Early Childhood Integrated Data Systems

Jessica Whittaker, Kelsey Clayback and Isabella Rodriguez
Early Education
Data and Measurement

Introduction

In the United States, early care and education (ECE) encompasses a broad set of programs and services—including preschool, child care, special education, and home visiting—that are funded and delivered through various federal, state, and local mechanisms.[1] These programs differ in their eligibility requirements, standards, and services offered, which makes the system complex to navigate for families, and access to high-quality ECE experiences remains inequitable.[2]

Efforts to understand the needs of children and families and improve the effectiveness and equity of ECE experiences require clear and disaggregated data on children and families and information on the characteristics of the ECE programs where they are served.[3] However, the fragmentation of early childhood programs and services makes it difficult to collect, analyze, and use data to inform policy and practice.[4] Historically, ECE programs have maintained data systems separate from both each other and the K–12 system, and this siloed information cannot be easily integrated.[5] This complicates the tasks of measuring progress, identifying areas for targeted improvement, and using resources equitably and efficiently.

Over the past decade, many states and localities have begun addressing this challenge by developing early childhood integrated data systems (ECIDS)—cross-agency systems that connect data from multiple programs to provide a more comprehensive understanding of early learning experiences and outcomes.[6][7] Broadly defined, an ECIDS is a system that "collects, integrates, maintains, stores, and reports information from early childhood programs across multiple agencies within a state that serve children and families from birth to age eight."[8] This integration allows data-informed decision-making regarding important questions about the children and families served by ECE programs, workforce issues such as educator turnover, the quality of ECE programs, and, ultimately, whether these programs effectively support children's development.[9] In this chapter, we summarize key findings from research on effective ECIDS development and implementation. Importantly, research in this area is limited, given the relatively recent advancements in the development of these systems. We draw from qualitative studies, studies that have examined how ECIDS have been used as a tool to support quality improvement and child outcomes, and reviews of publicly available websites, procedural documents, and policy and practice briefs. Throughout, we highlight examples of states and localities that have used evidence-based practices to successfully build and use ECIDS to inform decisions about ECE programs and policies.

Key findings

Key finding #1: *Strong ECIDS have a clear vision and purpose.*

A clear vision and purpose are foundational to the building of effective ECIDS. The purpose and vision create a shared understanding across agencies and guide design, governance, and privacy decisions. Research, often featuring case studies from states engaging in ECIDS development, has found that states that have ECIDS with a well-defined purpose are better able to sustain collaboration, funding, and trust, and can more effectively align data integration with goals related to access, quality, and child outcomes. When tied to meaningful priorities and supported by legislation, a clear purpose transforms an ECIDS from a passive data repository into a dynamic tool for improving ECE policy and practice.

Key finding #2: *Effective ECIDS require leadership, coordination, and data governance.*

Effective ECIDS implementation depends on leadership, cross-agency coordination, and formal governance structures that align data use with shared goals to support young children and families. Case studies and quantitative research have shown that leaders who build trust and articulate a clear vision, agencies that coordinate goals and standards, and governance bodies that ensure data quality, privacy, and long-term sustainability are all critical in moving an ECIDS from its planning stages to full implementation. When these elements work together, states are better able to create trusted, effective, and lasting data systems.

Key finding #3: *Technical infrastructure and analytic and organizational capacity are needed for the effective use of data collected through ECIDS.*

Purposeful system design, modern technology, strong privacy protections, and organizational capacity are needed for policymakers, researchers, and practitioners to effectively use the data collected through ECIDS. Data quality and security are maintained through system architecture, policies, skilled information technology (IT) staff, and accurate data integration processes, including reliable matching methods and the use of unique identifiers. Robust analytic capacity and ongoing training ensure that ECIDS produce meaningful, accessible information that stakeholders can use to improve early childhood systems.

Key finding #4: *ECIDS can be effectively used to guide policy efforts to unify standards, increase access and choice, and drive improvement.*

Well-designed ECIDS can strengthen program quality and equity by enabling states to link data on ECE quality, workforce, and access with children's outcomes. Evidence from studies of states and localities that have used ECIDS, such as Louisiana, California, Virginia, and Philadelphia, shows that when data are connected and consistently measured over time, states can evaluate improvement efforts, identify inequities, and target resources more effectively. Collectively, these systems demonstrate that integrated, well-governed data infrastructures have the power to drive quality improvement and support more equitable access to early learning opportunities.

