Rising to the Challenge: Building Effective Systems for Young Children and Families, a BUILD E-Book

BUILD INITIATIVE

Strong Foundations For Our Youngest Children

Preface

Race to the Top-Early Learning Challenge (ELC) is the major federal funding initiative seeking to support states in developing high quality early childhood systems, especially targeted to children with high needs. Launched in 2011 as a joint initiative of the U.S. Departments of Education and Health and Human Services, there have been three rounds of major grants under the ELC, with 20 states now participating and funding that totals just over $1 billion.

This federal initiative had particular meaning to the BUILD Initiative and its founders, members of the Early Childhood Funders Collaborative. For more than a decade, BUILD has served as a catalyst for change and a national support system for state policy leaders and early childhood systems development. Not only did BUILD's work help shape the federal initiative, but it was also the fulfillment of the founders' most fervent hopes–that states could create detailed blueprints for an early childhood system, with budgets to support significant infrastructure development. BUILD staff, consultants, and many colleagues in the field rose to the challenge and provided extensive support to states as they applied for, and now implement, the federal opportunity.

The Early Learning Challenge supports states in their efforts to align, coordinate, and improve the quality of existing early learning and development programs across the multiple funding streams that support children from their birth through age five. Through the ELC, states focus on foundational elements of a state system: creating high quality, accountable early learning programs through Quality Rating and Improvement Systems; supporting improved child development outcomes through health, family engagement and vigorous use of early learning state standards and assessments; strengthening the early childhood workforce; and measuring progress.

Thirty-five states plus the District of Columbia and Puerto Rico applied for the 2011 round of the Early Learning Challenge grants with nine states initially and then five more selected from this pool for funding. Sixteen states plus the District of Columbia responded to a new 2013 third round of grants; six were selected.

Round 1:	California, Delaware, Maryland, Massachusetts, Minnesota, North Carolina, Ohio, Rhode Island, and Washington
Round 2:	Colorado, Illinois, New Mexico, Oregon, and Wisconsin
Round 3:	Georgia, Kentucky, Michigan, New Jersey, Pennsylvania, and Vermont

Since the launch of the ELC, grantee states have rapidly moved from concept to implementation. Through this E-Book, we share learnings from the initial implementation of the efforts, highlighting experience, trends, and reflections stemming from the significant federal investment in this strategic work. The chapters are authored by experts who have worked in tandem with state leaders to gather information. By documenting the experience of the states, captured through interviews with state leaders, *Rising to the Challenge* provides a source of learning for all fifty states and territories and puts into practice our leadership commitment to continuous learning in the best interests of the children and families to whom we are all dedicated.

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Stacking the Blocks: A Look at Integrated Data Strategies

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2015

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Introduction

The Race to the Top-Early Learning Challenge (ELC) funds states to support "America's youngest learners and [help] ensure that children, especially children with high needs, enter kindergarten ready to succeed in school and in life." Three primary objectives are to:

1. Increase the number and percentage of low-income and disadvantaged children in each age group of infants, toddlers, and preschoolers who are enrolled in high-quality early learning programs.
2. Design and implement an integrated system of high-quality early learning programs and services.
3. Ensure that any use of assessments conforms to the recommendations of the National Research Council's reports on early childhood.[1]

To meet these goals, policymakers require a clear picture of the needs of children in their communities, the available services, the accessibility of those services, the quality of the services, and the capacity of the workforce. Accurate, timely, and comprehensive data on children, early learning and development (ELD) programs, and the ELD workforce can provide this information and be used to enhance quality, understand service gaps, identify geographical areas of greatest need, and allocate limited resources. These data can be a powerful tool in supporting the services that improve the lives and outcomes of young children.

> States are using the ELC to build a solid foundation for their data systems.

At the same time, states have confronted some obstacles in linking the various components of ELD data. First, the data that are collected are often housed in different databases and gathered for different purposes. Additionally, many states are not capturing all the child-level, workforce-level, and program-level data needed to answer key policy questions. Gathering and bringing the data together requires the coordination and buy-in of state leaders, an alignment of data collection practices to ensure data quality, and the technical expertise and funds to actually pull the data together.

[1] Department of Education and Department of Health and Human Services, "Applications for New Awards; Race to the Top—Early Learning Challenge," *Federal Register* 76, No. 166 (August 26, 2011): 53563, http://www.gpo.gov/fdsys/pkg/FR-2011-08-26/pdf/2011-21756.pdf

The Early Childhood Data Collaborative (ECDC encourages state policymakers to develop coordinated ELD data systems to improve the quality of ELD programs and the workforce, increase access to high-quality ELD programs, and, ultimately, improve child outcomes. In 2012, the ECDC published a brief analyzing the trends and opportunities in 30 states' Early Learning Challenge (ELC) applications related to building or enhancing ELD data systems. The brief included information about states that received grant funds and those that did not.[2] We learned that states planned to use the ELC to make data accessible; improve and inform ELD practice and policy; link existing ELD data systems, such as linking early intervention data to pre-kindergarten data; fill existing ELD data gaps, including in workforce and child development data; strengthen the connection between ELD data and data from other data systems, such as the state's K-12 educational data system; and develop interagency data governance structures. In 2013, ECDC conducted a survey of states and found that in 49 states and the District of Columbia, child-level data across ELD programs are not always linked. As a result, most states cannot answer key policy questions about the children served in their

[2] Early Childhood Data Collaborative, "Developing Coordinated Early Childhood Longitudinal Data Systems: Trends and Opportunities in Race to the Top Early Learning Challenge Applications," September 2012, accessed May 22, 2015, http://www.ecedata.org/files/ECDC-RTTT-Sept27%20(1).pdf.

publicly-funded early care and education programs.[3] This chapter outlines the progress of ELC-awarded states in building or enhancing state early learning data systems. In the fall of 2014, ECDC conducted interviews with 7 of the 10 grantees that had both prioritized data systems development goals in their applications[4] and completed at least one year of the grant cycle. The seven states are Maryland, Minnesota, North Carolina, Rhode Island, Illinois, Oregon and Wisconsin. In addition to the interviews, ECDC reviewed states' initial applications and most recent progress reports.

States are using the ELC to build a solid foundation for their data systems. First, this chapter describes each state's main goals for their ELC data work. Then, it examines five different building blocks that states are focusing on during this early stage of the grant:

(1) States are assessing the early learning landscape and creating a vision for their ELD data use.

(2) States are developing interagency governance structures.

(3) States are filling early learning data gaps.

(4) States are building and strengthening linkages between ELD data and data from other data systems.

(5) States are planning for sustainability of ELD data efforts.

> This chapter explores how states addressed the main challenges they faced and provides examples of the progress states have made.

Next, this chapter explores how states addressed the main challenges they faced and provides examples of the progress states have made. The chapter concludes with states' recommendations on how federal funding could best continue to support this work.

