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National Clinical Cohort Collaborative (N3C) Community Forum

October 30, 2026

National Center for Advancing Translational Sciences

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Welcome

Joni Rutter, Director, NCATS

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Agenda

- Welcome
- Governance update
  - Strategic Partners
  - Community Code of Conduct
- N3C Architecture and Access
  - The new N3C, How it works, Getting started
- Challenge Opportunity for N3C Data

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N3C Is Open to Receive Data

Contribute your institution's data to N3C.

Help build a national real-world data resource.

01 REGISTER IN ORBIT

Institutional Signing Official (ISO) and Delegate Binding Official (DBO) establish the institution's Legal & Compliance accounts.

02 EXECUTE AGREEMENTS

Complete the Data Transfer Agreement (DTA) and Linkage Honest Broker Agreement (LHBA) and select your data governance model.

03 CONFIRM IRB

Confirm reliance and complete the applicable Advarra process.

04 TECHNICAL ONBOARDING

Prepare your disease-agnostic dataset, generate PPRL tokens, and transfer data securely.

IN RETURN N3C harmonizes contributed data to OMOP and provides data-quality feedback and onboarding support.

START IN ORBIT

orbit.n3c.ncats.nih.gov

Scan to begin

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N3C Governance

How the community, committees, and NCATS connect

Rebecca Baker
Senior Advisor to the Director, NCATS

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N3C Strategic Partner Organizations

Laura James

UAMS

Ruth O'Hara



Rusty McCulloh



Emily Pfaff



Jareen Meinzen-Derr

Paul Harris

VANDERBILT UNIVERSITY

Cincinnati Children's

Michael Wagner

Elmer Bernstam

UTHealth Houston

Richard Moffitt

EMORY

Shaun Grannis

Regenstrief Institute

Dan Cooper

The University of North Carolina at Chapel Hill

Meredith Nahm Zozus

UT San Antonio
The University of Texas at San Antonio

Shawn Murphy

Katherine Hartmann

Tom Campion

OCHIN

Dan Ford

JOHNS HOPKINS UNIVERSITY

Rachel Hess

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Community Input on N3C Governance

N3C Community Code of Conduct

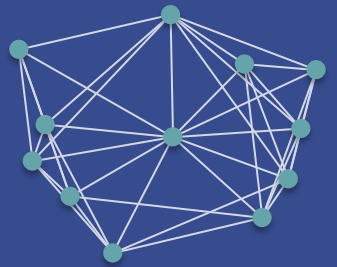
Thank you for your feedback N3C Community Code of Conduct – will apply to all who touch N3C data

N3C Attribution and Publication Principles

Coming soon: Community input on Peer Attribution and Publication Principles

https://ncats.nih.gov/research/research-activities/n3c/resources

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Discover the N3C

Your Front Door to National Real-World Data

Luca Calzoni, MD, PhD · N3C RWD Program Technical Lead

N3C Community Forum · October 30, 2026

National Center for Advancing Translational Sciences

Outline

A quick tour: scale, value, trust, and how institutions can get started.

01 **THE NEW N3C**
Where N3C is today, what it is, and why it matters

02 **HOW N3C WORKS**
Data, tools, architecture, and safeguards

03 **GET STARTED**
Orbit, institutional participation, and the path forward

The New N3C

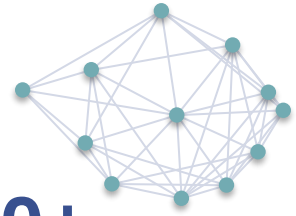
Where N3C is today, what it is, and why it matters

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What N3C Is Now

N3C is more than a dataset.

A national real-world data ecosystem — data, governance, and community.



5,600+
Members

21M+
People represented

34B+
Rows of data

9,000+
Citations

Community

A national scientific collaboration of institutions and investigators.

Governance

Secure, controlled, transparent access — governed at every layer.

Data

A national-scale harmonized data ecosystem — including current and developing sources such as EHR, claims, mortality, imaging, and geospatial data.

Together: a shared path from research question to evidence.

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Where We Are Today

Now

Reopened

Access restored

- Enclave & tools back
- Community re-engaged
- Governance restarted

Underway

Enhancing

Strengthening the foundation

- Governance & security
- Orbit & applications
- CMS + new data

Next

Expanding

Building what's next

- Imaging & geospatial data
- Dynamic workspaces
- Multi-disease scale

One N3C — broader data, stronger safeguards, a growing national community.