Key finding #5: *Linking ECIDS with P-20W+ SLDS can facilitate understanding of how early experiences are related to children's growth and development over time.*

Linking states' ECIDS with their prekindergarten through grade 20 to workforce state longitudinal data systems (P-20W+ SLDS), which span early learning, K–12, postsecondary education, and employment outcomes, is essential for our understanding of how early experiences relate to long-term development. Because these data systems serve distinct purposes and span different sectors, effective alignment requires a shared vision, coordinated governance, and secure technical infrastructure. Integrating these systems enables analyses that neither system can support on its own, highlighting both the value and complexity of data integration.

Evidence

Key finding #1: *Strong ECIDS have a clear vision and purpose.*

A well-defined vision and purpose are foundational elements for the design, implementation, governance, and effective use of an ECIDS. A clearly articulated vision establishes a shared understanding of why the system exists and what it aims to achieve across diverse agencies and programs that serve children from birth through age eight.[10] The purpose statement should articulate the reason the state or locality is building an ECIDS and the intended short-, medium-, and long-term outcomes.[11] Purpose statements should be made publicly available (e.g., on a state agency website, in annual reports and data agreements) to ensure clarity and transparency. Because needs evolve over time, the vision and purpose should remain flexible, allowing for adaptation as new research questions emerge and priorities of stakeholders and communities change.

A strong vision builds trust, supports cross-sector collaboration, and promotes long-term sustainability. Since ECIDS draw data from early care, public prekindergarten, health, and other systems supporting children and families, a coherent purpose helps align these sectors' goals and ensures that data integration advances shared priorities, rather than operating in isolation or competition.[12] Case studies of states at various stages of ECIDS implementation have shown that a clearly defined purpose also shapes key design decisions, including which data elements to include, how to structure governance, and how to ensure privacy protections.[13] Using survey data from teams engaging in ECIDS development in 30 states and territories, one recent study found that states with dedicated staff and well-defined ECIDS purposes are better positioned to maintain momentum and funding.[14] When the system's vision is tied directly to meaningful questions about access, quality, and child outcomes, stakeholders perceive data sharing as legitimate and valuable, encouraging broader participation.[15]

Establishing the purpose and vision also supports continuous improvement and accountability. A shared and well-conceived vision allows states to assess progress and system effectiveness while remaining responsive to emerging needs and evidence.[16] It also helps states balance short-term reporting needs (e.g., annual or descriptive reports) with long-term goals for strengthening ECE practice and policy.[17] A recent analysis of states' Preschool Development Grant applications revealed priorities for their ECIDS. Of the applicants who had developed or planned to develop an ECIDS (33), 91% discussed using their ECIDS to obtain an unduplicated count of children served in ECE programs, and 88% discussed using the ECIDS to obtain program information and support evaluation and quality improvement.[18]

Several states now use legislation as a mechanism to require ECIDS development with a clear purpose. Illinois law directs the Illinois State Board of Education to develop an ECIDS to create, "a simpler, better, and fairer system for all Illinois children and

families,"[19] and the law mandates a public portal for families to support decision-making related to ECE. Similarly, Virginia law requires all publicly funded programs for children from birth to age five to participate in the state's quality measurement and improvement system, Virginia Quality Birth to Five (VQB5), and enter data into a statewide longitudinal data system with the purpose of guiding quality improvement of services and coordinating access for families.[20] As Regenstein (2022) argues, clarity of purpose transforms an ECIDS from a passive repository of information into a dynamic tool for policy learning and coordinated action. In this way, purpose-setting is not a preliminary administrative task that should be skipped or rushed; the purpose is a guiding force for ECIDS design, implementation, and adaptation over time and should be made publicly available to ensure clarity and transparency.

Key finding #2: *Effective ECIDS require leadership, coordination, and data governance.*

Research consistently shows that the effectiveness of an ECIDS depends on leadership, coordination, and governance to align data use with shared goals to support young children and families.[21] These three components help determine whether the data systems deliver sustained, actionable insights to improve ECE policy and practice.[22] Leadership sets the vision, coordination carries it out across agencies, and governance provides the structure to sustain it.

Leadership. Leadership plays a critical role in defining the purpose, direction, and sustainability of ECIDS work. Case studies on state-level system building emphasize that strong leaders foster cross-agency collaboration, articulate a shared vision, and maintain focus on long-term goals rather than short-term reporting needs.[23] Leaders within state early learning offices or cross-agency data teams act as "boundary spanners," bridging sectors and navigating organizational and political barriers that may impede data collection and sharing.[24] Successful leaders emphasize relational leadership by building trust, communicating the system's value, and modeling collaborative decision-making related to data collection and use.[25] Mixed methods research shows that these practices increase buy-in and help sustain engagement through transitions or budget shifts.[26] Once leaders establish a shared direction, coordinated action across agencies becomes essential to move the work forward.

