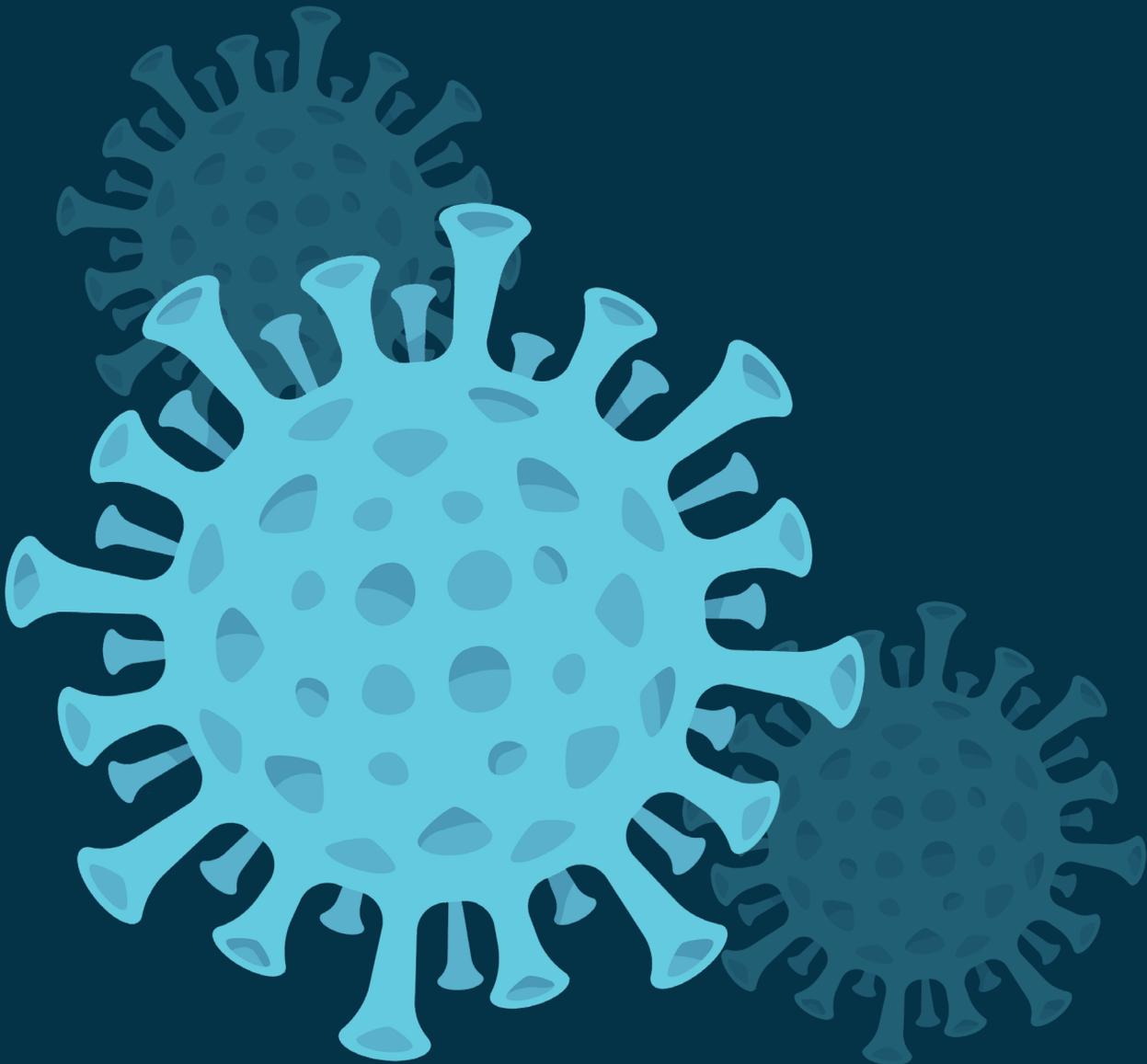


WHITE PAPER

# Why Patient Identity Management Tools are Critical for COVID-19 Care and Disease Surveillance





Approximately **40%** of patient demographic data has been missing from commercial laboratory test feeds for COVID-19

JANET HAMILTON, COUNCIL OF STATE  
AND TERRITORIAL EPIDEMIOLOGISTS,  
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In just a few short months, the novel coronavirus and its resulting disease, COVID-19, have put the entire healthcare system under an unprecedented amount of stress.