Why It's Worth It

Start faster. Spend less. Reuse more.

BUILD YOUR OWN

20+

months

Build systems · Hire staff · Absorb costs

OTHER PLATFORMS

28+

weeks

Platform, compute & data fees

WITH N3C

~8

weeks

Free · Harmonized · Reproducible

~8 weeks to first analysis · No cost to registered users

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Value Across the Community

Value at national scale — for everyone it touches.

Institutions

National reach · Visibility · Shared infrastructure

Contributors

Multiply data value · Interoperability · National impact

Researchers

Richer questions · Secure collaboration · Reproducibility

Patients & communities

Representation · Stronger evidence · Better care

2,000+
CTSA-affiliated members

300+
CTSA-authored publications

200+
Data scientists trained

How N3C Works

Data, tools, architecture, and safeguards

Richer Data & Free Tools

A growing data universe.

EHR
Labs · Vitals · Dx · Meds
NOW

CMS
Medicare & Medicaid
2026

Mortality
National records
2026

Imaging
Linked imaging
2027

Social & Population
ACS · SVI · WorldPop
NOW

Environmental
Air · Climate · Hazards
NOW

Free tools & training: N3C Academy

- ✓ **Learn** — Courses & tutorials
- ✓ **Practice** — Synthetic data and workshops
- ✓ **Reuse** — Code, concept sets & workflows
- ✓ **Apply** — Shareable research assets

Learn more: n3c.ncats.nih.gov/education

Cleaned, harmonized, and free to use from day 1.

What Changed

Legacy N3C — one environment

Contributing data

Single enclave

Data preparation and analysis together

New N3C — two separated environments

✓ Separated environments

Data preparation is decoupled from analysis; raw data is vaulted beyond researcher reach.

✓ No raw data in the workspace

Only de-identified, approved, project-specific data is provisioned.

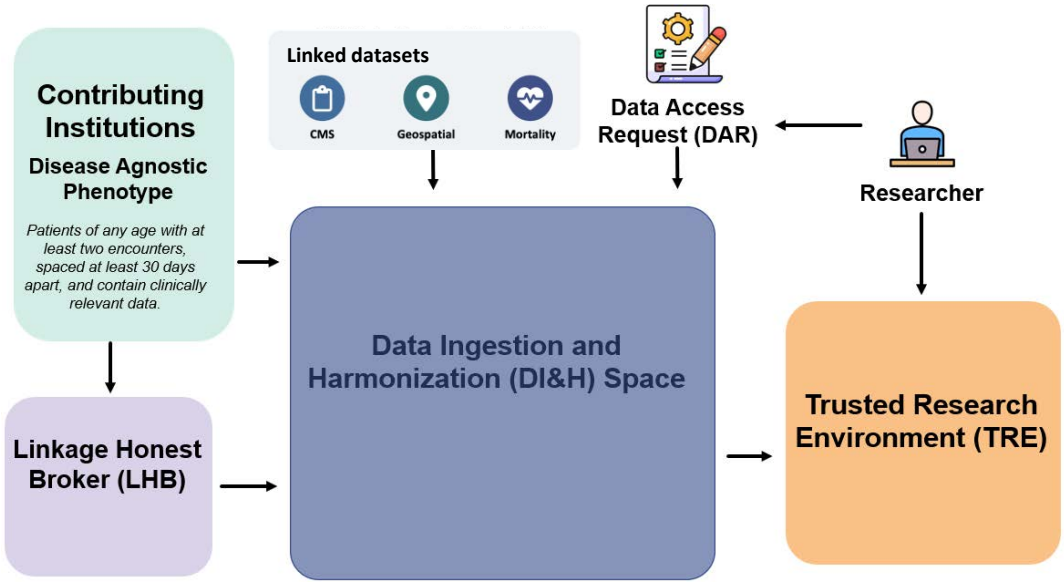
✓ Governed access at the boundary

Every project passes DAR + DAC + institutional review first.

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N3C Decoupled Architecture

Data processing and analysis never share an environment.