Coordination. ECIDS depend on effective coordination across multiple agencies that differ in their funding and accountability requirements and traditionally operate in silos. Effective coordination includes both formal mechanisms (e.g., memoranda of understanding, interagency committees, shared governance councils) and informal networks of collaboration. Cross-agency coordination is one of the strongest predictors of a state's ability to move from planning to development in ECIDS implementation.[27] States that align goals, timelines, and data standards across agencies progress more efficiently toward operational systems. Coordination must be paired with strong data governance to translate shared intent into reliable, ethical data use.

Data governance. Strong governance ensures that ECIDS operate as trusted, ethical, and sustainable tools to inform policy and practice. Governance is complex and encompasses 1) policies for data quality, privacy, and access, 2) structures for decision-making authority, and 3) plans for long-term funding and maintenance.[28] Governance frameworks that emphasize shared decision-making and transparent data-sharing agreements build trust among participating agencies.[29] For example, the Chicago Early Childhood Integrated Data System (CECIDS) governance framework includes guiding principles, responsibility agreements among participating agencies, and formal data-

sharing and use agreements.[30] In 2025, several states, including Kansas, Massachusetts, Oklahoma, and Texas, introduced legislation to establish or strengthen cross-agency data governance structures to support coordination and transparency.[31]

Guidance on best practice in establishing data governance, including the federal SLDS Early Childhood Integrated Data System Guide[32] and the STEP Forward with Data Framework,[33] also emphasize that governance should be continuous and iterative. Structures should be revisited as new partners join, needs evolve, and technology advances. States with formalized governance structures, dedicated governance staff, and clear data-use policies are significantly likelier to maintain and improve ECIDS capacity over time.[34] Together, strong leadership, coordination, and governance create the conditions for building the technical and analytic capacity required to make an ECIDS function effectively.

Key finding #3: *Technical infrastructure and analytic and organizational capacity are needed for the effective use of data collected through ECIDS.*

Once leadership, coordination, and governance structures are in place, states and localities must ensure they have the technical and analytic capacity needed to securely integrate data and translate it into meaningful information. The design of an ECIDS should be purposeful and aligned with the system's vision and purpose.[35] Modern technology is essential to safeguard privacy, increase security, support data linking, and enable sophisticated analyses and reporting.[36]

A core design decision involves selecting a system model that aligns with user needs. States typically choose among three models for integrating early childhood data: centralized, federated, and hybrid. In a centralized data system model, agencies enter data into a single shared database. In a federated model, agencies maintain their own data systems and contribute data to create matched datasets, though long-term and stored data are not available. A hybrid model combines these approaches, allowing agencies to maintain their own systems while preserving persistent linkages.[37]

Across all three models, legal agreements authorize the data sharing and specify how the data must be kept secure.[38] Because ECIDS house multiple types of data with varying levels of sensitivity, data should be classified and protected accordingly. Privacy and security policies must comply with federal and state privacy laws and be reviewed regularly to reflect legislative changes and security enhancements to technology.[39] States are taking steps to increase privacy protections; for example, in 2025, California proposed a bill banning the use of student data for commercial artificial intelligence training.[40]

Data-sharing agreements further define how information flows between agencies and who may access specific data. Governance bodies must ensure that all data use complies with applicable privacy laws and data sharing agreements.[41] States should also establish procedures for preventing, detecting, and responding to data breaches.[42]

Technical safeguards such as regular security audits, strong password protocols, encryption, secure servers, and controlled access are critical to maintaining data security.[43] Skilled IT professionals play a key role in maintaining up-to-date technology,[44] and rapidly advancing technological solutions, such as cloud computing, are making ECIDS more flexible and secure.[45] Clear, consistent, and regularly updated data privacy and security policies also help build and maintain public trust in the ECIDS.[46]

After a system architecture is selected and privacy and security measures are established, states must ensure that the ECIDS supports high-quality data integration, matching, and sharing. Because local ECE programs often enter data directly into the system, ongoing training and support are needed to ensure accuracy and completeness. [47] Accurate matching enables systems to link information across programs and agencies. [48] Linking typically relies on a unique identifier, [49] and assignment of an identifier to each child at birth or program entry is considered the most effective method.[50] When unique identifiers are not available, systems must rely on available data elements to match entities across datasets. [51] The accuracy of an ECIDS therefore depends on both the quality of the matching process and the accuracy of the underlying data elements.[52]