Goals for Early Learning Challenge Data Efforts

The Early Learning Challenge gave states working on early learning data systems an infusion of funds to integrate ELD data and to link ELD data to other data systems. The snapshots below cover state ELD data plans and goals, providing an important window into each state's priorities and implementation plans. See Appendix A for full state profiles and grant activities completed by each state.

[3] 2013 State of State's Early Childhood Data Systems, accessed May 22, 2015, http://www.ecedata.org/2013-national-results/.

[4] 16 ELC grantees completed optional section E(2) of the grant application.

State Snapshots

Illinois (2013): Goal is to build an early learning and development data system within the Illinois Longitudinal Data System (ILDS), leveraging the existing ILDS legal/governance structure, administrative personnel, and end-user supports. The new data system will include three levels of data: child/family, workforce, and program (including TQRIS ratings). Illinois plans to use its data system to answer planning questions, such as where additional child care slots are needed and what programs should be expanded. When an unduplicated count of children is available, it will link with a geographic information mapping system to identify areas with existing services and areas of need.

Maryland (2012): Goal is to expand the Maryland longitudinal data system to include an early childhood data warehouse that tracks child, program and workforce level data (see Figure 1, page 9). Data dashboards and GIS mapping will be used to communicate information to multiple stakeholders about number of children served in programs, school readiness indicators, the health and safety of programs (licensing), and measures of program quality. Maryland's data system will allow it to track early childhood investments as well as outcomes.

Minnesota (2012): Goal is to create a linkable early childhood longitudinal data system that houses select data elements from multiple state agencies that support early childhood initiatives. The state will develop a new Minnesota Early Learning Information Porta, to provide user-friendly, web-based dashboards and reports for educators, administrators, and parents. Ultimately, data will be used to build a more global understanding of young children and address achievement gaps in the state.

North Carolina (2012): Goal is to build an Early Childhood Integrated Data System (NC ECIDS) that will be able to interact with the state's P-20W[5] longitudinal data system. NC ECIDS will have a public-facing portal with standard reports and information, and additional private pages for approved researchers or agency staff. The state will also create an improved state early childhood workforce data system that will provide an online portal for providers and interface with NC ECIDS.

Oregon (2013): Goal is to create a statewide early learning data system that aligns with state's K-12 longitudinal data system. The new data system will include data for children in Head Start, Head Start Pre-K, and Early Intervention-Early Childhood Special Education. Users will be able to connect the children in publically funded early learning programs and the children receiving child care subsidies through unique identifiers. Oregon will use the new system to better understand key issues such as ELD workforce training, turnover, and professional development trajectories.

Rhode Island (2012): Develop an Early Care and Education Data System (ECEDS) to enable uniform data collection, reduce duplicative data collection efforts for participating programs, answer key policy questions, and follow children from birth through high school to provide targeted funding and services. Includes plans to establish a cross-departmental, public-private planning and governing body.

Wisconsin (2013): Leverage ELC funds to forward existing efforts to create a comprehensive Early Childhood Integrated Data System (ECIDS) that aligns with and is interoperable with K-12 SLDS, allowing data to be exchanged between the two systems. The state will develop a data system that will support data exchanges and help answer research questions. Key policy questions that the data system will answer include: are young children on track to succeed when they enter school and beyond, and what are the educational and economic returns on early childhood investments.

[5] A data system that contains and links student data from early childhood through the workforce.

States Take Significant First Steps to Make Their Data Plans a Reality – Creating and Stacking the Building Blocks for their ELD Data Systems

Building an integrated data system does not happen overnight. Thoughtful preparation is required to engage the right partners, build meaningful data sharing agreements, develop a governance body to ensure the data are protected and used appropriately, and consider the exact purpose of the data itself. During our interviews, we discussed steps taken by states to integrate their ELD data and found that the ELC funds have supported the development of initial building blocks. Because each state had its own timeline, goals, and existing structure impacting how and when it took these steps, the building blocks are ordered to guide readers through the ideas behind coordinating ELD data systems, rather than chronologically or by order of importance. The following discussion describes processes such as determining the responsibilities and authority of agencies, addressing data gaps, and creating sustainable data linkages to move states closer to their goals.

Building Block 1: Assessing the early learning landscape and creating a vision for ELD data use

States have used the early stages of the ELC to think through their vision and goals for their ELD data. Generally, states want to use their ELD data to:

- Examine the quality of services available to families.
- Assess the unmet need for services for the children most at need in the state.
- Identify statewide use patterns to efficiently allocate resources.
- Understand how young children are learning and growing, by examining outcomes data.

States are taking the time to figure out exactly what data they need to achieve those goals. Several states are initiating their data systems development by identifying the key policy questions and goals for the data. For example, Minnesota began its data system design work by conducting a needs assessment, beginning with the policy questions that leaders wanted the system itself to ultimately answer and assessing what data and data connections were needed to answer those questions. An example from Minnesota is to use the new data system to evaluate third grade reading and math outcomes for children who participated in the child care assistance program. The new data system will allow the state to match the child care data to education data, giving the state a better understanding of the relationship of early childhood experiences to educational outcomes. In Maryland, data dashboards and GIS mapping will be used to communicate information to multiple stakeholders about number of children served in programs, school readiness indicators, the health and safety of programs (licensing), and measures of program quality. Its data system will allow it to track early childhood investments as well as outcomes.

Stakeholder engagement. In addition to thinking through how best to use the data, states are using the early stages of the ELC to decide how best to communicate the value of the integrated data to end users. States have identified key stakeholders and developed a process to engage them in discussing their data needs. Once the needs of users are understood, states are using that information to inform their planning. For example, **North Carolina** conducts stakeholder engagement with potential end users of the data system to provide feedback on the system to make sure it meets their needs. Stakeholders consist of agency staff, researchers, advocates, and ELD professionals. It is also building a web portal system with a public interface for communicating general information and running standard reports, with an additional function to create customized reports. In addition to the public system, **North Carolina** is creating private pages for research and agency members who have the approval of the data governance body to view data. Similarly, Minnesota conducted a stakeholder analysis to help identify potential uses of the data system. Through focus groups and surveys, state leaders asked ELD staff to review mock-ups of charts and graphs that may be generated by the new data system. With these communication efforts, states hope to support data use once their data systems are in place. Such efforts not only help guide the planning process, they also can secure buy-in from the end users of the data and will hopefully make those end users more likely to see value in the data, and access and use the data to make decisions. If these users continue to demand the data even after funds run out, they will ultimately support the sustainability of the data system.

Building Block 2: Developing interagency governance structures

Most interviewed states are using a portion of their ELC funds to develop ELD data governance bodies. These groups are essential for establishing a systematic process by which the responsibility for data ownership, sharing, and use are achieved. In addition to addressing the procedures for gathering and using data, these governance bodies are often tasked with developing policies to keep the data secure and confidential.

