National Core Indicators: A Quality Improvement System That Supports Research

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Purpose and Use of NCI Data

In 1997, representatives from state developmental disabilities (DD) service systems, NASDDDS, and HSRI developed the National Core Indicators (NCI) program to help state systems understand how well services and supports are working and identify opportunities for improvement. **NCI was designed primarily for accountability, performance measurement, benchmarking, and continuous quality improvement.**

At the same time, the standardized, multi-state data collected through NCI provide a valuable resource for research. NCI data have been used to examine patterns, disparities, associations, and trends across states and over time, and have supported numerous peer-reviewed studies. **Researchers can use NCI data to address important questions about the experiences and outcomes of people with intellectual and developmental disabilities.**

The fact that NCI was designed as a performance measurement and quality improvement system does not make the data unsuitable for research. Rather, as with any dataset, the research questions and conclusions should be aligned with the design and characteristics of the data.

Research and Quality Improvement: Different Purposes, Complementary Uses

Research and quality improvement data collection can look very similar on the surface. Both may use surveys, interviews, administrative data, and statistical analyses. The

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primary difference is often the purpose for which the data are collected and how the findings are intended to be used.

Research	**Quality Improvement (QI)**
Seeks to answer questions that contribute to broader knowledge.	Seeks to understand performance and identify opportunities for improvement.
May ask: "What factors are associated with this outcome?" or "Does this intervention work?"	May ask: "Where are there strengths or gaps?" or "How can services be improved?"
Findings are often intended to inform knowledge beyond the study sample.	Findings are often used to guide action within a system, program, or organization.
May use experimental, quasi-experimental, observational, or other study designs.	Often uses practical, standardized measures that support monitoring and improvement.
May emphasize causal inference, generalizability, and replication, depending on the research question.	Often emphasizes timely, actionable information and monitoring over time.

These purposes are not mutually exclusive. **A dataset developed for quality improvement can also support rigorous research.** The appropriate analytic approach depends on the specific research question, the design of the dataset, the sampling approach, the measures available, and the intended interpretation of the findings.

What NCI Data Can Support

NCI data can support a wide range of research and analytic activities, including:

- Describing the experiences and outcomes of people with intellectual and developmental disabilities
- Examining differences across states, populations, or subgroups
- Identifying disparities and inequities
- Examining associations between characteristics, services, and outcomes
- Identifying patterns and trends over time

- Benchmarking performance across participating systems
- Generating hypotheses for future research
- Evaluating whether outcomes change following system or policy changes, when the study design and analytic methods support such an analysis
- Informing quality improvement and policy discussions

Because NCI data are observational, researchers should distinguish between **associations** and **causal conclusions**. NCI data can provide important evidence about relationships and patterns in the population studied. Stronger causal claims may require additional design features or analytic approaches, such as longitudinal data, quasi-experimental methods, or other strategies appropriate to the research question.

This is a consideration for interpreting the findings—not a reason to avoid research using NCI data.

NCI Data Are Collected Using Rigorous and Standardized Methods

NCI uses standardized measures and protocols to support consistent data collection and meaningful comparisons across participating states. Depending on the survey, NCI data collection includes standardized protocols, interviewer training, reliability procedures, and consistent measures across states.

These features strengthen the value of NCI data for benchmarking, performance measurement, system monitoring, and research. As with any observational dataset, researchers should carefully consider issues such as sampling, participation, measurement, missing data, and the potential for confounding when designing analyses and interpreting findings.

Research using NCI data can be rigorous. Appropriate methods may include:

- Careful descriptive and inferential statistical analyses
- Multivariable modeling
- Adjustment for relevant covariates
- Analysis of sampling and nonresponse
- Trend analysis
- Benchmarking
- Analysis of disparities and subgroup differences

- Sensitivity analyses
- Appropriate methods for addressing confounding and other sources of bias

The appropriate methods depend on the research question. There is no single analytic approach that defines either "research" or "quality improvement."

An Example

Imagine a state DD system wants to understand and improve services for people with intellectual and developmental disabilities.

Quality Improvement Application

The state administers NCI surveys to understand how services are performing. The state receives information about strengths and areas for improvement, identifies lower rates of people choosing their daily activities, develops an improvement plan, and monitors progress over time.

The primary goal is to identify opportunities for improvement and use information to guide action.

Research Application

A researcher uses NCI data from multiple states to examine whether the availability of certain services is associated with differences in reported community participation, while accounting for relevant individual and system characteristics.

The goal is to identify and better understand patterns and relationships that may contribute to broader knowledge.

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Both uses are valuable. The first is primarily a quality improvement application. The second is a research application using data collected through a quality improvement and performance measurement system.

The Key Question: What Conclusions Do the Data Support?

The distinction between quality improvement and research matters primarily because it helps users interpret findings appropriately.

For example, an analysis might find that people receiving a particular type of service report higher levels of community participation. This finding could support an important research conclusion about an association between the service and the outcome. However, if the

study is observational, the finding alone may not establish that the service caused the higher level of participation.

Similarly, a state may identify lower levels of community participation than other states and use that information to prioritize improvement efforts. That finding can be highly actionable even though it does not, by itself, demonstrate that a particular intervention will produce a specific outcome.

In both cases, the data provide useful evidence. The appropriate interpretation depends on the research question, study design, and analytic approach.

In Summary

NCI is primarily a performance measurement and quality improvement system, but its data also support valuable research. NCI's standardized, multi-state data provide researchers with opportunities to examine the experiences and outcomes of people with intellectual and developmental disabilities, identify disparities, study associations and trends, and generate evidence to inform policy and practice.

The most important consideration is not whether NCI data can be used for research. They can. Rather, researchers should ensure that their research questions, methods, and conclusions are appropriate for the data and study design.

NCI data can serve multiple purposes: supporting quality improvement, performance measurement, benchmarking, accountability, system monitoring, and research. These uses are complementary. Research can help identify important patterns and relationships, while quality improvement can translate information into action and evaluate progress over time.