Finally, states must have sufficient technical and analytic capacity to analyze data and provide meaningful and useful reporting and information for stakeholders. [53] Key staffing roles include a project lead, IT lead, and analytics lead. States that invest in human capital to support the leadership, maintenance, and use of the ECIDS are over five times likelier to progress in their ECIDS development.[54] ECIDS are most effective when data are organized to support analytics and reporting[55] and when analysts can develop reports that meet stakeholder needs. However, reporting alone does not guarantee data use. In a national survey, early childhood administrators reported wanting to improve their data use, but 95% reported needing better training and tools to support them.[56] ECIDS developers must ensure that reports are clear, useful, and supported by ongoing training that helps stakeholders interpret and apply the information. [57] With the essential components of effective ECIDS now defined, the following key findings present evidence about how these systems can be applied to inform policy, unify standards, and support continuous improvement.

Key finding #4: *ECIDS can be effectively used to guide policy efforts to unify standards, increase access and choice, and drive improvement.*

When strong infrastructure and capacity are in place, ECIDS can be leveraged to answer critical policy questions, ultimately supporting improvements in program quality, access, and equity. The studies underpinning this key finding have examined how ECIDS have been used to collect, analyze, and apply information to measure return on investments, improve ECE quality, and ultimately support children's development.

Nearly all states now have a Quality Rating and Improvement System (QRIS),[58] and 11 states require all providers to participate as part of licensing requirements.[59] QRISs were designed to unify performance standards, measure and publicize quality, incentivize improvement, and strengthen children's developmental outcomes. [60] Although QRISs alone do not constitute fully integrated early childhood data systems, they provide consistent, longitudinal measures of program quality. Research indicates that QRIS implementation can help states monitor quality, understand variation across programs, and evaluate policy efforts.[61] Louisiana, for example, invested in a QRIS that included data collection in every publicly funded ECE classroom in the state, allowing it to track quality over time. Louisiana's QRIS ratings are based on the quality of teacher–child interactions, measured by the Classroom Assessment Scoring System (CLASS). [62] Between 2016 and 2019, average program-level CLASS scores increased from 4.70 to 5.13 on a 1–7 scale, with the proportion of programs rated proficient or above rising from 62% to 85%.[63] Evidence from California similarly shows that QRIS participation is associated with measurable gains in overall program ratings, particularly on structural quality indicators such as staff qualifications and learning environments.[64] These examples underscore how systemwide, comparable data are

essential for understanding the efficacy of large-scale policy initiatives and help stakeholders assess return on investment in quality improvement.[65]

However, it is not always clear whether QRIS-driven improvements in quality translate to improvements in child outcomes. Studies documenting modest associations between QRIS indicators and children's outcomes typically rely on limited samples of programs or children, are subject to substantial missing data, and often exclude key groups of children including children with disabilities and English language learners. [66] Moreover, these studies have not incorporated important elements of quality such as teacher turnover, compensation, and other workforce supports [67] that likely are associated with children's day-to-day experiences and developmental outcomes.

To determine whether QRIS participation leads to developmental gains for children, states need ECIDS that link data on quality, workforce characteristics, and access across all ECE programs with information about children's outcomes. Virginia's new integrated data system, Virginia Connects for Kids (VAConnects), represents a promising example. Developed in 2024, VAConnects brings together three previously separate statewide systems—LinkB5, the Virginia Kindergarten Readiness Program (VKRP), and the Virginia Language & Literacy Screening System (VALLSS)—to provide a uniform platform linking QRIS, workforce, school readiness, and K–8 literacy data.[68] VAConnects will enable Virginia to examine how the quality of children's early learning experiences is related to their growth and development in the preschool years and ultimately their readiness for kindergarten and later school success.

Washington, D.C., has also used ECIDS data to inform ECE policy and assess the effects of major initiatives. The Office of the State Superintendent of Education (OSSE) collects QRIS data through Capital Quality[69] and maintains publicly accessible licensing and workforce data through the Division of Early Learning Licensing Tool (DELLT), which supports family choice via MyChildCareDC. Legislation passed in 2021 established the Early Childhood Educator Pay Equity Fund, which aims to achieve pay parity between the early child care workforce and K–12 educators. [70] Recent studies show that programs participating in the Pay Equity Fund were likelier to have a rating of "Quality" or "High Quality" in Capital Quality.[71] These programs also experienced lower educator turnover, and new educators were likelier to seek employment at Pay Equity Fund programs. [72] Together, these findings illustrate how high-quality data collected through ECIDS enable states to measure the impact of policy interventions and advance quality and equity.

