for care of debilitating conditions.

“People are completely powerless,” he said, adding that patients who fail to appeal denials often abandon care entirely. “The reason Claimable exists is to give people a voice and make it easy for them to appeal.”

The company charges about \$50 for filing the appeal with the insurer. Patients fill out a questionnaire about their care needs, medical history,

and the impact of the denied services on their health — and the AI produces a letter the patient can review, edit, and send to the insurer. The appeal cites peer-reviewed evidence and cases where insurers' denials have been overturned.

The process takes about 30 to 40 minutes, Bokhari said, depending on the complexity of the case. Claimable advertises an 85 percent success rate, which is consistent with numbers public and private researchers have found in examining the outcomes of appeals. Insurers frequently overturn their own denials when challenged, but they can also count on few patients filing appeals and following through with the process. Many patients are either unaware of their right to appeal or lack the energy and stamina to battle insurers when they are simultaneously struggling to regain their health.

The process as it stands now requires focus and resourcefulness.

“It’s the persistence and the amount of time that an individual has in asking the right questions, knowing when to escalate, and having a copy of your medical records,” said Grace Cordovano, an advocate who works with cancer patients. “Even the most well-meaning care team simply cannot spend hours upon hours for any single patient.”

Karau, the co-founder of FightHealthInsurance.com, said she is working on tools to help both doctors and patients appeal denials by insurers. The product available on the web site now is open source and free. It allows patients to upload a denial letter and uses software to extract and summarize the insurer’s rationale for the denial. From there, a patient steps through a series of questions about the denied service and has the option of including details about their medical history.

The information is then fed into a large language model, a form of generative AI that produces text outputs in response to a prompt. The AI, which is trained with data on health insurance denials and appeals, drafts multiple appeal letters, and the patient then selects the appeal letter that most closely reflects their circumstances and can make edits to produce a final version.

The patient can print and send the letter to the insurers themselves, or Karau also offers to fax or mail it for a \$5 fee. “A lot of people don’t have

fax machines at home,” Karau said, adding that she bought an old fax modem on Ebay in order to send appeals to insurers.

Karau said she is also developing a professional appeals product for providers that may eventually become a source of revenue for the company, but she intends to keep the service free for patients.

“Of all the players in the health care space, the patients are the ones who are impacted the most and also have the least amount of resources,” said Karau, who added that more than 200 providers have expressed interest in the as-yet unreleased professional product. “When I talk to providers,” she said, “they’re like, ‘Oh dear God, I spend so much time dealing with insurance. I hate it.’”