



The North Carolina Longitudinal Data System: An Update on Early Progress

Annual Report to the North Carolina Joint Legislative Education Oversight Committee, the North Carolina Joint Legislative Commission on Government Operations, and the North Carolina Joint Legislative Oversight Committee on Information Technology

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Contents

Executive Summary	2
Background	3
Purpose of this Report.....	3
About the North Carolina Longitudinal Data System.....	3
Update on 2021-22 Activities	5
Establishment of the Governance Structure of NCLDS	5
Memorandum of Understanding.....	5
Administrative Code	5
Governor’s Executive Order	6
Naming of the NCLDS Advisory Board	6
Appointment of an Executive Director	6
Initial Development and Applications of the System	6
Progress Toward Establishment of a Research Agenda.....	7
Use Cases	7
Priorities for 2022-23	8
Planned and Proposed Expansions of System Data	8
Other Priorities.....	8

Executive Summary

This report updates the development of the North Carolina Longitudinal Data System (NCLDS) and summarizes planned and proposed expansions of that system.

The concept of a state longitudinal data system was first approved by the North Carolina General Assembly in 2012. The purpose of NCLDS is to link record-level data across state agencies and institutions, support data exchange among those agencies and institutions, and produce information that can be used to guide state decision-making.

Since January 2021, NCLDS has made progress both in the establishment of its governance structure and in conducting preliminary exercises to pave the way for future applications of the system. In 2022, NCLDS also began to identify additional data sets to consider incorporating into the System over time.

For the remainder of 2022 and into 2023, NCLDS plans to develop recommendations for its final data architecture, prepare a phased opening schedule leading to full operation, and create products and tools that will enhance and encourage use of the system by multiple audiences.

Background

Purpose of this Report

In accordance with [NCGS 116E-4\(c\)](#), this report provides an update on the implementation of North Carolina Longitudinal Data System (NCLDS, or “the System”) activities, along with information about proposed or planned expansions of NCLDS data. The report concludes with proposed steps the North Carolina Department of Information Technology’s (NCDIT’s) Government Data Analytics Center (GDAC) will take in 2022-23 to generate longer-term recommendations for NCLDS configuration and other potential changes.

About the North Carolina Longitudinal Data System

The concept of a state longitudinal data system was first approved by the North Carolina General Assembly in 2012, with significant legislative amendments in 2013, 2016, and 2019.¹ Per statute, NCLDS is “a statewide data system that contains individual-level student data and workforce data from all levels of education and the State’s workforce.” The purpose of NCLDS is to “(1) Facilitate and enable the exchange of student data among agencies and institutions within the State; (2) Generate timely and accurate information about student performance that can be used to improve the State’s education system and guide decision makers at all levels; [and] (3) Facilitate and enable the linkage of student data and workforce data.”

NCLDS is led by an executive director and is governed by an advisory board comprising representatives from each state agency that contributes data (“sector contributors,” which currently include the North Carolina Department of Health and Human Services, the North Carolina Department of Public Instruction, the North Carolina Community College System, the UNC System, and the North Carolina Department of Commerce), as well as a representative from the North Carolina Independent Colleges and Universities, which also contributes data.

Per the enabling statutory language, NCLDS is not a passive data storage utility; instead, its mission is to provide sector contributors and other trusted practitioner and research partners with secure access to cross-sector, longitudinal, and linked record-level data for the purpose of helping them address the state’s most pressing questions via data-informed decision-making, continuous improvement, and performance management processes. More specifically, NCLDS is:

- A data exchange and research **partnership** of the sector contributors listed above;
- A **process** for:

¹ NCGS 116E (https://ncleg.gov/EnactedLegislation/Statutes/HTML/ByChapter/Chapter_116E.html)

2022 NCLDS Report: Update on Early Progress

- Establishing a cross-sector, longitudinal research and evaluation agenda for North Carolina;
 - Vetting, approving, and supporting agenda-relevant projects; and
 - Vetting and approving research, evaluation, and practitioner partners, and incorporating them into agenda-relevant work;
- A **tool** for providing sector contributors and practitioner partners with access to cross-sector data relevant to each agency's reporting, research, decision-making, and evaluation needs; and
- A **strategy** for linking, packaging, and securely delivering data from participating longitudinal databases² to sector contributors and partners

When fully operational, NCLDS plans to:

- Oversee implementation of sector contributor-vetted governance procedures for NCLDS-accessible data use;
- Produce *secure* longitudinal data products in response to sector contributor and partner needs; and
- Produce *aggregated and deidentified* longitudinal data products for public use.

NCLDS is housed at NCDIT in GDAC, which works with state agencies to define their analytic needs, determine access to required data sources, and scope the level of effort to support the analytics development.

² Current participating longitudinal databases: Early Childhood Integrated Data System (ECIDS); NC SchoolWorks (NCSW); and the Common Follow-Up System (CFS)

Update on 2021-22 Activities

Accomplishments since January 2021 fall into two categories: *Establishment of the Governance Structure of NCLDS* and *Initial Development and Application of the System*.

Establishment of the Governance Structure of NCLDS

In 2019, GDAC worked with the University of North Carolina at Chapel Hill to develop a strategic plan that would align NCLDS with the needs and priorities of policymakers and sector contributors. North Carolina stakeholders, experts from other states, and evidence-based best practices shaped the contents of the report, which evolved into a roadmap for modernizing NCLDS. Four major structural achievements followed the completion of that report between January 2021 and July 2022, each of which clarified foundational aspects of the emerging System.