Who operates each layer

- **Regenstrief Institute** — Linkage Honest Broker
- **Axle Informatics** — Data Ingestion & Harmonization
- **Palantir** — Trusted Research Environment

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How Your Data Stays Protected



Protected by design

No standing access.
Minimum-necessary data.
Every action governed and logged.

Institutions stay in control
Agreements & data-use limits honored

Identity removed, privately linked
No identities ever enter research

Separated environments
Raw data vaulted beyond researcher reach

Approved projects only
Independent Data Access Committee (DAC) + IRB review

Reviewed outputs only
No row-level export; all activity logged

Held to federal controlled-access standards: HIPAA Safe Harbor · NIST SP 800-122 · FedRAMP-authorized enclave · CADR.

Get started

Orbit, institutional participation, and the path forward

Meet Orbit — the Front Door

One place to register, manage people and projects, and track every step.

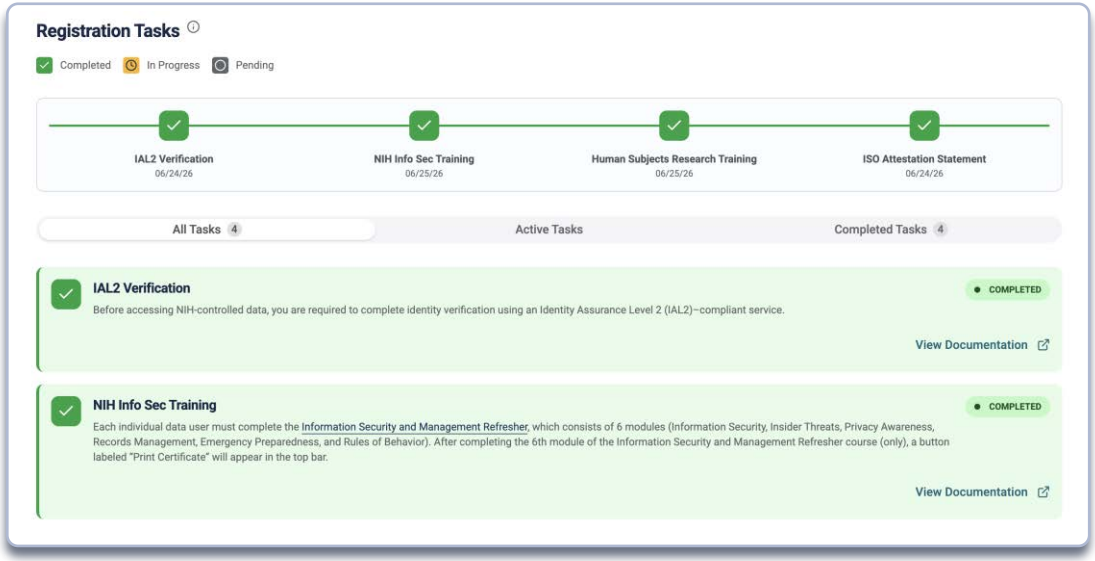


1. **Register**
   Create your account or institutional profile.
2. **Manage people**
   Officials, PIs, and project team roles in one place.
3. **Manage projects and approvals**
   Submit and track requests, institutional reviews, and approvals.
4. **Track status**
   Agreements, activity, notifications, support documentation.

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Your Registration, Tracked in Orbit

Everyone can see exactly where they stand — no guesswork.



Identity → Training → Attestation → Approval — each task with a clear status and next step.

The Full Path, End to End

One journey, two moments: institutions now, researchers next.

Open now · Institutions

1. Register in Orbit
2. Execute agreements
3. Choose governance
4. Harmonize data
5. Data available

Coming next · Researchers

1. Create account
2. Find data
3. Data Access Request (DAR)
4. Review & approve
5. Workspace in Trusted Research Environment (TRE)
6. Share results

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Open Now · Institutions Join & Contribute

How an institution can make its data available.

1

Register in Orbit

Institutional Signing Official (ISO) and Delegate Binding Official (DBO) set up accounts

2

Execute agreements

Sign the Data Transfer Agreement (DTA) and Linkage Honest Broker Agreement (LHBA)

3

Choose governance

Select a data-use model (A / B / C)

4

IRB approval

Confirm reliance; submit the site application

5

Submit your data

Secure transfer; quality checks

In return, at no cost:

N3C harmonizes your data to OMOP and returns a completeness & quality report — plus concierge support for your first PIs, and your choice of three governance models so you stay in control.