Some states and localities have developed even more comprehensive ECIDS by integrating early education data with information from other supports and services that young children and families can access. In Philadelphia, for example, the IDEA integrated data system (IDS) brings together data from early education, health, human services, and other sectors and stores data from 1997 to the present.[73] Using data from this system, researchers have investigated the links between early risk factors identified through the City's administrative data and children's outcomes through third grade. [74] One study derived a model of early childhood risks using the IDS's multiple data sources (e.g., child's birth weight from Pennsylvania's Department of Public Health, child maltreatment from Philadelphia's Department of Human Services) to calculate demand for ECE programs. The authors calculated supply on the basis of the number of slots in high-quality preschool centers using data from PA-QRIS ratings and administrative records. Using this information, they identified five "preschool deserts"—neighborhoods with the greatest number of children with multiple risk factors but the lowest number of high-quality slots relative to the city

average.[75] These findings were presented to city leaders, who then used funding to expand high-quality preschool access; by 2018, the originally identified neighborhoods were no longer classified as preschool deserts.[76] This example demonstrates the potential of IDSs not only to illuminate disparities but also to support targeted, equity-driven policy responses. To extend these insights beyond early childhood, states must link ECIDS with P-20W+ SLDS.

Key finding #5: *Linking ECIDS with P-20W+ SLDS can facilitate understanding of how early experiences are related to children's growth and development over time.*

To understand how children's and families' experiences in the early years are related to growth and development over time, ECIDS data should be linked with states' P-20W+ SLDS.[77] A P-20W+ SLDS integrates data across early childhood, K–12, postsecondary, and workforce programs.[78] Although ECIDS focus specifically on early childhood programs, P-20W+ SLDS encompass a broader range of sectors. Because the systems serve distinct purposes, intentional coordination is needed to ensure alignment and enable meaningful linkages. When meaningful linkages are established, families can access services more easily, providers experience fewer reporting burdens, and integrated data can inform policy decisions in meaningful ways.[79]

The SLDS Early Childhood Integrated Data System Toolkit, developed to support states' planning and development of ECIDS, incorporates content related to aligning early childhood data to P-20W+ SLDS with every component of development and design.[80] Key considerations include establishing clear and complementary purposes for each system, maintaining regular communication between project teams, coordinating data governance, designing technical infrastructure that supports data sharing, and developing strategies to ensure effective data use.[81]

The Data Quality Campaign[82] suggests that states need to work both horizontally to create robust ECIDS that integrate data across ECE programs and services and P-20W+SLDS that vertically integrate early childhood data with the K–12, postsecondary, and workforce sectors. Currently, most states are working on developing or enhancing their ECIDS, but only ten states have fully operational systems.[83] States are also working to connect early childhood data with their P-20W +SLDS.[84] Seventy-four percent of states can link individual child data for every child in a public preschool program with K–12 data.[85] However, states are less likely to report linking K–12 data to Head Start or subsidized early child care.[86]

These linkages between public preschool and K–12 data allow states to answer important questions about children who participated in specific early childhood programs. However, as noted earlier, young children and families interact with a wide range of services, and linking data across all early childhood programs with K–12 information would provide far more comprehensive insights. At present, Georgia is the only state that links K–12 public school data with data from public preschool, preschool special education, early intervention, subsidized child care, Head Start/Early Head Start, home visiting, Medicaid, and birth records.[87] Georgia was able to do this because it worked horizontally to create a robust ECIDS, Georgia's Cross Agency Child Data System (CACDS). It secured the necessary funding to develop and maintain CACDS through a state grant, a Race to the Top-Early Learning Challenge grant, and continued funding from the Kellogg Foundation. State leaders had a vision for the development and maintenance of a data system that could serve as a single repository for data from numerous state agencies and could inform policy and practices that support positive outcomes for children and families. They put strong policies in place

that outlined the system's goals, contents, and data governance and developed processes for data linking and matching within early childhood programs and with K–12 data.[88]

As illustrated in the Georgia example above, dedicated funding is a critical factor in states' ability to develop ECIDS and connect them to P-20W+ SLDS.[89] Federal investments have played an important role: 28 states have received federal funding to integrate ECE data into their SLDS or to enhance their ECIDS,[90] and in 2022, more than half of Preschool Development Grant Birth–5 grantees reported plans to link ECIDS with SLDS.[91]

Integrating ECIDS with P-20W+ SLDS makes it possible to answer policy-relevant questions that neither system can address alone, such as how early program access relates to later academic progress and how enrollment in early intervention services relates to children's long-term outcomes. Although progress is often incremental,[92] political commitment, sustained funding, and coordinated data governance can advance ECIDS and P-20W+ SLDS data linkages,[93] providing comprehensive longitudinal insights that enable better informed policymaking, evaluation, and resource allocation.