Timing of developing a data governance structure. Representatives from one state encouraged others to begin the process of developing an ELD data governance structure as early as possible. They delayed the development of their structure until after some of the initial data use/infrastructure discussions had already taken place. They believe, however, that this delay caused some challenges in creating data sharing agreements and aligning the integration work among the various contributing agencies. This state encourages others to have a data governance structure in place before taking steps to integrate data so initial issues can be addressed by an authorized governance body.

Selecting members. We saw several trends in data governance structure development across the interviewed ELC states. States are including members from each of the departments/agencies/programs represented in their integrated data systems. Although the specific groups represented in the data systems vary from state to state, generally, states are including members from their Departments of Education; Departments of Health and Human Services; Departments of Children and Families; Head Start programs; and/or Early Intervention. For a list of specific agencies discussed by the interviewees, see Table 1.

Table 1: Data Governance Agency Representatives by State

State	Representatives in data governance body
Illinois	• Department of Human Services. • State Board of Education. • Board of Higher Education. • Community College Board • Department of Commerce and Economic Opportunity. • Department of Employment Security. • Student Assistance Commission. • Office of the Governor.
Maryland	• Department of Education. • Department of Labor, Licensing, & Regulation. • Department of Higher Education and local universities.
Minnesota	• Department of Education. • Department of Human Services. • Department of Health. • Representatives from home visiting programs, Head Start, child care resource & referral, and professional associations.[6]
North Carolina	• Department of Health and Human Services Division of Child Development and Early Education. • Department of Health and Human Services Division of Public Health. • Department of Health and Human Services, Division of Social Services. • Department of Public Instruction Office of Early Learning. • North Carolina Partnership for Children. • North Carolina Head Start/Early Head Start.
Oregon	• Data governance will be determined by the Oregon Education Investment Board, created by the governor.
Rhode Island	• Currently using SLDS governance body. Plan to include key leaders from the Department of Education, Department of Health, and state QRIS.
Wisconsin	• Department of Public Instruction. • Department of Health Services. • Department of Children and Families.

[6] Specific entities include: MN Coalition for Targeted Home Visiting, Local Public Health Association of MN, MN Head Start Association, MN Association of School Administrators, MN Association of County Social Services Administrators, Governor's Early Learning Council, Office of Higher Education, MNIT (the Minnesota Central Information Technology Department), and MN Association of School Business Officers.

Determining roles and responsibilities. States are also making progress in developing the roles and responsibilities for members of the governance body. For example, **Wisconsin** pulled all three major contributing agencies together (the Department of Public Instruction, the Department of Human Services, and the Department of Children and Families) to develop a data governance charter. The charter includes a general model for data governance and an operationalization of that model. Specifically, the process is outlined for getting approval for a cross-agency research agenda, a cross-agency technical solution, and data sharing agreements. Participating agencies meet biweekly to support the data coordination efforts and develop cross-agency strategies to answer key policy questions.

Several states developed tiered governance systems, with an executive committee in the lead and a program or IT supporting the implementation of the executive committee's plans. In **North Carolina**, the governance council has a triangular structure. At the top is an executive committee, consisting of the executive leadership from each participating agency. This committee sets policy and has the authority to make major decisions. Reporting to the executive committee is the program management committee, including managers from all of the participating programs. Including both executive and programmatic staff helps secure buy-in from both groups. Finally, information technology staff members are also included on the governance council to ensure that the ideas and goals of the council are technically feasible and to make additional recommendations on the technical implementation of the data system plans.

Early Childhood Data Collaborative
10 Fundamentals of Coordinated State ELD Data Systems

Transforming data systems so that they are improvement-driven, coordinated, and longitudinal lays the groundwork for coordinated state ELD data systems. The 10 ELD Fundamentals provide the foundation for answering the critical questions that policymakers seek to answer.

1. Unique statewide child identifier.
2. Child-level demographic and program participation information.
3. Child-level data on development.
4. Ability to link child-level data with K-12 and other key data systems.
5. Unique program site identifier with the ability to link with children and the ELD workforce.
6. Program-site data on structure, quality, and work environment.
7. Unique ELD workforce identifier with ability to link with program sites and children.
8. Individual ELD workforce demographics, including education and professional development information.
9. State governance body to manage data collection and use.
10. Transparent privacy protection and security practices and policies.

Leveraging other governance structures. Some states have partnered with or merged their ELD data governance structures into their K-12 state longitudinal data systems' data governance structures. For example, in **Maryland**, the early childhood data warehouse is housed in the Maryland K-12 longitudinal system and uses its data governance body. Illinois is following a similar model and including key members of the ELD community on the data governance board, such as child care subsidy, early intervention, home visiting, preschool, and the governor's Office of Early Childhood.

Building Block 3: Filling the ELD data gaps

States are using ELC funding to determine what data are needed to achieve their early learning service goals. They are asking key policy questions and examining the data elements and data sources necessary to answer them. For example, officials in **Oregon** are receiving technical assistance to help identify existing data gaps and ensure that these priority data gaps are addressed through ELC funds.

The following are examples of data and knowledge gaps identified by states:

Child-level data gaps. An unduplicated count of how many children are receiving multiple services is a major knowledge gap described by both **Illinois** and **North Carolina**. Without an unduplicated count of children receiving services from multiple agencies, policymakers and other key decision makers lack the knowledge to make precise decisions about how and where to provide additional services or funding. With their integrated data systems, these states anticipate being able to have a more complete picture of how many children are accessing one or more services, what those services are, and whether there are common areas of high need. With this information, policymakers and program decision makers can streamline services and funding to meet the needs of children and their families as efficiently as possible.

> [States] are asking key policy questions and examining the data elements and data sources necessary to answer them.

A second example of using the ELC to address child-level data gaps is from Illinois, where state officials are incorporating Head Start data into the ELD data systems. Such incorporation requires different strategies for a variety of reasons, including the difficulties associated with linking the different software used by each local Head Start program, and analyzing information containing different data definitions and progress indicators. **Illinois** is working to link Head Start data by creating a common data set with the help of partners at the University of Illinois and the Illinois Head Start Association. Ultimately, this common data set will help facilitate the incorporation of Head Start data into the state longitudinal data system.

Program-level data gaps. Program-level data on program structure (e.g., ages of children served and length/duration of the program), quality characteristics (e.g., national accreditation, child-adult classroom ratios), and work environment characteristics (e.g., staff professional development opportunities, staff turnover), allow states to monitor the availability and quality of ELD program sites and services, and to track this information over time. Generally, these data can help policymakers better understand the impact of public investments in various quality-improvement initiatives. They also allow states to observe the relationships among various site and staff characteristics and child outcomes. Filling data gaps related to preschool programs and linking those data to QRIS systems is a major priority for **Wisconsin** with its ELC funds. Currently, the state lacks program-level data about existing child care centers that operate preschool programs.