From empty primary care practices and overflowing ICUs to strained medical supply lines and broad guestimates about the prevalence of disease in the community, COVID-19 has performed the unenviable task of exposing dangerously weak links in the care continuum.

First responders, frontline clinicians, public health officials, and researchers have been heroically working around the clock to deliver patient care and respond as quickly as possible to rapidly changing conditions.

In order to successfully curb the contagion, however, they will need ongoing support and creative solutions for some of healthcare's most fundamental problems, including oft-overlooked health information management issues such as patient identity matching and health information exchange.



## Identifying infrastructure gaps that impact COVID-19 responses

On the surface, electronic data integrity might not seem like the most pressing issue to address during a global pandemic, acknowledged Dan Cidon, Chief Technology Officer at NextGate Solutions.

“We understand that people are just doing whatever they can to cope with the huge volume of patients coming in,” he said. “Unfortunately, that urgency to move at light speed 24 hours a day means that some of the basic data elements needed to track and manage patients effectively are not being captured. That is going to have far-reaching consequences for treatment, testing, and the scientific community.”

Epidemiologists are already feeling the impact of data collection shortfalls, [said](#) Janet Hamilton, MPH, of the Council of State and Territorial Epidemiologists at the March 26 meeting of the ONC’s Health IT Advisory Committee (HITAC).

Approximately 40 percent of patient demographic data has been missing from commercial laboratory test feeds for COVID-19. Normally, for other reportable diseases, only 10 percent of data elements are missing. The lack of phone numbers, addresses, and other critical contact information results in significant delays when trying to notify patients of their status and trace contacts to contain spread of the disease, she stated.

Gaps in data generation and health information exchange can also directly affect the treatment plans for vulnerable individuals, Cidon added.

“Preexisting conditions, for example, are very, very important to know about in this situation. Having access to a comprehensive medical history can make a huge difference in the care someone receives for COVID-19,” he said.

“We need to create an effective, comprehensive disease registry and information exchange infrastructure without massive duplication rates, missing demographic elements, or data quality issues so that we start to understand the overall behavior of the virus and use that information to execute coordinated and effective public health responses.”

“It becomes a lot more difficult to coordinate the care of individuals if you don’t have a patient identity management system for bringing disparate records together into a cohesive story of needs and services.”

Daniel Cidon, CTO  
NextGate

## Tackling COVID-19’s supersized patient identity management needs

[Symptoms of COVID-19](#) run the gamut from almost non-existent to immediately life threatening and can escalate quickly from one to the other. As a result, patients who may initially seek a telehealth consult or visit an urgent care facility for mild discomfort could be admitted to an unrelated hospital within a matter of days.

Variations in the [availability and speed of testing](#) could also mean that COVID-19 testing results from the first visit are still pending upon admission and may get lost along the way – especially if the laboratory is missing vital demographic data elements.

“The challenge is compounded by the way healthcare organizations assign unique identifying numbers to medical records,” explained Cidon. “A patient who presents at urgent care or primary care initially will get one identifier that is associated with their record.”

“Now, if we took that information and pushed it into a COVID-19 disease registry through HL7 messaging or FHIR, that data will be available to researchers and officials who can observe what the disease is doing in the community. That’s extremely useful and a great first step.”

However, when the patient visits the ED and is admitted to the hospital, it’s very likely that the ED will not know about the previous encounter. And the information about the admission will not necessarily make its way into the same disease registry as the first event, leaving researchers unaware of the patient’s outcomes.

“Without any system linking these care sites and registries, the patient is likely to start accruing multiple identification numbers for different fragments of his record,” Cidon said. “And providers would have to rely on the patient himself to communicate his history. We all know that patients don’t do that very well, especially when they’re acutely ill. That is how important information falls through the cracks.”

