Child Care & Early Education RESEARCH CONNECTIONS

A partnership between the National Center for Children in Poverty at the Mailman School of Public Health, Columbia University, and the Inter-university Consortium for Political and Social Research at the Institute for Social Research, the University of Michigan, supported by a grant from the Office of Planning, Research and Evaluation in the Administration for Children and Families, U.S. Department of Health and Human Services

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Early Care and Education Integrated Data Systems

A Key Topic Resource List

October 2014

Research Connections conducted a comprehensive search of its collection for resources focused on integrated data systems in early childhood education. Key words used in the search were "integrated data," "coordinated data," "linked data," and "data systems."

This Key Topic Resource List includes an overview and listing of selected resources from the literature. Resources of various types – including reports and papers, fact sheets and briefs, summaries, and reviews – are included. Selection criteria focused relatively recent resources (from the years 2000- 2014) that addressed issues or provided examples of efforts to create capacity to link administrative data related to young children and the services they receive at the individual (child, family, program or setting) level on an ongoing basis.

The development of integrated data systems is still in its infancy, and the research on integrated early childhood data systems is limited and largely descriptive of state efforts to create these data systems. Based on the search results, resources are grouped into the following categories:

- Goals and rationale for the development of integrated early childhood data systems
- Challenges, guidance, and tools for creating integrated early childhood data systems
- State and local examples of integrated data systems
- Inventories of state and local data

To obtain information on resources on this topic added to the *Research Connections* collection since the publication of this Resource List, please use the following link and filter by publication and/or acquisition date: *Create Updated Search Results.*

OVERVIEW

To improve data-driven decision-making, assist in the coordination of programs and services, and improve ease of access for children and families, states and localities are beginning to bring together administrative data historically maintained independently by individual programs and services. These efforts may draw data from child care licensing, child care subsidy, state-funded prekindergarten, early intervention, and early childhood special education programs, among others. The data may provide information on individual children in these programs, families receiving services or benefits related to their young children, individuals working directly with young children (such as early care and education staff or family child care providers, and early childhood consultants providing professional development or quality improvement technical assistance), and settings where young children receive services (such as child care centers and family child care homes, prekindergarten programs, and early childhood special education classrooms). These data may be maintained by a number of agencies, including education or early education, health, children and family services, and human services data. Many states are also compiling data on the programs and providers participating in their quality rating and improvement systems (QRIS), including early childhood workforce registry data.

Recent federal initiatives have encouraged states to link data across programs and agencies and create integrated systems that link at least some data related to young children. These initiatives include: State Early Childhood Advisory Councils, established under Head Start Reauthorization in 2008, which encouraged states to develop recommendations for building a statewide "unified data collection system," State Fiscal Stabilization Funds through the American Recovery and Reinvestment Act, which charged state education agencies with building statewide, longitudinal data systems to follow students from pre-K to college and career (P-20); and the Race to the Top – Early Learning Challenge grant program, which provided support to state grantees to build or enhance an early learning data system to improve instruction, practices, services, and policies.

These and other efforts seek to go beyond the construction of stand-alone datasets that link data from multiple sources for specific research projects. Their goal is to develop a system – with the necessary governance framework, organizational capacity, technological infrastructure, and protection of confidentiality- to permit administrative data from multiple sources to be linked at the individual or family level on an ongoing basis. Such a system has been variously characterized as "coordinated" or "integrated," among other terms.

Key features of a fully developed integrated data system include: common terms and/or definitions for common data elements, ability to link information for the same individual, family, or program setting across multiple data sources, and agreements and procedures that safeguard data privacy. Decisions about whether/how the integrated data system will maintain longitudinal or historical data and which specific data elements from each administrative source will be linked or incorporated into the integrated system are also needed. These decisions derive from the information needs to be met and the intended practices and policies to be informed by the data system.

Examples of the policy-relevant information that an integrated early childhood data system could provide include:

- Which children have access to high-quality early care and education?
- Is the quality of early education programs improving and how is this related to quality improvement investments?
- How prepared is the early care and education workforce to meet the needs of all children?
- How are children's early education experiences related to success as they enter kindergarten?

Two present consortia focused on assisting states develop integrated early childhood data systems are:

- The Quality Initiative Research and Evaluation Consortium (INQUIRE), sponsored by the Office of Planning, Research and Evaluation (OPRE), which has developed guidance and tools, including a comprehensive data matrix, a data dictionary, and examples of key policy questions that can be addressed by information from integrated data systems (see www.researchconnections.org/content/childcare/federal/inquire.html)
- The Early Childhood Data Collaborative, based at Child Trends and supported by the Alliance for Early Success, The Pew Charitable Trusts, and The David and Lucile Packard Foundation, conducted a survey of state early childhood data system efforts and provides other tools and resources to state policymakers (see www.ecedata.org)

ACKNOWLEDGEMENTS

This Key Topic Resource List was developed by staff of Child Care & Early Education *Research Connections*. Special thanks to Carlise King, Executive Director, Early Childhood Data Collaborative at Child Trends and Kathleen Dwyer, Meryl Barofsky, and staff at the Office of Planning, Research and Evaluation (OPRE) for their review and helpful feedback and suggestions.