Memorandum of Understanding

The foundational document for the NCLDS structure—a Memorandum of Understanding for the Exchange of Longitudinal Data Between Contributors—was executed in June 2020, with the support of the Secretary of State, the State Superintendent of Public Instruction, the Secretary of Health and Human Services, and the President of the Community College System. The memorandum was expanded in early 2021 to include support from the UNC System, the North Carolina Department of Commerce, and the North Carolina Independent Colleges and Universities.

In addition to clarifying key definitions and noting applicable data privacy laws, the memorandum also outlines sector contributor agreements for reviewing and approving data requests, as well as rules for transferring data into and accessing data in the System, exchanging data among signatories, and disclosing data to approved third-party requestors. Also included are auditing and tracking rules, procedures for handling security incidents, and general liabilities.

Administrative Code

Effective January 2021, Administrative Code 09 NCAC 06D³ outlines rules governing the NCLDS data request process, requirements for data-sharing agreements between contributors and GDAC, and requirements for data-sharing agreements between

³ <http://reports.oah.state.nc.us/ncac/title%2009%20-%20governor%20and%20lt.%20governor/chapter%2006%20-%20office%20of%20information%20and%20technology%20services/subchapter%20d/subchapter%20d%20rules.html>

requestors (both contributor requestors and third-party requestors) and NCLDS contributor owners of the data being requested.

Governor's Executive Order

Finally, Governor Cooper's Executive Order 249 (February 2022)⁴ further formalized a governance structure for NCLDS by detailing membership of the governance board, establishing the first two committees of that board (the Data Governance and Data Quality committees), and outlining board responsibilities.

Naming of the NCLDS Advisory Board

In July 2022, the entities named in Executive Order 249 designated a member to serve on the advisory board.

- Department of Health and Human Services: Chief Data Officer Jessie Tenenbaum, as designated by Secretary Kody Kinsley
- Department of Public Instruction: Superintendent Catherine Truitt (board vice-chair)
- Community College System: [TBD]
- University of North Carolina System: Senior Vice President for Strategy and Policy Andrew Kelly, as designated by President Peter Hans
- Department of Commerce: Secretary Machel Sanders (board chair)
- North Carolina Independent Colleges and Universities: President Hope Williams
- Department of Information Technology: Secretary James Weaver (non-voting)
- Office of the Governor: Governor's Education Advisor Geoff Coltrane (non-voting), as designated by Governor Roy Cooper

Appointment of an Executive Director

The first executive director of NCLDS was appointed in April 2022.

Initial Development and Applications of the System

Among the earliest actions of the executive director and affiliated GDAC staff have been the development of a draft strategic plan for NCLDS, examination of data architecture options for NCLDS, discussions of potential end-user portals for different levels of NCLDS data (from de-identified and aggregated data for public consumption to secured and linked data for use by contributors to custom cross-sector datasets for research and evaluation), and creation of outreach materials to build public awareness of the potential impact of NCLDS. In addition, NCLDS also has made progress on development of a

⁴ <https://governor.nc.gov/media/2937/open>

research agenda and on trial applications of the System, both of which are highlighted below in greater detail.

All actions have been completed in partnership with the NCLDS Steering Committee.

Progress Toward Establishment of a Research Agenda

With the support of all Sector Contributors, as well as of some interested third-party partners, NCLDS continued development an initial research agenda.⁵ When completed, this research agenda will capitalize on data available via NCLDS to address cross-sector, longitudinal questions of importance to the state. Though not complete as of this report, the current draft of this agenda includes a focus on connections between the following: early childhood and K12 outcomes; K12 and postsecondary/early workforce outcomes; postsecondary and workforce outcomes; and education workforce preparation, education workforce, and student outcomes. In addition, in late Spring 2022, the Executive Director began exploring ways to connect this NCLDS research agenda to other state-level research agendas.

Use Cases

To test the viability of the System as outlined by the memorandum of understanding and Administrative Code 09 NCAC 06D, and to demonstrate the capabilities of the System, NCLDS undertook several use cases in 2021 and 2022. Each use case involved at least one of the contributors, and several included third-party partner participations as well.

Collectively, the use cases incorporated data from all sector contributors; topics included: progress on COVID education recovery efforts; connections between early childhood and early-grade outcomes; and connections between secondary, postsecondary, and workforce outcomes.

As of this writing, each use case was at a different stage of development, but none had yet reached a stage of completion that would allow for assessment of the case's success. NCLDS will provide updates throughout 2022 as some of these initial use cases end.

⁵ In February 2020, as part of the work of the Informed Decision-Making Collaborative (<https://hunt-institute.org/resources/2021/07/the-informed-decision-making-collaborative/>), NCLDS sector contributors and other trusted partners began development of the draft research agenda upon which the current agenda is based.

Priorities for 2022-23

Planned and Proposed Expansions of System Data

In 2022, NCLDS began the process of developing a procedure for identifying additional data sets to consider incorporating into the System over time. Initial expansion will include incorporation of contextual data not sourced from current contributors but relevant to their goals (e.g., non-degree credentialling data); later expansion proposals will be informed by the results of the use cases described above.

Other Priorities

The primary new NCLDS goal for GDAC in 2022-23 will be development of detailed recommendations for the final data architecture of NCLDS. Discussions with all Sector Contributors are underway, with an initial set of recommendations anticipated later in 2022.

Other priorities for the next year include generating Sector Contributor agreement on a phased opening schedule for NCLDS, developing a formal dictionary of NCLDS data elements, creating a preliminary public-facing web page, and beginning to develop initial NCLDS Inquiry Tools (e.g., dashboards, reports, data stories, knowledge visualizations, research-ready data sets, metrics, analytics, etc.) and other sample products.

[Back Page Material]