Workforce-level data gaps. Gathering data on ELD workforce characteristics allows states to understand who is caring for their youngest children and which children have access to teachers and caregivers with varying levels of education, experience, and licensure. Tracking this information over time also helps policymakers make more strategic decisions about allocating professional development resources and better understand the impact of investments in education and training programs. **Illinois** will be using ELC funds to address existing data gaps in its state professional development registry system, so that state leaders have an idea of where ELD professionals are working and whether they are still actively participating as ELD educators. Demographic, education, and professional development data are important to improving the understanding of how ELD workforce characteristics affect services and child outcomes.

Unique Challenges in Linking Head Start Data

The ECDC's recent report, *Linking Head Start Data to State Early Care and Education Coordinated Data Systems*, describes some of the challenges in linking federally funded Head Start data to state ELD data systems. It also examines some of the steps states are beginning to take to support linking, the value of coordinating these data, and recommendations for state and federal policymakers looking to support these efforts.

Building Block 4: Building and strengthening linkages between ELD and data from other systems

This building block requires the technical capacity to link data between the various systems that may house early learning data collected by agencies, departments, or programs.

Assigning unique identifiers. One key step in linking data across systems is assigning a unique statewide child identifier (UID). A UID is a single, non-duplicated number that is assigned to and remains with a child throughout participation in ELD programs and services and across key databases. It allows the state to track progress of each child over time across data system, throughout the early childhood years, and across programs and sites within the state, to improve the coordination and provision of services. A UID alleviates redundant data entry on children participating in multiple ELD programs by allowing information about a single child to be linked across various data systems. Three states, **Maryland, North Carolina**, and **Rhode Island,** are using ELC funds to develop unique child identifiers. North Carolina is also leveraging existing resources for its UID assignment by using the same software and platform as the public school K-12 UID assignment.

Leveraging existing K-12 data system. Several states—**Illinois, Minnesota, Oregon, and Wisconsin**—are beginning to link and integrate their ELD data by leveraging their existing K-12 state longitudinal system work/system. Rather than reinventing the wheel, these states are using the existing K-12 infrastructure and governance to streamline both data governance bodies and technological platforms. For example, in Illinois, the ELD data system and governance will be completely integrated into the state's longitudinal data system. The governing board will use and build upon the ideas and foundation of the ELD team. **Wisconsin** is building off of the statutorily required P-20W[7] data system, using ELC money to incorporate ELD data. The P-20W system is required by state statute, and leaders believe that the strength of the statutory backing will support the sustainability and longevity of ELD data efforts.

Developing data sharing agreements. Several states, including **Rhode Island and North Carolina**, described progress in developing and finalizing data sharing agreements. Such agreements describe which agencies and

parties within the agencies will have access to the data, what data they will have access to, and what the data will be used for. These data sharing agreements can be formalized in memorandums of understanding/agreement between the agencies that will be sharing or contributing data to the coordinated data system. One state found that the development of data sharing agreements was an important step in contributing to data security because permissible data use and users were clearly identified.

For many states, the process of developing these agreements took significant staff time and ongoing communications with multiple agency contacts. In **Rhode Island,** leaders first tried to develop one standardized data sharing agreement that would cover all of the agencies contributing data. They ultimately developed five separate and distinct agreements for each agency—so that the individual concerns and data points could be described and addressed.

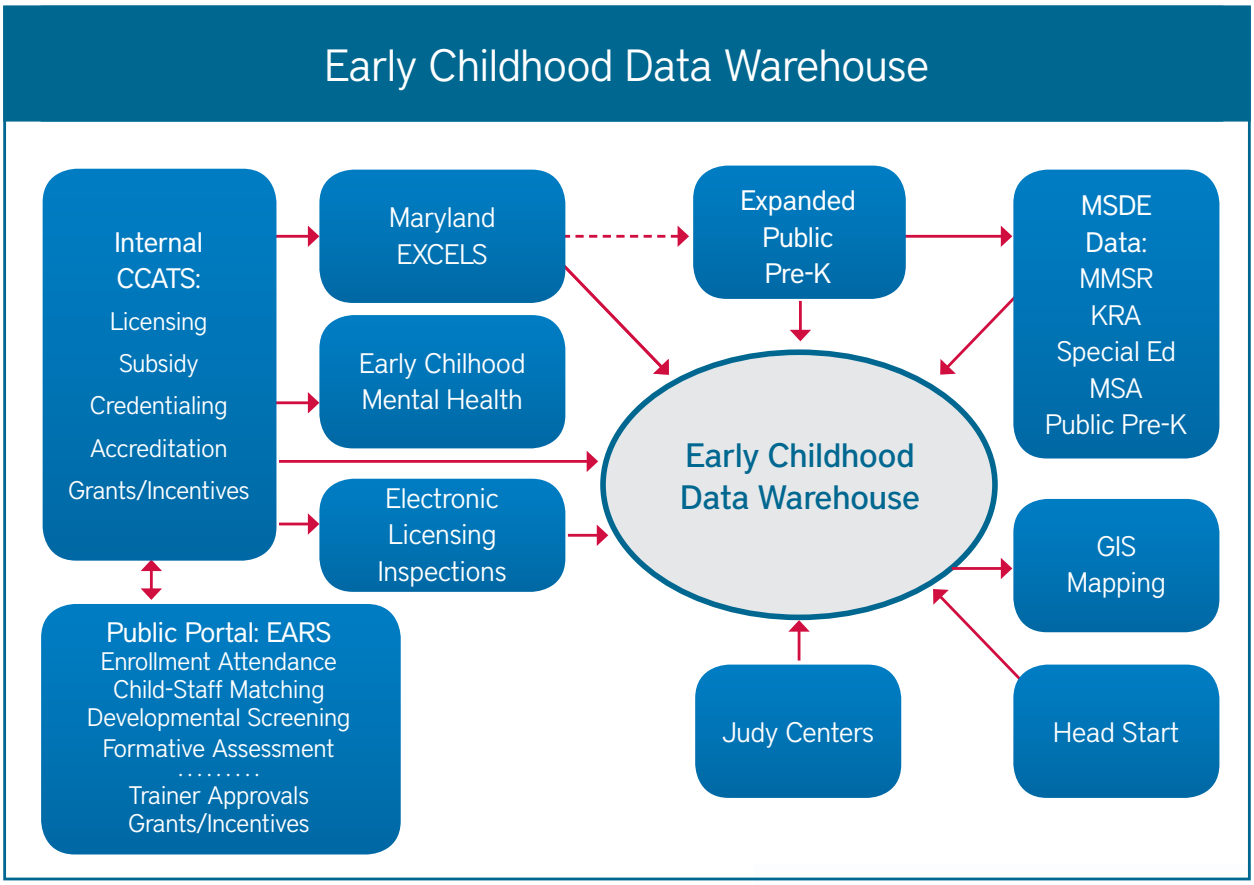
In **North Carolina**, a single data sharing agreement and memorandum of agreement was created to cover all agencies that contribute data. Leaders of the data initiative met with agency leadership to answer questions about data sharing and about the use of the proposed data system. The data system staff also worked very closely with agency personnel who had expertise in developing contracts and agreements, to ensure the inclusion of necessary language. State leaders recommend building strong communications between those developing the data system and the division

[7] A data system that contains and links student data from early childhood through the workforce.

directors, to address any concerns and answer questions. The state also kept division directors and program managers informed by having business representatives, funded by the grant, have frequent, direct communication with the agencies/programs to keep them up-to-date and to promptly field any concerns.