UNIVERSITY AND RESEARCH ORGANIZATIONS

- **Culhane, D. P., Fantuzzo, J. W., Rouse, H. L., Tam, V., & Lukens, J. (2010). Connecting the dots: The promise of integrated data systems for policy analysis and systems reform. (2nd ed., Departmental Papers (SPP) School of Social Policy and Practice Vol. 1, no. 3. Philadelphia: University of Pennsylvania, Intelligence for Social Policy.**
  This article explores the use of integrated administrative data systems in support of policy reform through interagency collaboration and research. The legal, ethical, scientific and economic challenges of interagency collaboration and research are examined. A survey of eight integrated data systems, including states, local governments and university-based efforts, explores how the developers have addressed these challenges. Some exemplary uses of the systems are provided to illustrate the range, usefulness and import of these systems for policy and program reform. Recommendations are offered for the broader adoption of these systems and for their expanded use by various stakeholders. (author abstract)

OTHERS

- **Hernandez, D. J. (2012). Prek-3rd: Next steps for state longitudinal data systems (PreK-3rd Policy to Action Brief No. 8). New York: Foundation for Child Development.**
  Building on the work of the Data Quality Campaign, this brief recommends that the federal government convene a national advisory group, made up of policymakers, educators, researchers, and technical experts to develop guidelines that will help states create longitudinal data systems for PreK–3rd Grade. The group should help states in three key areas: Fully integrating PreK data from both public and private programs into state longitudinal data systems; Designing and implementing three distinct "electronic gateways" or "portals" to make appropriate levels and types of information available to a variety of stakeholders; and Revising laws and regulations to maintain student confidentiality while ensuring easy and timely access to information. (author abstract)

- **Early Childhood Data Collaborative. (2010). Getting started: 10 fundamentals of coordinated state early care and education data systems. Washington, DC: Early Childhood Data Collaborative.**
  Transforming data systems so that they are improvement driven, coordinated and longitudinal lays the groundwork for coordinated state ECE data systems. The 10 ECE Fundamentals outlined here provide the foundation for answering the critical questions that policymakers seek to answer. Of the four domains of services and supports that are fundamental to early child growth and development – health, early intervention programs, family supports and services, and ECE – this framework focuses on the ECE domain. (author abstract)

- **Bruner, C. (2009). Opportunities to incorporate young child data into statewide longitudinal data systems through American Recovery and Reinvestment Act (ARRA) funding. Denver, CO: Build Initiative.**
  The authors present opportunities for and discuss the benefits of accessing the funding available to support the incorporation of young child data into state data systems. Grants offered to cover expansion activities may be used to include preschool data in creating consolidated P-16 data systems, provide teacher data for children enrolled in preschool programs, and incorporate child care data through state subsidy programs, for instance. The funding provides early learning systems builders with an opportunity to help develop their statewide longitudinal data system in a way that can forge stronger connections with the K-12 system and furnish information that can support continuous improvement in early learning systems development.

- **Early Childhood Learning Knowledge Centre. (2008). Bringing it together: Merging community-based, life-course, linked data, and social indicator approaches to monitoring child development: Proceedings from the Early Childhood Learning Knowledge Centre's Monitoring Committee Workshop. Ottawa, Ontario: Canadian Council on Learning.**
  The purpose of this document, and the workshop that it summarizes, is to highlight approaches to data collection that may be useful for monitoring early child development in Canada. As early child development (ECD) is a foundation of health, well-being, learning, and behaviour across the life course, the capacity to monitor ECD over time and by location is basic to the success of a modern society. (author abstract)

- **Child Health and Development Institute of Connecticut. (2006). Laying the foundation for a ready state: the Early Childhood DataCONNections Project: A report on successes & opportunities to support policy decisions with data. Farmington, CT: Child Health and Development Institute of Connecticut.**
  Since 2002 DataCONNections has made great strides in elevating the importance of data and research and underscoring how they can affect policy change. This report will highlight the project's major accomplishments as well as the methods used to achieve these successes. It will also discuss needed future efforts around early childhood data and research capacity building in Connecticut. In doing so, this report will also establish the need to permanently sustain the functions served by the DataCONNections project. (author abstract)

