

THIS WEEK



Will machine learning help health care and policymakers solve the pandemic?

The explosive rise in COVID-19 cases has produced immense amounts of data, but harnessing the value of this information to improve treatment and deliver better predictive models of the virus' potential spread has proved challenging. Various groups, however, have begun using artificial intelligence and machine learning to better organize and learn from this data to inform future policymaking and more accurately predict the spread of disease.

Representatives from Harvard University's Kennedy School, the Stanford Institute for Human-Centered Artificial Intelligence and the United Nations recently [collaborated on a platform](#) to produce a decision-making tool that initially will focus on digital contact tracing of coronavirus infections. The platform, which could be operational by September, will identify secondary and tertiary effects of workforce availability and product/supply shortages across critical infrastructure sectors.

The team, led by Harvard University researchers, proposes to use AI to identify COVID-19

outbreaks before they get out of control. A [research paper](#) describes an early-warning system that uses social media posts and internet searches, along with mobility data from smartphones and information from smart thermometers and other sources to inform public policies on reopening and social distancing. When all data sources were applied, the model showed exponential growth roughly 2-3 weeks prior to comparable growth in confirmed COVID-19 cases and 3-4 weeks prior to comparable growth in COVID-19 deaths over the last six months.

The algorithm, the researchers noted, could help guide smoother and safer reopening of states that have enacted shelter-in-place orders and other restrictions on the public to try to stem the spread.

The Harvard-led Collective and Augmented Intelligence Against COVID-19 (CAIAC) will join similar efforts by AI software provider C3 and the Allen Institute for AI's COVID-19 Open Research Dataset to organize raw information from statistics, data and scientific journals and analyze it to support better policy decision-making on COVID-19.

CAIAC leaders believe their work will help policymakers worldwide not only in responding to the COVID-19 pandemic, but also when the next major global health crisis occurs.

Meanwhile, an international team of scientists has developed a model that could predict COVID-19 outbreaks two weeks before they occur, giving time to put effective containment measures in place, according to a recent [New York Times report](#).

Despite these innovative efforts, it's likely to be awhile before we'll know the effectiveness of these AI-based approaches. And there are various factors that no algorithm could account for in predicting future public behaviors, such as the major nationwide protests and mass gatherings that took place after George Floyd's killing that may have seeded new outbreaks, despite precautions taken by protesters.

Likewise, it's too early to know whether such efforts can accurately inform public policy. As some reports have noted, social media and search data aren't the most reliable predictors and search engines like Google can become less sensitive over time — the more familiar with a pathogen people become, the less they will search with selected keywords.

WALGREENS AND AMAZON STEP UP EFFORTS TO DISRUPT PRIMARY CARE



The pandemic continues to take a toll on health care providers, but it hasn't stopped disruptors like Amazon and Walgreens Boots Alliance from advancing their primary care strategies.

Walgreens recently invested \$1 billion to open 500 to 700 [primary care clinics](#) with medical services provider VillageMD in more than 30 markets over the next five years. This marks the first time a national pharmacy chain has tried to build a primary care infrastructure in stores using physicians as opposed to nurse practitioners.

Walgreens plans to staff its primary care locations with 3,600 primary care physicians recruited by VillageMD, along with nurses, social workers and therapists working alongside Walgreens'

pharmacists. This will be a big financial gamble for Walgreens Boots Alliance, which recently filed a \$1.7 billion loss, particularly at its overseas locations, as a result of the pandemic.

The retail pharmacy chain, which has suffered fits and starts over the years in evolving its health care strategy, began trialing full-service doctors' offices in its stores late last year with five clinics in Houston. The successful pilot generated high patient satisfaction scores, Walgreens states.

If successful, the strategy could also provide significant lift to Walgreens' prescription-writing and improve front-of-store sales. CVS Health and Walmart have seen significant growth by adopting an integrated pharmacy model.

Walmart, the nation's largest retailer, last fall began testing [health centers](#) branded with its name. In Calhoun, Ga., for instance, Walmart customers can see doctors for routine checkups (\$30 for those without insurance) and ongoing treatment of chronic illnesses like diabetes and heart disease. The Walmart Health center has a door next to Walmart Supercenter.

CVS has also opened HealthHUBs, offering 21 basic primary care health services. It plans to have a chain of 1,500 locations by the end of 2021.

Amazon is moving at a more deliberate pace with getting into the primary care space, recently announcing it will pilot [20 primary care centers](#) in Dallas-Fort Worth, San Bernardino-Moreno Valley, Calif., Louisville, Ky., Phoenix and Detroit. The centers will serve more than 115,000 Amazon employees and their families with plans to add more in 2021 if these are successful.

The health centers will be staffed by national medical group Crossover Health, which works with self-insured employers on primary care for their workforces. Located near Amazon businesses, the health centers will provide acute, chronic and preventive primary care, along with prescription medications, vaccinations, behavioral health services, physical therapy and more, in person and via telehealth.

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