Creating federated data systems or data warehouse structures. The data system structures states are planning to implement vary. Two states (**North Carolina** and **Illinois**) described building federated data systems, in which data will remain in existing agency databases, but a user will be able to extract and analyze data across program and agency silos. **North Carolina** explained that a key benefit to such a system is that the agencies maintain control of their data, and data are only pulled when needed. Other states, such as **Maryland**, have opted to develop a data warehouse model, which is a central hub that houses all the ELD data (see Figure 1). See the ECDC's 2012 paper on ELC applications for a brief overview of these different structures.[8]

Figure 1: Maryland's Early Childhood Data Warehouse Structure



[8] Early Childhood Data Collaborative, "Developing Coordinated Early Childhood Longitudinal Data Systems: Trends and Opportunities in Race to the Top Early Learning Challenge Applications," September 2012, accessed May 22, 2015, http://www.ecedata.org/files/ECDC-RTTT-Sept27%20(1).pdf.

Building Block 5: Planning for sustainability of ELD data efforts

The ELC provided grantees with an infusion of funds for the data system-building work. Several of the interviewed states shared their anticipated use of ELC funds for their data system efforts. These states anticipated dedicating from six percent to seventeen percent of ELC funds specifically for ELD data integration; designated funds may shift as the scope of work changes. Some states are also leveraging funds from other sources, such as Statewide Longitudinal Data System (SLDS) grants or programmatic budgets, for their work. However, the funds from ELC are limited to the duration of the grant, while the work of collecting, analyzing, and using data on ELD programs and children will hopefully continue for these states long after the grant funds are gone.

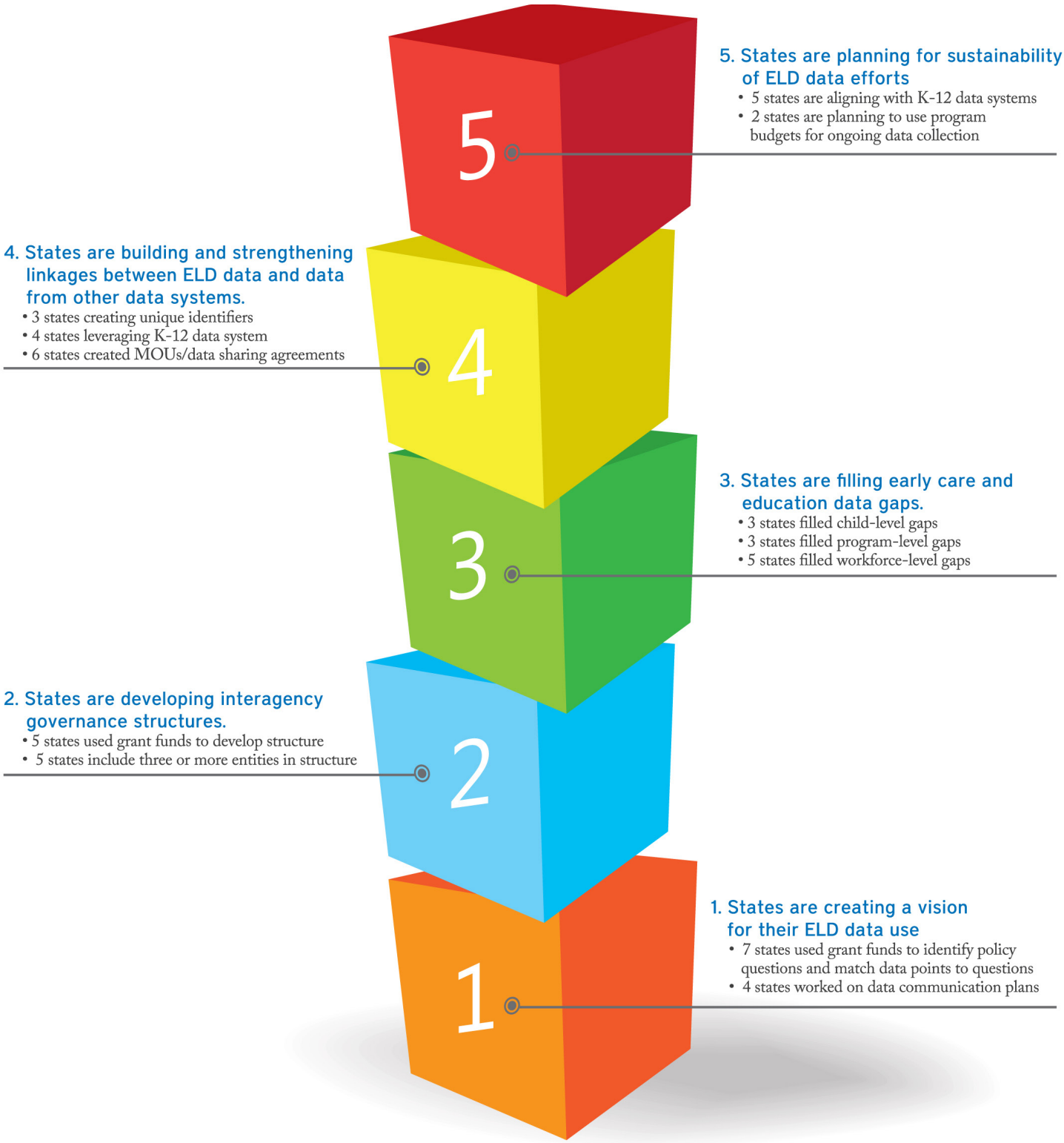
Leveraging existing program funds to continue work. Several states framed capacity moving forward as a part of the operating budget of the programs. They planned to use ELC funds for building their systems, and developed systems that would be supported by program budgets. For example, several states are planning to incorporate their ELD data into their states' K-12 state longitudinal data system. With this connection, states are planning for the ongoing and existing K-12 infrastructure to continue the work that began through the grant. This is part of the rationale of merging or aligning ELD data governance systems with SLDS systems. Since the SLDS in these states have the financial and even legislative support to continue, some states believe that tying ELD data into those efforts will lead to long-term stability.

Similarly, states noted that ELD programs are already collecting data and that those data collection efforts are a part of the program budget, not funded by this additional grant. As such, the implementation of a new ELD data warehouse or ELD integrated data system will merely shift the way that data is collected—not add a new or additional burden on the programs themselves. States indicated that they are developing the new data system but will use current program data collection funds for ongoing work, to ensure the work can go on after the grant funds have been spent. For example, states reported that programs already have existing staff to collect and report data. The ELC provides a new place for the data to be housed and/or new methods for collection, but these will replace the old ones rather than creating a new burden for programs.