Coming Next · Researchers Discover & Request

How a researcher will go from question to analysis.

1 — Create account & train
No-cost account; required trainings

2 — Find data
Browse harmonized datasets

3 — Data Access Request (DAR)
Define the question & cohort

4 — Review & approval
Data Access Committee (DAC) + institutional review

5 — Work in Trusted Research Environment (TRE)
Secure, project-specific workspace

6 — Share results
Reviewed aggregate outputs

The review that protects everyone:

A federal Data Access Committee (DAC) checks access level, IRB, prohibited uses, phenotype fit, and each institution's data-use limits — before any data is provisioned. No standing access; the workspace is time-limited.

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orbit.n3c.ncats.nih.gov

Scan to begin

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What Your Organization Gets Back

Get More Value from Your Data

Receive your institution's data back with no-cost OMOP harmonization, data-quality and completeness reports, and quality scorecards, helping make your data cleaner, more consistent, and interoperable.

Accelerate Research, Reduce Costs

Launch research in approximately 8 weeks – not 20+ months - using N3C's secure, compliant platform, without the expense or responsibility of building and maintaining your own infrastructure.

Unlock New Research Possibilities

Connect your contributed data with national datasets and supplemental sources, including CMS, geospatial, and mortality data, to explore research questions your institution could not answer alone.

Strengthen Your Research Impact

Participate in national research collaborations and publications while helping ensure your institution's patient populations are represented in the evidence informing future research.

Build Your Team's Research Capabilities

Access no-cost N3C Academy courses, hands-on synthetic-data training, and reusable educational materials to strengthen your team's research skills and capabilities.

Receive Dedicated Support and Guidance

Benefit from guided onboarding, support for your first research champions, and dashboards to track your institution's projects and publications.

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Support & Where to Bring Questions

Connect with us. We are here to help you get started.

Orbit

orbit.n3c.ncats.nih.gov

Register & manage your setup

Support

n3c.ncats.nih.gov/clinical-cohort/support

Questions & guidance

Office hours

Tuesdays & Thursdays, 1–2 PM ET

Meet the team

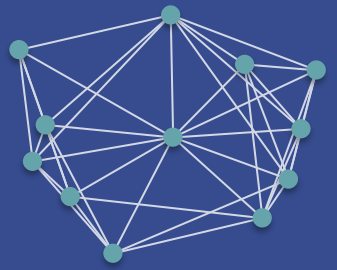
Our door is open.

Bring us the hard questions — we'll listen, follow up, and be transparent.

Questions?

Thank you — and please continue the conversation with us as you explore N3C and what comes next.

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N3C Challenge Opportunity

Chris Hartshorn, PhD · NCATS Division of Clinical Innovation

N3C Community Forum · October 30, 2026

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N3C Real-world Evidence Innovation Challenge

Background
Analytic models developed in one environment, frequently fail to demonstrate stable and reliable performance, across different health systems

Directly targets a translational bottleneck
Tests whether analytic approaches remain reliable across health systems. Establishes benchmarks for reproducibility, transportability, and stability to inform *Good Algorithmic Practice*

Builds on existing infrastructure (CTSA + N3C)
A two-phase competition with up to **$6 million in prizes**. Phase 2 validates analytic approaches across health systems in the secure N3C environment

Shifts the focus to validated analytic performance
Rewards validated model reliability across independent real-world sites (*aka* external validation) versus model novelty and performance to a single data set



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N3C Real-world Evidence Innovation Challenge: Priorities and Partners

PRIORITY AREAS OF INTEREST

The Challenge welcomes a broad range of clinically meaningful use cases, with special emphasis on areas where generalizability is critical and challenging.

CANCER

Variability in treatment pathways, biomarker testing, disease subtypes, and patient populations across health systems.

KIDNEY DISEASE

Longitudinal disease progression and outcomes that depend on consistent measurement, lab practices, and care delivery.

PEDIATRICS

Developmental variability, smaller sample sizes, and heterogeneity in care delivery across institutions and populations.

ESI SUPPORT

Early Stage Investigators are encouraged to participate. ESIs may be eligible for additional support, including mentorship and visibility opportunities.

