

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 representing more than 5 million COVID-19 positive cases by May 2022, the N3C Data Enclave is the largest open U.S. database of data from patient EHRs — with a size, scope and diversity that mirror the nation and ensure public health answers benefit all Americans and every community.

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 patient health records from across the country, then transform that information into health solutions for everyone.

N3C Delivers

The N3C Data Enclave is already harnessing 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 the patient data to data sets with demographic, mortality and other information to create clearer pictures of COVID-19 health outcomes among different communities. Advanced informatics technologies enable researchers to find patterns faster than traditional methodologies can, especially as the pandemic evolves.

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.

Learn More

NCATS expects to support the N3C Data Enclave for COVID-19 research through 2024 and is exploring the possibility of scaling the centralized N3C model well beyond the pandemic. Learn more about being part of the N3C Data Enclave model to catalyze the translation of health data into health solutions.

About the N3C: <https://ncats.nih.gov/n3c>

N3C Cohort Exploration Dashboard: <https://covid.cd2h.org/dashboard/>

N3C Data Enclave Publications: <https://covid.cd2h.org/dashboard/index.jsp?publications>

N3C Data Enclave Projects: <https://covid.cd2h.org/projects>

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The N3C is a partnership among the NCATS-supported Clinical and Translational Science Awards (CTSA) Program hubs, the National Center for Data to Health, and National Institute of General Medical Sciences—funded Institutional Development Award (IDeA) Program Networks for Clinical and Translational Research (IDeA-CTR) networks, with overall stewardship by NCATS.