

# N3C: Translating Health Data Into Health Solutions

**NIH** National Center  
for Advancing  
Translational Sciences

Patient electronic health records (EHRs) may hold answers to many questions about COVID-19 and other diseases. But a major hurdle to accessing and analyzing this information is that EHRs often reside in inaccessible and incompatible information systems.

The National Center for Advancing Translational Sciences (NCATS) and its government, academic and industry partners teamed up at the start of the pandemic to break down these long-standing barriers. Their solution: the National COVID Cohort Collaborative (N3C) Data Enclave, a state-of-the-art national data resource that unlocks the potential within millions of patient health records to speed medical research.

## About the N3C Data Enclave

With billions of rows of data, the N3C Data Enclave is the largest open U.S. database for ongoing COVID-19 research. The data represent millions of COVID-19–positive individuals from each state and nearly every county. The enclave’s size, scope and diversity help to ensure public health answers benefit all Americans and their communities.

The secret to the N3C Data Enclave’s success isn’t information, however — it’s people. Teams of clinicians, scientists, informaticians, policy experts and more work as one to achieve a shared goal: Unite data from patient health records nationwide, and then transform that information into health solutions for everyone.

## N3C Delivers

The N3C Data Enclave has harnessed the power of EHRs to translate data into knowledge that improves COVID-19 care and sharpens public health policy. Researchers have used the N3C Data Enclave to reveal risk factors for long COVID, help clinicians choose the most effective treatments, and highlight the greater hospitalization and mortality risk that COVID-19 poses for rural communities and those who are immunocompromised. Other studies

are helping cut COVID-19 risks for people with chronic medical conditions and improve health outcomes among underserved communities hardest hit by the pandemic.

## How It Works

Hospitals and health care plans across the country contribute existing deidentified patient clinical, laboratory and diagnostic data on an ongoing basis to the secure, cloud-based N3C Data Enclave.

N3C’s robust data pipeline harmonizes the EHR data. It also connects to many other information sources, creating even clearer pictures of COVID-19 health outcomes among different communities. Advanced informatics technologies enable researchers to find patterns faster than they would with traditional methodologies.

NCATS takes multiple precautions to protect the privacy, confidentiality, security and integrity of its data through rigorous access review and strict governance and data use agreements.

## Beyond COVID-19

NCATS has piloted the use of the N3C ecosystem for several additional conditions. The pilot projects have shown that the N3C ecosystem can support broader clinical research using real-world data. They point to the possibility of an NCATS National Clinical Cohort Collaborative that builds on and extends the expertise and resources initially developed in response to the pandemic.

Learn More About N3C:



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