

In a Post-COVID-19 World, Interoperability Will Prove Key

Christopher A. Brown

A global health crisis can lead to global cooperation, if we work together to create sustainable change

The COVID-19 Pandemic has exposed a chink in the armor of the US healthcare system. It has become clear that our healthcare network is woefully fragmented, with the lack of cooperation between organizations underscored by the absence of data interoperability putting both the general public and care practitioners at a disadvantage. While the free sharing of data between patients, caregivers, and providers is not a panacea for all current and future health challenges, interoperability can certainly help us to flatten the curve.

COVID-19 is the very definition of a population health crisis. To truly understand this disease, we need to analyze it and see its effects from every angle: responses to drugs, mortality rates, comorbidities, patient responses to intubation and other treatments, and what happens after they come off ventilators and return to the general population.

Models are being developed that can leverage this information to produce actionable insights and stratify patients for risk, but we need data to use these tools effectively. Although COVID-19 is like nothing we have seen before, we can seek to refine information that has already been collected on the spread of infectious disease within and across populations. Some technology leaders, along with innovative healthcare partners are working to optimize and normalize this data for validation with the goal of revealing signals and trends which can result in better outcomes for patients.

The current options for data collection have one thing in common: they require a patient to show up. We ask them to log on and fill out a questionnaire, or to physically present themselves before a doctor. While such practices serve well enough for triaging of patients, we must look for ways to leverage the data that already exists, without relying on continually adding new data to the equation. This pandemic has uncovered the importance of true preemptive population health, rather than the reactionary "calling in sick" health.

Locking up the data

An individual's healthcare records are commonly delivered across multiple settings. Throughout a patient's journey, their medical records may lead from a private physician's office to an imaging center, hospital, outpatient center, and back to the original physician, each step producing its own records. For quality care, accessible information must accompany the patient every step of the way. If all these twists and turns exist within just one patient's medical journey, how much more so of a whole population? And how can we combat the spread of diseases among the population if this data is inaccessible and disorganized?

The infrastructure of our care system is fragmented. Imagine city planners designing New York City's transit system without communicating – the roads, the subway, the train all built independently of one another would lead to chaotic intersections and more than a few deaths. So why do we provide healthcare to 328 million Americans based on data gathered in such an irrational way?

Other industries have long shown the way in creating a common and mostly secure platform for data access and sharing. Our advancing technology in healthcare now has the potential to transform our healthcare system into one that continuously learns and improves, using predictive analytics and decision support tools. However, without access to the necessary data, these tools will be useless.

Free sharing of data promotes interoperability

The barriers that exist when it comes to sharing data are not trivial. Issues relating to privacy, legality, ethics, economics, and politics must all be considered. While we do not have all the solutions to these obstacles, priorities must be determined, and the public health considered alongside these challenges.

The key to improving patient outcomes and managing population health is interoperability, the transfer of information seamlessly between multiple sources. Leveraging healthcare's full potential requires the free (and secure) sharing of data with the technologies able to analyze it effectively.

For example, if a patient regularly sees a cardiologist, but between appointments is admitted to the ER, the cardiologist should automatically have this information available. Interoperability of data will allow us to avoid unnecessary duplication of services, reduce costs, and provide safer and more compassionate care. Interoperability will not only help individual patients but the collating and sharing of robust health records will support more accurate tracking and prevention efforts for a range of public health threats.

The free exchange of data affords providers lifesaving and cost-effective insights, enabling them to make beneficial care decisions. Improving patient outcomes and reducing cost is not just about having the data but putting that data in the right hands to provide actionable insights.

Looking to the future

The [World Health Organization's eHealth Resolution](#) includes the aim "to foster exchange of data and information for promotion of health, health systems, and training of health-care workers." Effective exchange of health information is vital to improving the capabilities of hospitals and the health of populations.

When the dust settles, health systems will be reeling from the physical, emotional and financial burden caused by COVID-19. Instead of a well-deserved break, staff will be inundated with a second wave of patients, this time from a backlog of innumerable medical procedures that were put on hold throughout this pandemic. This demand will hit providers hard, but it will also provide an opportunity to utilize data to stratify patients at-risk for specific diseases or downstream complications. We need to prioritize these patients, so hospitals can do the right work on the right people without wasting precious resources.

Failure to learn from this pandemic will mean we miss an opportunity for real advancement in medical practice. The tools which will be most important in the future are those that can analyze existing population data and provide answers without relying on a constant stream of new data. The future is in sight, but without better access to the health records currently held in silos, we cannot optimize these algorithms effectively. Sharing data freely is the key to curbing this pandemic and mitigating the effects of any future outbreaks.