Conclusion

ECIDS provide a foundational infrastructure for understanding and improving the fragmented landscape of early childhood programs and services. As this chapter illustrates, effective ECIDS require a clearly defined purpose, strong cross-agency leadership and governance, modern technical infrastructure, and sustained analytic and organizational capacity. When these components are in place, ECIDS enable states and localities to link information across programs, identify disparities, evaluate the effects of policy initiatives, and support continuous improvement in access, quality, and outcomes for young children and their families.

Importantly, the potential of ECIDS extends beyond early childhood when systems are aligned with P-20W+ SLDS. These linkages make it possible to examine how early experiences relate to children's long-term academic and developmental trajectories. Realizing this potential requires intentional coordination, shared data governance, and investments that ensure the long-term sustainability of IDSs.

Overall, the evidence underscores that ECIDS are not simply technical tools but strategic infrastructures for advancing equity, coherence, and effectiveness in early childhood systems. Continued commitment to strong vision-setting, capacity building, and sustained funding will be essential for states and localities seeking to leverage ECIDS to strengthen early learning opportunities and improve outcomes for all children. Additionally, continued research on best practices for implementation and impacts of ECIDS on evidence-based decision-making, policy and programmatic improvements, and ultimately children's outcomes will strengthen the case for continued investments in these data systems.

Endnotes and references

[1] Lovejoy, Alexandra, Aaron Schneider, and Hannah Gibbs. 2025. States Seek to Improve Early Childhood Outcomes Through Consolidated Governance Structures. January 6. Center for American Progress.

[2] Bassok, D., M. Fitzpatrick, E. Greenberg, and S. Loeb. 2016. Within- and Between-Sector Quality Differences in Early Childhood Education and Care. Child Development 87(5): 1627–1645; Valentino, R. 2018. Will Public Pre-K Really Close Achievement Gaps? Gaps in Prekindergarten Quality Between Students and Across States. American Educational Research Journal 55(1) 79–116.

[3] Schneider, Aaron. 2025. A 2024 Review of Child Care and Early Learning in the United States. Center for American Progress.

[4] Morrissey, Taryn, and Maria Rendon. 2024. The Fragmented Early Care and Education Landscape. In Live Handbook of Education Policy Research. Edited by Douglas Harris. Association for Education Finance and Policy.

[5] Regenstein, Elliot. 2022. The Importance of Modernizing Technology and Developing Early Childhood Integrated Data Systems. Foresight Law + Policy.

[6] U.S. Department of Education, National Center for Education Statistics (USDOE NCES). 2023. What Is an Early Childhood Integrated Data System?

[7] Fantuzzo, John, Caitlin Henderson, Kristen Coe, and Dennis Culhane. 2017. The Integrated Data System Approach: A Vehicle to More Effective and Efficient Data-Driven Solutions in Government. Actionable Intelligence for Social Policy at University of Pennsylvania.

[8] USDOE NCES, 2023.

[9] Regenstein, 2022; Richards, Dale. 2025. Using Systems-Level Approaches to Transform Early Childhood Systems.

[10] Regenstein, 2022.

[11] Coffey, Maddie M., Philip Sirinides, and Erica R. Dabbs. 2024. Capacity Needs Between Developmental Stages of Integrated Data Systems.

[12] Sirinides, Philip, and Maddie Coffey. 2018. Leveraging Early Childhood Data for Better Decision Making: Access to Data on Early Learners Is Not Enough.

[13] Connors-Tadros, Lori, Kate Northey, Ellen Frede, Karen Hodges, and Tamara Jost. 2021. Effective State Offices of Early Learning: Structural Features, Enabling Conditions, and Key Functions in Four States. National Institute for Early Education Research at Rutgers University; Regenstein, 2022.

[14] Coffey et al., 2024.

[15] Sirinides and Coffey, 2018.

[16] Coffey et al., 2024.

[17] Connors-Tadros et al., 2021.

[18] Hackett, Sarah E., and Carrie King. 2023. States' Preschool Development Grant Applications Reveal Priorities for Stronger Data Integration. Child Trends.