Although several states were excited about this coordination of existing resources, one state did note that this could lead to challenges. Close alignment with another data system can slow down progress, particularly when one data system is stymied unexpectedly. Additionally, should the SLDS data system shift its own goals or plan, the ELD effort will be required to either readjust or realign its own work.

Rhode Island, in assessing the associated costs of sustaining its data integration effort, expects to sustain the ELD data efforts in a way that is holistic and focused on the ELD data system itself, rather than as a project of one of the contributing agencies. The state is working with an external consultant to help it think through the process. Rhode Island wants to consider the sustainability of the ELD data system as its own unique effort, so that each agency will continue to have a significant role moving forward.

Figure 2. Early Learning Challenge Data System Building Blocks in Seven States



Although States Have Made Strides, They Have Faced Obstacles Along the Way

This chapter initially provided snapshots of each state's ELD data system and integration goals for the ELC. Below are snapshots of some of the challenges and strategies for success that states have made in the first year or two of their data work. Although challenges may have slowed progress or caused states to reevaluate their initial plans, states evoked strategies that allowed them to continue moving forward in their ELD data work. These examples provide stakeholders, such as state and federal policymakers and decision makers, with ideas of how to overcome complications that might occur. For a more detailed look at what each state has planned and accomplished, see Appendix A.

Obstacles. Although states have made notable progress in their building or enhancing the coordination of their ELD data, they have faced obstacles during the grant period. Even though states were generally able to overcome these obstacles, other states that are working toward expanding their early learning data collection and data systems should be aware that these challenges can slow schedules. The three most common challenges are described below.

Staffing. The most commonly reported challenge was staffing the data system effort. States found several aspects of staffing to be difficult. First, identifying and hiring sufficient IT staff with the necessary qualifications to build the data system proved to be difficult. States also encountered challenges hiring strong project leads and retaining staff. Some found that staffing changes can lead to slower project development as new staff are brought up to speed and as work halts while non-technical staff await the arrival of needed technical staff. Another staffing obstacle was the high turnover rates in the agency generally, while others experienced delays associated with changes at the leadership level early in the grant. Although these staffing challenges did not stop work, they caused delays as staff worked to create the necessary infrastructure to implement the plan.

Program and data coordination. Some states identified a significant obstacle brought about by major changes to their ELD agency structure, shifting ELD programs from multiple agencies into one new department. The shift required the leadership to rethink its ELC goals and strategies, including those for its ELD data system, slowing down progress. Another state that did not have one central department or agency handling ELD programs struggled to connect with the individual agencies that house ELD programs and move forward with ELD data coordination because the individual agencies had competing priorities. By attaching the data coordination and other ELD progress to a federal grant, the state was able to make traction with otherwise disjoined efforts.

Longer timelines. Several interviewees discussed challenges in developing the memorandums of understanding (MOUs) or data sharing agreements necessary for sharing and integrating data. Negotiating the agreements proved to be a challenge for numerous reasons: it could be time consuming; individual programs or agencies were hesitant to share data or were confused about the ultimate purpose of data sharing and the way the data would be used; programs or agencies had service priorities and were unable to focus the time and energy needed to develop the agreements within the tight deadlines of the grant. States shared several communications strategies to overcome this barrier, as detailed below.

Strategies for success. Although these challenges have slowed progress at times, states have still been able to accomplish the concrete steps in their ELD data integration work, as described above. We heard several strategies for success that helped states overcome challenges and move forward with their work.

Technical assistance and support. Five of the seven states told us that outside technical assistance has been helpful to them as they deal with challenges developing or implementing their integrated data plans. Technical assistance has helped states identify policy questions and data gaps, understand staffing needs, and address some of the technical issues that have arisen.

Effective communication, both within the project and across agencies. In addition to outside TA support, several states attribute their communication strategies as a driver for overcoming challenges. In **Minnesota,** the lead for the data work credited documenting all decisions and circulating written notes about meetings with ensuring steady collaboration. She also reported that regular meetings between policy and technical lead staff were essential to building consensus on work and deadlines. **Rhode Island** also discussed the power of good communication, and the benefits of being a small community where staff can meet face-to-face and remember that they share a common goal and passion. **North Carolina's** model, which devotes several hours a week to staff to collaborate with project areas and update agency leadership and program managers, has also relied on strong communication to move work along. This has helped the data team clear up any misunderstandings about the work and to be clear about what the data system will and will not be able to do.

Clear, concrete, achievable goals. **Oregon** credits designating clear, concrete, and achievable goals as a major strategy for success. Such goals help participating agencies and programs understand their short- and long-term implementation strategies. Setting goals that are achievable also helped states stay focused without becoming overwhelmed or paralyzed by goals that are not possible in the foreseeable future.

State Recommendations for Additional Grant Opportunities

All of the interviewed states acknowledged that their integrated data work would not have been able to move as quickly, or even at all, without the ELC. Having a dedicated infusion of funds allowed them the time and staff to think through goals and begin to develop the infrastructure that would move them towards their goals. States also shared their ideas and recommendations about how to make any additional federal resources more useful and supportive of ELD data integration efforts.

Coordinate federal data reporting and funding. Several states suggested that all future federal grants and funding streams acknowledge and support the integrated data work. This would help communicate the value of this work to those who may be resistant to it, and also ensure that funding is set aside to support it. Some strategies include:

- Incorporate requirements for data use and sharing into long-term funding streams such as Head Start, the Child Care Development Fund, and home visiting. This can help data coordination efforts continue as part of each program's budget.
- Support the coordination of efforts between an integrated ELD data effort and a state's K-12 SLDS, through streamlined funding and/or targeted TA for the integration of ELD data with SLDS.
- Provide funding opportunities for local programs to expand their ELD data use because much data collection in ELD programs occurs on a local level and localities currently lack the knowledge and infrastructure to use the data in a meaningful way.
- Provide additional financial support or funding streams for maintaining the integrated ELD data systems.

Continue technical assistance to states. Many of the interviewed states found the technical assistance (TA) available through the grant to be of tremendous value. Further grant opportunities should offer robust TA to guide states and/or grantees through the process of gathering, sharing, and using ELD data. States described a few additional areas where TA might help ELD integrated data efforts in the future. These included:

- Provide TA and additional guidance on how to work with Head Start and Early Head Start and guidance on incorporating Head Start and Early Head Start data.
- Provide TA for localities to understand what data can be used for, so they can be more robust users of data.

Adjust grant procedures. States also had some practical ideas about how the grant applications and timelines could be developed to better address the challenges states face when they are first awarded such a large grant. One state noted the initial stages of the ELC work were like building an airplane while it was already flying at 3,000 feet. Other states described similar challenges finding staff, understanding the full scope of the work, and interpreting their own state's grant applications, which had often been written by other individuals. States suggested the following strategies should another large grant be available:

- Provide a roadmap and period of performance at the beginning of the grant period to give states adequate time to hire additional staff and plan for the implementation.
- Allow for a less-specific work plan/scope of work in the application itself since often the writers are not the people who implement the work for the grant. Alternatively, help states understand when it is appropriate or feasible to adjust the proposed scope of work.