OPEN TO A BROAD RANGE OF MODELS AND METHOD TYPES

Submissions may include any analytic approach—traditional to advanced—that generates predictive or causal insights from real-world data.

PREDICTIVE MODELS

- Risk Prediction
- Classification
- Time-to-Event (Survival)
- Early Warning & Alerts
- Other Predictive Outcomes

CAUSAL INFERENCE / EFFECT ESTIMATION

- Treatment Effects
- Target Trial Emulation
- Instrumental Variables
- Propensity Score Methods
- Other Causal Approaches

METHOD TYPES (TRADITIONAL TO AI/ML AND BEYOND)

- Traditional Statistics
- Machine Learning
- Deep Learning
- Ensemble Methods
- Hybrid / Novel Approaches
- Other Methods

NIH NATIONAL CANCER INSTITUTE

NIH *Eunice Kennedy Shriver* National Institute of Child Health and Human Development

ASPE Assistant Secretary for Planning & Evaluation

NIH National Institute of Diabetes and Digestive and Kidney Diseases

FDA U.S. FOOD & DRUG ADMINISTRATION

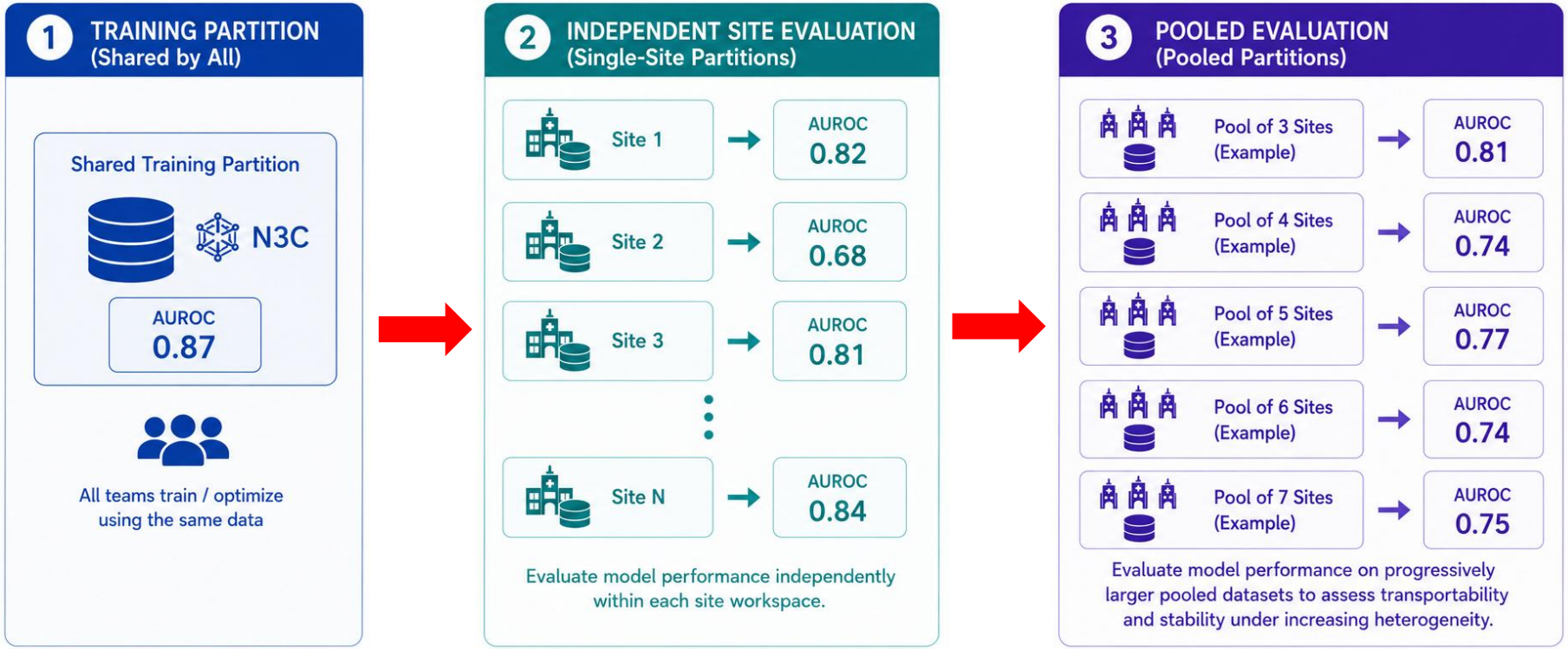
* NIST National Institute of Standards and Technology U.S. Department of Commerce