[19] Data Quality Campaign. 2025. Legislation Summary 2025: Education and Workforce Data Legislation Review.

[20] Commonwealth of Virginia. n.d. Va. Code § 22.1-289.05. Uniform Measurement and Improvement System; Regional Entities; Establishment.

[21] Coffey et al., 2024; Regenstein, 2022.

[22] Coffey et al., 2024; Sirinides and Coffey, 2018.

[23] Connors-Tadros et al., 2021; Regenstein, 2022.

[24] Connors-Tadros et al., 2021.

[25] Connors-Tadros et al., 2021.

[26] Coffey et al., 2024.

[27] Ibid.

[28] Regenstein, 2022; US DOE NCES, 2020. Early Childhood Data Governance in Action: An Introduction (SLDS Issue Brief).

[29] Sirinides and Coffey, 2018.

[30] EdSystems & Northern Illinois University. 2022. CECIDS Governance Overview.

[31] Data Quality Campaign, 2025.

[32] Coffey, Maddie, Carolyn Chatis, Jane Sellers, and Richard Taylor. 2014. SLDS Early Childhood Integrated Data System Guide.

[33] Lin, Vivian, Sarah Hackett, Dana Richards, Carrie King, and Megan Bredeson. 2024. System Transformation for Equitable Preschools (Step Forward with Data) Framework. Child Trends; Richards, 2025.

[34] Coffey et al., 2024.

[35] Coffey et al., 2014.

[36] US DOE, Statewide Longitudinal Data Systems Grant Program. 2021. Early Childhood Integrated Data Systems Toolkit: Guide; Regenstein, 2022.

[37] Coffey et al., 2014.

[38] Fantuzzo et al., 2017; Hawn Nelson, Ashley, David Jenkins, Spiros Zanti, Matthew Katz, Thomas Burnett, Dennis Culhane, Kathryn Barghaus, et al. 2020. Introduction to Data Sharing and Integration.

[39] Data Quality Campaign. 2016. Roadmap for Early Childhood and K–12 Data Linkages: Key Focus Area to Ensure Quality Implementation.

[40] Data Quality Campaign, 2025.

[41] US DOE, Statewide Longitudinal Data Systems Grant Program, 2021.

[42] Data Quality Campaign, 2016.

[43] Hawn Nelson, et al., 2020.

[44] Friese, Sarah, Kelly Maxwell, Dale Epstein, and Jennifer Abrams. 2016. A Planning Guide for Linking Data to Support Program Improvement in Early Care and Education. Report #2016-39. Child Trends.

[45] Regenstein, 2022.

[46] Fantuzzo, et al., 2017.

[47] US DOE, Statewide Longitudinal Data Systems Grant Program, 2021.

[48] Data Quality Campaign, 2016.

[49] Hawn Nelson, et al. 2020.

[50] US DOE, Statewide Longitudinal Data Systems Grant Program, 2021.

[51] US DOE, Statewide Longitudinal Data Systems Grant Program, 2021.

[52] Regenstein, 2022.

[53] US DOE, Statewide Longitudinal Data Systems Grant Program, 2021.

[54] Coffey, Maddie, Philip Sirinides, Erica R. Dabbs, and Alyssa M. Havrilla. 2023. Building Capacity to Implement an ECIDS: Leadership Staffing. ECDataWorks.

[55] Sirinides and Coffey, 2018.

[56] Data Quality Campaign. 2024. Early Childhood Administrators Value Data for Decision-Making: A National Poll of Early Childhood Administrators.

[57] King, Carlise, Dale Epstein, Kelly Maxwell, Van-Kim Lin, Jennifer Abrams, Lindsey Hutchison, and Kimberly Burgess. 2016. Strength in Numbers: Supporting Quality Improvement in Early Care and Education Programs Using Linked Administrative Data. Report No. 2016-36. Child Trends.

[58] Quality Compendium. n.d. QIS status. Retrieved December 1, 2025, from https://qualitycompendium.org/top-ten/qis-status.

[59] Bipartisan Policy Center. 2023. Revisiting Integrated Efficient Early Care and Education Systems.

[60] Bipartisan Policy Center, 2023; Diamond, Zoë, Rebecca Hilty, Heather Keaton, Caroline Schaefer, and Kelechi Omonuwa. 2024. Insights on QRIS from Six States & a Literature Review. Child Trends.