Embed self-evaluation activities. As a final recommendation for additional funding or a piece of another grant, one state is eager to evaluate the process of developing its coordinated ELD data system. It would like to have the money and capacity to review how the data system was ultimately built, how well the data system is working, and how exactly it is benefiting children in the state. Without an additional grant or designated funds within the grant to do this type of self-evaluation, the state may not be able to review its own work and learn from its challenges and successes.

Conclusion

The Early Learning Challenge grant provided states with an opportunity to expand their capacity to use integrated data for targeting and improving the quality of early learning and development services. When states identify, at the forefront of their planning, the questions they want ELD data to answer and how they will use that information, they build a solid foundation as they begin the more practical work of data integration, such as identifying required data sources, the agreements that need to be in place, and how they will link children to programs, teachers, and their elementary school classrooms. Using integrated data will pave the way for a more clear and comprehensive picture of children in states, what services are available to them, and where there are service gaps.

States are indeed making progress in this work in a relatively short time: some have signed data sharing agreements, developed policy questions, engaged stakeholders, created unique identifiers, and linked siloed data systems. But there is still much to be done, both in the ELC states and in others. We are thankful to these states that have made such progress for sharing their stories, their goals, their challenges, and their success. This information can help other states as they work towards developing a comprehensive picture of young children and available services through data. It is our hope that these states will continue to share not only their work, but how they have been able to use their data to change the lives of their most vulnerable children and families.

Appendix A: State Profiles

Illinois (Grant phase 2, 2013)

Overview: Build an early care and education data system within the Illinois Longitudinal Data System (ILDS), leveraging the existing ILDS legal/governance structure, administrative personnel, and end-user supports. The new data system will include three levels of data: child/family; workforce; and program (including TQRIS ratings). Illinois plans to use its data system to answer planning questions, such as where additional child care slots are needed and what programs should be expanded. When an unduplicated count of children is available, it will link with GIS mapping system to identify areas with existing services and areas of need.

Progress:

- Increased number of staff captured in state's workforce registry: from 16,000 to over 65,000.
- Began process to hire a Central Demographic Database administrator to implement overall plan and data system architecture.
- Created data sharing agreements with contributing agencies.
- Partnered with the University of Illinois and the Illinois Head Start Association to develop a common dataset across Head Start programs, to facilitate integrating Head Start data into the ILDS.

Early Learning Challenge funds designated for linking and integrating ELD data: Approximately $7,000,000, i.e. 13% of total ELC funds.

Maryland (Grant phase 1, 2012)

Overview: Expand the Maryland longitudinal data system to include an early childhood data warehouse which tracks child, program and workforce level data (see Figure X). Data dashboards and GIS mapping will be used to communicate information to multiple stakeholders about number of children served in programs, school readiness indicators, the health and safety of programs (licensing), and measures of program quality. Maryland's data system will allow it to track early childhood investments as well as outcomes.

Progress:

- Early childhood data warehouse includes public pre-K, Head Start, special education, state QRIS data, early childhood mental health, and child care licensing, credentialing, subsidy and accreditation data.
- In final stages of the development of a child care enrollment and attendance data system, which will track enrollment and attendance of children in private child care centers and match children to staff.

Early Learning Challenge funds designated for linking and integrating ELD data: About 6-7% of total grant amount.

Minnesota (Grant phase 1, 2012)

Overview: Create a linkable early childhood longitudinal data system that houses select data elements from multiple state agencies that support early childhood initiatives. Develop a new Minnesota early learning information portal, to provide user-friendly, web-based dashboards and reports for educators, administrators, and parents. Ultimately, data will be used to build a more global understanding of young children and address achievement gaps in the state.

Progress:

- Gathered feedback from stakeholders about data communication efforts through focus groups and surveys. Stakeholders included parents, ELD professionals, and pediatricians.
- Developed a diagram of approved data elements from approved data systems and visually represented their relationships.
- Identified key policy research questions to be answered by the ECLDS which will be used to identify data gaps and needs.
- Developed data governance body and began meeting in April 2013. It includes state agencies and non-state parties and encompasses home visiting and Head Start.

Early Learning Challenge funds designated for linking and integrating ELD data: Leveraging other funding sources, but anticipated using $7,720,642 of ELC funds towards this work, i.e. 17% of total ELC funds.

North Carolina (Grant phase 1, 2012)

Overview: Build an Early Childhood Integrated Data System (NC ECIDS) that will be able to interact with the state's P20W longitudinal data system. NC ECIDS will have a public-facing portal with standard reports and information, and additional private pages for approved researchers or agency staff. The state will also create an improved state early childhood workforce data system that will provide an online portal for providers and interface with NC ECIDS.

Progress:

- Identified key policy questions that serve as a framework to the NC ECIDS.
- Built relationships with contributing agencies and formalized data sharing arrangements in a Memorandum of Agreement.
- Determined which data elements and programs will be included in NC ECIDS.
- Established an ELD data system governance council that meets bimonthly.
- Developed a sustainability plan for funding and staffing after the grant ends.

Early Learning Challenge funds designated for linking and integrating ELD data: $8,894,351, i.e. 13% of total ELC funds. Note: these funds are designated to build three data systems in NC, including NC ECIDS.

Oregon (Grant phase 2, 2013)

Overview: Create a statewide early learning data system that aligns with state's K-12 longitudinal data system. The new data system will include data for children in Head Start, Head Start Pre-K, and Early Intervention-Early Childhood Special Education. Users will be able to connect children in publically funded early learning programs and children receiving child care subsidies through unique identifiers. Oregon will use the data system to better understand key issues such as ELD workforce training, turnover, and professional development trajectories.

Progress:

- Developed data linkages between the state professional registry online database and the state TQRIS. Has also developed linkages between TQRIS and child care subsidy data.
- Produced an early learning data dictionary defining key terms.
- Created an early learning data system steering committee to provide recommendations to the Early Learning Council.

Note: Estimated funding for data integration work was not provided.

Rhode Island (Grant phase 1, 2012)

Overview: Deve lop an Early Care and Education Data System (ECEDS) to enable uniform data collection, reduce duplicative data collection efforts for participating programs, answer key policy questions, and follow children from birth through high school to provide targeted funding and services. Includes plans to establish a cross-departmental, public-private planning and governing body.

Progress:

- Created unique child, provider, and education/ workforce registry IDs which cross-tab to IDs in other data systems to link data.
- Developed a common, web-based universal program application that will automatically populate known fields for each participating program from child care licensing, QRIS, and public preschool. Workforce login will be available online at https://exceed.ri.gov/Default.aspx.
- Completed five interagency data sharing agreements between the Department of Education and each agency contributing ELD data to the data system.

Early Learning Challenge funds designated for linking and integrating ELD data: $5.5 million, i.e. 11% of total ELC funds.

