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AMAZON AND FACEBOOK ARE STEALING YOUR HEALTH FILES

Amazon's move into analyzing patient records is the latest by a technology company to tap the health-care market

Amazon.com now sells software that enables doctors and hospitals to analyze patient records to look for ways to cut costs and improve outcomes. Above, the company's headquarters in Seattle. Photo: Elaine Thompson/Associated Press

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By
Melanie Evans and
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[Amazon.com](#) Inc. [AMZN +2.15%](#) is starting to sell software that mines patient medical records for information doctors and hospitals could use to improve treatment and cut costs. The move is the latest by a big technology company into health care, an industry where it sees opportunities for growth.

The market for storing and analyzing health information is worth more than $7 billion a year, according to research firm Grand View Research, a business in which [International Business Machines](#) Corp.'s Watson Health and [UnitedHealth Group](#) Inc.'s Optum already compete.

The Wall Street Journal previously reported that [Apple](#) Inc. is talking with the Department of Veterans Affairs about software to allow veterans [to transfer their health records to iPhones](#), and that [Alphabet](#) Inc.'s Google had hired a prominent hospital-system chief [to oversee the company's various health-care efforts.](#)

The new Amazon software can read digitized patient records and other clinical notes, analyze them and pluck out key data points, Amazon said. The company announced the software, first reported by the Journal, on Tuesday.

Amazon Web Services, the company's cloud-computing division, has been selling such text-analysis software to companies outside medicine for use in areas such as travel booking, customer support and supply-chain management.

The health-care application is the newest effort by Amazon to tap into the lucrative health-care market. This year, Amazon paid $1 billion [for an online pharmacy called PillPack Inc.](#) to acquire the capability to ship prescription drugs. The retailer also has been trying [to boost its sales of medical supplies](#) by working with hospitals.

Wiring hospitals
The percentage of U.S. hospitals
electronic health records has gr
after government incentives.

In addition, Amazon is eyeing greater sales of medical supplies through an app, embedded in electronic medical records, that doctors can use to send links to products that patients would buy, according to people who developed the app and doctors who have used it.

The $3.2 trillion health-care market is a natural target for tech companies seeking new sources of growth, especially as more patient medical records get digitized and pressure rises to provide better health care at lower cost.

Health care trailed other data-heavy industries, including retail and banking, in converting critical information to computers

from paper. Electronic health records are now a standard feature in most hospitals, but that wasn't the case a decade ago. Hospitals rushed to install digital records after Congress included incentives for the technology as part of federal spending to speed economic recovery from the last recession. More than 80% of hospitals have electronic health records, up from about 10% in 2008.

Yet Silicon Valley's forays have hit technical and regulatory roadblocks. Verily Life Sciences, Alphabet's medical-device business, said this month it was putting on hold a collaboration to develop contact lenses that could measure diabetics' blood-sugar levels [because of insufficiently consistent measurements.](#)

Is Amazon Going to Rule the World?
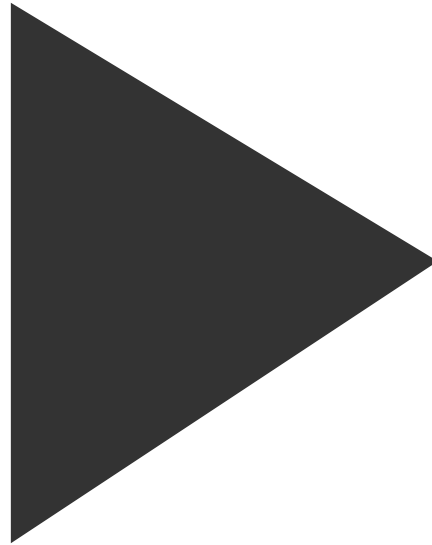
Amazon wants to deliver everything you want to your doorstep, anywhere in the world. But the e-commerce giant faces several challenges in its pursuit of a global empire. WSJ's Karan Deep Singh breaks down the basics with the help of an Amazon delivery box.

Analyzing patient medical records, an obvious application of the natural-language processing capabilities developed by tech companies, has also confronted technical hurdles.

Algorithms currently in use have encountered trouble identifying key data points due to misspellings, abbreviations and doctors' idiosyncratic descriptions, according to Dr. Julia Adler-Milstein, director of the Center for Clinical Informatics and Improvement Research at the University of California, San Francisco.

Amazon officials said the company's software developers trained the system using a process known as deep learning to recognize all the ways a doctor might record notes.

"We're able to completely, automatically look inside medical language and identify patient details," including diagnoses, treatments, dosage and strengths, "with incredibly high accuracy," said Matt Wood, general manager of artificial intelligence at Amazon Web Services.

During testing, the software performed on par or better than other published efforts, and can extract data on patients' diseases, prescriptions, lab orders and procedures, said Taha Kass-Hout, a senior leader with Amazon's health-care and artificial intelligence efforts.

Related

- [Apple in Talks to Give Veterans Access to Electronic Medical Records](#) (Nov. 21)
- [Google Picks Geisinger CEO to Oversee Health-Care Initiatives](#) (Nov. 8)
- [Amazon Buys Online Pharmacy PillPack for $1 Billion](#) (June 28)
- [Amazon's Latest Ambition: To Be a Major Hospital Supplier](#) (Feb. 13)

Users upload health records to Amazon's cloud service, where they can run the text-processing software. Amazon's algorithms analyze text for specific types of data and return the results in an organized format, similar to a spreadsheet.

Amazon Web Services won't see the data processed by its algorithms, which will be encrypted and unlocked by customers who have the key, Dr. Kass-Hout said. Its service is designed to conform with privacy rules laid out in the federal Health Insurance Portability and Accountability Act, he said.

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Demand for such health-data analytics capability is strong as hospitals and doctors offices have sought data-mining services to take advantage of the shift to electronic medical records.

The software will help the Fred Hutchinson Cancer Research Center, which assisted Amazon in testing and training its algorithm, to identify patients eligible for studies of

experimental drugs, according to Matthew Trunnell, the center's chief information officer.

It could also be an economic benefit to the Seattle-based center, Mr. Trunnell said. The center has employed about 60 people to scan and pull essential data from records on about 500,000 cancer patients. As automation does more of the work, some employees could do other tasks.

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