[61] Bassok, Daphna, Patrick Magouirk, and Anna J. Markowitz. 2021. Systemwide Quality Improvement in Early Childhood Education: Evidence from Louisiana AERA Open 7: 1–17; Bassok, D., I. Fares, K. Miller-Bains, and J. Whittaker. 2025. How Virginia's LinkB5 system advances early education policy. Brookings, January 28; Diamond, et al., 2024; Gomez, Christy J., Anamarie A. Whitaker, and Jill S. Cannon. 2023. Do Early Care and Education Programs Improve When Enrolled in Quality Rating and Improvement Systems? Longitudinal Evidence from One System. Early Education and Development 34(5): 1236–53.

[62] Pianta, Robert, Karen M. La Paro, and Bridget Hamre. 2008. Classroom Assessment Scoring System (CLASS) Manual, Pre-K. Brookes.

[63] Bassok, Daphna, et al., 2021.

[64] Gomez, et al., 2023.

[65] Bassok, et al., 2021.

[66] Markowitz, Anna J., Daphna Bassok, and Daniel Player. 2020. Simplifying Quality Rating Systems in Early Childhood Education. Children and Youth Services Review 112: 104947; Tout, Kathryn, Katherine Magnuson, Sandra Lipscomb, Lynn Karoly, Rebecca Starr, Heather Quick, Diane Early, et al. 2017. Validation of the Quality Ratings Used in Quality Rating and Improvement Systems (QRIS): A Synthesis of State Studies. OPRE Report 2017-92.

[67] Tout, et al. 2017.

[68] Virginia Department of Education. 2025. More Quality Choices for More Families: Virginia Elevates Excellence in Early Childhood Care and Education with the Release of VQB5 Quality Ratings and New Honor Rolls. October 14; Virginia Department of Education. 2025. Virginia Kindergarten Readiness Program (VKRP) Report for the 2024–2025 School Year. RD579.

[69] Office of the State Superintendent of Education. n.d. Early Childhood Educator Pay Equity Fund. December 12.

[70] Office of the State Superintendent of Education, n.d.

[71] Doromal, Justin B., Rian Lamb, Erica Greenberg, Heather Sandstrom, and Laura Parra. 2025. Wage Enhancements Reduce Educator Turnover in DC's Child Care Centers: Findings from Staff Records and Interviews with Center Directors. Urban Institute.

[72] Doromal et al., 2025.

[73] City of Philadelphia, Office of Integrated Data for Evidence & Action. 2025. IDEA: Philadelphia's Integrated Data System — 2024 Year in review; Fantuzzo, John, Katherine Barghaus, Kristen Coe, Whitney LeBoeuf, Cassandra Henderson, and Caroline C. DeWitt. 2021. Expansion of Quality Preschool in Philadelphia: Leveraging an Evidence-Based,

Integrated Data System to Provide Actionable Intelligence for Policy and Program Planning. Children and Youth Services Review 127: 106093.

[74] City of Philadelphia, Office of Integrated Data for Evidence & Action, 2025.

[75] Fantuzzo et al., 2021.

[76] Fantuzzo et al., 2021.

[77] Data Quality Campaign, 2016.

[78] US DOE, NCES, 2023.

[79] Data Quality Campaign. 2024. Transform State Early Childhood Data to Meet the Needs of Children, Families, and Those Who Support Them.

[80] Coffey et al., 2014.

[81] Coffey et al., 2014.

[82] Data Quality Campaign, 2024.

[83] Coffey et al., 2024; Coffey, Maddie, Philip Sirinides, Erica Dabbs, and Alyssa Havrilla. 2025. National ECIDS Survey Cross Year Comparison Brief. ECDataWorks.

[84] Coffey et al., 2024.

[85] Garver, Kathleen A. 2024. Connecting The Dots: Linking Data Systems to Support Preschoolers and Their Families. National Institute for Early Education Research at Rutgers University.

[86] Early Childhood Data Collaborative. 2014. 2013 State of States' Early Childhood Data Systems (Publication #2014-06). Child Trends; Garver, 2024.

[87] Garver, 2024.

[88] Georgia's CACDS. Accessed February 17, 2026, from https://www.gacacds.com/.

[89] Watershed Advisors. 2024. State Early Childhood Data Linkages.

[90] Institute for Education Sciences, NCES. 2025. Statewide Longitudinal Data System Grant Program. December 12. Accessed December 12, 2025, from https://nces.ed.gov/programs/slds/grant_information.asp.

[91] Hackett and King, 2023.

[92] Sirinides and Coffey, 2018.

[93] Watershed Advisors, 2024.