* Not formal partner – collaborator only

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N3C Real-world Evidence Innovation Challenge: Phase 2 Evaluation Funnel



* Example for predictive analytic submission

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N3C Real-world Evidence Innovation Challenge: Key Dates

Timeline

Milestone	Date
Challenge Launch (Registration Opens)	Sept. 15, 2026
Technical Assistance Webinar	Feb. 16, 2027
Phase 1 Submission Deadline	**Mar. 26, 2027**
Phase 1 Top Submissions Announced	May 2027
Phase 2 Submission Deadline	**Late 2027**
Phase 2 Winners Announced	Jan. 2028
Winner's Presentation	Feb. 2028

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N3C Real-world Evidence Innovation Challenge: Dates & Participation

March 26, 2027 = Phase 1 Deadline

Late 2027 = Phase 2 Begin

Technical assistance webinar: February 16, 2027 (for registrants)

Forms and full rules - scan the QR code. Email registration and Phase 1 materials to NIHRWEInnovationChallenge@mail.nih.gov

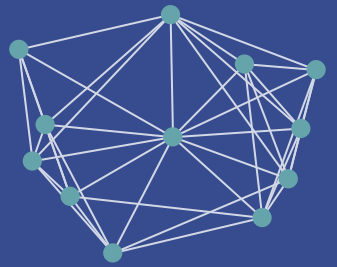
For Phase 2: Selected teams must meet applicable N3C agreements, approved data access, training, and secure workspace requirements before validation

RWE Innovation Challenge Announcement

N3C DTA/DUAs

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Questions?

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Extra

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N3C · Where Raw Data Lives

Researchers only ever see de-identified data.

1 · Sealed

Raw — contains identifiers

Raw data arrives in a locked drop-box opened with a one-time key. The original is deleted within minutes.

2 · Automated scrubbing

Identifiers removed

An automated gatekeeper removes names, addresses, contacts, and record numbers; dates reduce to birth year.

3 · Open

De-identified — what users see

Only scrubbed, de-identified data can be queried — the only data researchers ever reach.

Data moves one way and never comes back. Layered controls — one-time keys, one-way scrubbing, separate partner streams, audit logging.

HIPAA Safe Harbor · NIST SP 800-122

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N3C · Data Access Committee (DAC) Review

Six checks before any data is provisioned.

1 Access level

Confirm the requested data-access level and authorization.

2 IRB alignment

Conduct IRB alignment and data-linkage review.

3 Prohibited activities

Screen for and rule out prohibited NIH/HHS activities.

4 DAR / phenotype

Check the Data Access Request (DAR) and phenotype against the study design.

5 Institutional limits

Apply each institution's data-use limitations.

6 Final determination

Complete all assessments and finalize the decision.

A policy, scope, privacy, and agreement-alignment review — not scientific peer review. The DAC gives final approval for every request.

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N3C · Institutional Governance Options

After signing, each institution chooses how its data may be used.

Option A

DAC-administered review

Set once · minimal effort

Data is available for all N3C DAC-approved projects. Zero ongoing burden.

Option B

Categorical data-use limits

Set-and-forget

Preset restrictions (e.g., exclude certain codes or topics) are coded into the system.

Option C

Real-time opt-out

Per request

The institution is notified of each request and may review and opt out within a set window.

Across all three, the N3C Data Access Committee performs the final review and approval.

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N3C · Key Technical Roles — Least Privilege

Operational staff can touch only what their function requires.

Role	What they can access	Key limits
Operations & Security Engineer	Metadata and logs across layers	No row-level data · no analysis
Data Engineer	Pipeline data (read-controlled)	No research use · no export
Data Quality Engineer	Quality outputs & scorecards	No write access · no export
Clinical Informaticist	Mapping & phenotype data	No unrestricted querying
Data Quality Analyst	Aggregated outputs & dashboards	No raw data · no querying

Who holds each operational role — and their organization — is visible to any logged-in user in the public request registry.