The technology behind the enterprise patient matching index (EMPI) can help.

“The goal is to establish a unifying identifier for each individual that follows them as they move throughout the care system,” he said. “This isn’t a brand-new idea, obviously, and it’s been a pain point in healthcare for quite some time. COVID-19 is simply reinforcing why we need to address it.”

At [the Pandemic Response Hackathon](#) in late March, Cidon detailed how an EMPI approach can bridge the gaps and create an overarching patient identity management platform that benefits patients, providers, and public health researchers alike.

“With our system, information would be streaming into the platform from all participating providers, each of which is likely to have its own patient identification schema,” he said. “We use statistical matching and machine learning to identify the probability that a given record is associated with a particular individual. If the matching score is confident enough, we aggregate that data with all the other recent and long-term medical records for that person to give providers a broad a view of this person’s healthcare journey.”

Putting together the puzzle pieces of a patient’s record has multiple benefits. First, providers who are actively treating the individual will have access to information about prior visits, preexisting conditions, and the progression of COVID-19 symptoms.

Second, researchers and analysts gain a longitudinal way to follow the person’s cycle of onset, illness, and recovery, which can inform community interventions.

“If we can do this at scale and push this data to the right public health agencies in a secure and private manner, it will allow epidemiologists and government officials to get a very robust picture of what is happening in their regions so they can allocate resources, adjust social restrictions, and keep vulnerable people as safe as possible,” Cidon stressed.

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## Collaborating across the industry to stay one step ahead of coronavirus

As the coronavirus pandemic advances quickly, healthcare stakeholders must move even faster to safeguard their communities.

“We simply can’t afford to take months or years to convene workgroups and coalitions to start addressing these data management issues as many entities have tried to do in the past,” said Cidon.

“The good news is that there are lot of healthcare organizations, private sector companies, and regulatory agencies that remain extremely committed to working through these challenges – and many of them are using the lessons they’ve learned so far to tackle the situation and make improvements as quickly as possible.”

Cidon recommends that healthcare stakeholders keep data integrity and patient identity management high on the priority list as a way to support public health and accelerate the research community’s ability to gain visibility into the emerging patterns of the disease.

“If healthcare systems have any gaps in their patient identity management processes today, especially in terms of sharing information with public health, disease registries, or other entities, I would advise them not to let that slide,” he commented. “Now is not the time to take the foot off the gas in terms of data management.”

“As patients start to recover, we will need to think about continuity of care and keeping primary care, long-term care, and other providers informed about post-discharge instructions and future clinical needs,” he added. “Information sharing between hospitals and the primary care environment has always been a problem, so we need strong patient identification protocols to act as the glue between these organizations. EMPI technology is one proven way to provide that.”



Enabling a coordinated, cooperative approach to patient identity management with EMPI technology will equip healthcare entities with the tools they need to make informed decisions about care – and eventually begin to lift restrictions on communities in a safe and measured manner.

“We are going through a lot of pain right now as a nation, and it’s heartbreaking to see and experience,” Cidon said. “At NextGate, we are deeply committed to helping the industry in any way we can to relieve the pain points in patient identity management so providers can focus on making the best possible decisions for their patients and bring us through to the other side of this pandemic.”

### Why NextGate?

It’s simple: our proven and powerful software helps providers across the healthcare industry manage their data more effectively and improve their bottom line. Our identity matching solutions connect the entire healthcare ecosystem into a single, fully integrated view to drive critical improvements in quality, efficiency and safety.

For two decades, NextGate has been helping organizations transform their siloed systems into a seamless, highly efficient network, where individuals are accurately and consistently matched to their data.

NextGate’s flagship enterprise master patient index (EMPI) currently manages patient identities for more than two-thirds of the U.S. population and a third of the population in the U.K.

### Contact Us

To learn more about NextGate’s market-leading identity management solutions, visit [nextgate.com](https://nextgate.com).

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