Wisconsin (Grant phase 2, 2013)

Overview: Leverage ELC funds to forward existing efforts to create a comprehensive Early Childhood Integrated Data System (ECIDS) that aligns with and is interoperable with K-12 SLDS, allowing data to be exchanged between the two data systems. Develop a data system that will support data exchanges as well as ad hoc research questions. Key policy questions that the data system will answer include: are young children on track to succeed when they enter school and beyond, and what are the educational and economic returns on early childhood investments.

Progress:

- Established ECIDS governance structure and finalized a data governance charter. Staff from each agency represented meets bi-monthly to develop the cross-agency research agenda and address cross-agency technical issues.
- Initiated an investigation into the key policy and research questions the state wants the data system to

answer, and into identifying existing data gaps that need to be addressed before the questions can be answered.

- Supported the Department of Children and Families and the Department of Health Services in making improvements to their internal data systems, including connecting previously siloed data systems.
- Revised the scope of work and re-started many work groups that experience a large amount of staff turnover.

Note: Estimated funding for data integration work was not provided.

Appendix B: Federal Legislation and Grants Providing Guidance or Specific Funding for Integrated ELD Data Systems

In addition to the Early Learning Challenge, a variety of federal legislation and grants provide guidance about or specific funding for ELD data collection and data systems. These include:

Individuals with Disabilities Education Improvement Act (2004): Guides requirements for data collection and reporting for Individuals with Disabilities Education Act (IDEA)-funded programs which includes services for infants, toddlers and preschoolers. Calls for development of a "statewide system" that includes "a system for compiling data requested by the Secretary."

Statewide Longitudinal Data Systems (SLDS) Grant Program (2005): Assists states in developing and implementing statewide, longitudinal data systems[9] in education. One priority area for states is to develop and link early childhood data with the state's K-12 data system. Fiscal year 2015 SLDS grants include early learning as a funding priority.

Improving Head Start for School Readiness Act (2007): Calls for state early childhood advisory councils to "develop recommendations regarding the establishment of a unified data collection system for public early childhood education and development programs and services throughout the state."

America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Act (2007): Promotes the alignment of secondary school graduation with the demands of 21st century postsecondary endeavors and support for preschool through post-secondary educational data systems. Authorizes grants to establish or improve a statewide P–16 education data system (Subtitle D, Section 6401(e), A-E).

Early Childhood Comprehensive Systems Grant Program (2007): Funds states to develop systems to incorporate health data (including general health care and mental health) and information with early childhood data systems. The 2013 grant competition focused on supporting current early childhood initiatives, including Maternal, Infant and Early Childhood Home Visiting programs.

Higher Education Opportunity Act (2008): Requires partnerships for teacher quality to describe how the "partnership will collect, analyze, and use data on the retention of all teachers and early childhood educators in schools and early childhood education programs" (Part A, Section 202(b) (6) (K)). Also authorizes grants for states to create task forces to develop plans for a statewide ELD professional development system that "may include . . . a unified data collection and dissemination system for early childhood education training, professional development, and higher education programs" (Part I, Section 815).

Patient Protection and Affordable Care Act (2010): Requires home visiting programs to collect and report quantifiable data on "measureable improvement in benchmark areas" (Subtitle L, Section 511(d)-1).

Consolidated Appropriations Act (2012): Includes a provision that funds available to carry out section 208 of the Educational Technical Assistance Act may be used to link statewide elementary and secondary data systems with early childhood, postsecondary, and workforce data systems, or to further develop such systems. It also authorized up to $11 million that may be used to improve data coordination, quality, and use at the local, state, and national levels.

Preschool Expansion Grants (2014): Can be used to expand access to high-quality preschool programs in high-need communities. Eligible states can use the funds to enhance ELD data systems development to support a continuum of learning from birth to third grade.

[9] Data systems used to connect data points over time from early childhood to adulthood.

About the Authors

Elizabeth Jordan serves as a Senior Policy Analyst for the Early Childhood Data Collaborative. The Early Child Data Collaborative supports state policymakers' development and use of coordinated state early care and education (ECE) data systems to improve the quality of ECE programs and the workforce, increase access to high quality ECE programs, and ultimately improve children's outcomes. In that capacity, she has analyzed states' processes and policies for developing early learning data systems to inform state and federal early childhood policies. Ms. Jordan previously worked at the American Bar Association Center on Children and the Law where she conducted an in-depth, 50-state review of laws and policies impacting kinship caregivers. She also clerked for two judges with child welfare caseloads at the D.C. Superior Court.

Carlise King is Executive Director of the Early Childhood Data Collaborative (ECDC). The Early Child Data Collaborative supports state policymakers' development and use of coordinated state early care and education (ECE) data systems to improve the quality of ECE programs and the workforce, increase access to high quality ECE programs, and ultimately improve children's outcomes. ECDC partners with the Center for the Study of Child Care Employment at UC Berkeley, Child Trends, Council of Chief State School Officers, Data Quality Campaign, National Conference of State Legislatures, National Governors Association Center for Best Practices and Pew Home Visiting Campaign to inform the development of products and guide ECDC's strategic planning based on current trends in data systems development and policies. Child Trends serves as the hub for ECDC. Ms. King leads ECDC's national survey of states' early care and education data systems and directs the delivery of policy consultation and strategic communications that promote the development, implementation, and use of early childhood data systems. Ms. King has over 14 years of experience conducting state and national level research on early childhood issues and examining the impact of state and federal policies on parents' access to child care services, licensed child care supply, child care costs, and the child care workforce.

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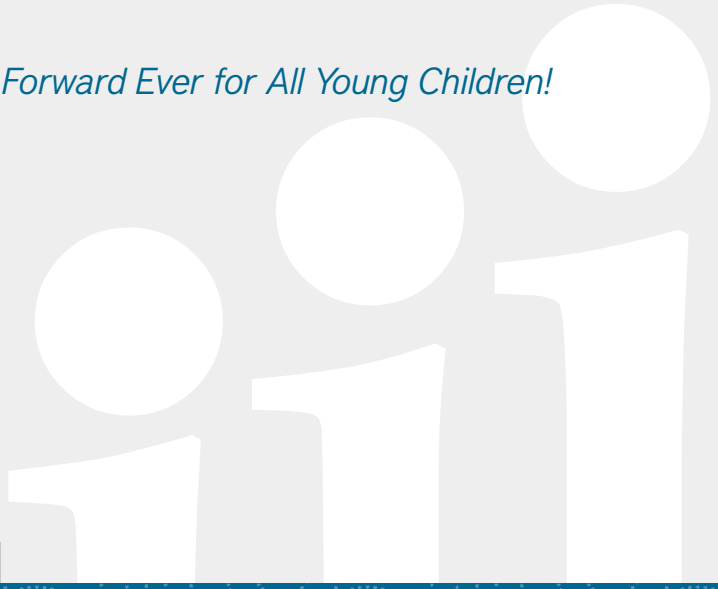

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