GOVERNMENT

- **United States. Administration for Children and Families. Office of Planning, Research and Evaluation. (2014). Best practices in data governance and management for early care and education: Supporting effective quality rating and improvement systems. United States. Administration for Children and Families. Office of Planning, Research and Evaluation.**
  As a centerpiece of state early care and education (ECE) activities, Quality Rating and Improvement Systems (QRIS) serve as an example of the how an effective ECE data system can support planning, operations, service delivery, monitoring and evaluation. Intentional and rigorous data management practices are essential for data gathered exclusively for the QRIS (such as program observation scores), as well as for external data accessed by the QRIS (such as workforce registry data). Implementing strong ECE data governance and management practices will ensure the quality of QRIS data and thus the integrity of the QRIS itself. Incomplete, inaccurate, or unreliable data can introduce errors in the ratings that can threaten the credibility of the QRIS and have negative consequences for ECE and school-age care (ECE-SAC) programs through skewed reimbursement rates and inaccurate marketing tied to incorrect ratings. The purpose of this brief is to illustrate the need for and benefits of building strong ECE data governance structures and implementing system-wide data management policies and practices, using the example of QRIS. (author abstract)

- **United States. Administration for Children and Families. Office of Planning, Research and Evaluation. (2014). Best practices in ensuring data quality in quality rating and improvement systems (QRIS). United States. Administration for Children and Families. Office of Planning, Research and Evaluation.**
  Collecting and using data are core activities in a well-functioning Quality Rating and Improvement System (QRIS). Yet, data used in a QRIS are frequently housed in different systems, using different data management techniques. Ensuring a high level of QRIS data quality involves implementing a number of best practices drawn from established practices used in other fields. The purpose of this brief is to describe the specific strategies QRIS data stakeholders can use to improve upon the collection, management, and dissemination of QRIS data. The audience for this brief includes QRIS program administrators, technical assistance providers, data managers, and researchers. This brief is structured around the five stages of the Data Lifecycle: planning, collection, processing, management and distribution. Best practices are recommended for each stage of the Lifecycle. (author abstract)

- **ACF Interoperability Initiative. (2014). Confidentiality toolkit: A resource tool from the ACF Interoperability Initiative. United States. Administration for Children and Families.**
  The Administration for Children and Families (ACF) developed this Confidentiality Toolkit to help jurisdictions successfully navigate the delicate balance between privacy and security with the delivery of efficient and effective services. The Confidentiality Toolkit analyzes, explains and aids states and local jurisdictions in the navigation of a number of federal laws that impact the implementation of human services. Embedded throughout are success stories and sample documents from across the country from which jurisdictions using the Toolkit can borrow freely. This Toolkit has been developed for leaders in the human service field, to support their best efforts to share information across silos. (author abstract)

- **United States. Administration for Children and Families. Office of Planning, Research and Evaluation. (2013). INQUIRE data toolkit. (OPRE Report No. 2013-58). Washington, DC: United States Administration for Children and Families, Office of Planning, Research and Evaluation.**
  The Quality Initiatives Research and Evaluation Consortium (INQUIRE) Data Work Group was convened to address a request from stakeholders for information on building an effective data infrastructure to support activities including monitoring, continuous program improvement, reporting, validation and evaluation in Quality Rating and Improvement Systems (QRIS) and other quality initiatives. The INQUIRE Data Toolkit was designed to provide tools to support effective data collection and the use of data to answer important policy and reporting questions through the use of common data elements. (author abstract)

OTHERS

- **Data Quality Campaign. [n.d.]. Race to the Top-Early Learning Challenge (RTT-ELC) program: Data implications. Washington, DC: Data Quality Campaign.**
  RTT-ELC is a competitive state grant program designed to reward states that create comprehensive plans to transform early learning systems with better coordination, clearer learning standards, and meaningful workforce development. Several aspects of the RTT-ELC program have implications for state data systems and would support effective data use. It also establishes definitions for Essential Data Elements for early learning and development data systems. This document summarizes these provisions. (author abstract)

- **Bornfreund, L., & Severns, M. (2010). Many missing pieces: The difficult task of linking early childhood data and school-based data systems. Washington, DC: New America Foundation.**

The authors outline the main challenges states face in integrating early childhood data into their K-12 statewide longitudinal data systems. Proposals from recent grant winners are analyzed and data collection strategies are presented. Recommendations are made at both the federal and state levels to support the optimal use of early childhood data for all stakeholders.

- **Demma, R. (2010). Building ready states: A governor's guide to supporting a comprehensive, high-quality early childhood state system. Washington, DC: National Governors' Association, Center for Best Practices.**
  This guide provides governors and other state policymakers with strategies for building a comprehensive, high-quality early childhood system. Features of such a system are discussed, and six state actions are proposed: (1) coordinate early childhood governance; (2) build an integrated professional development system; (3) implement a quality rating and improvement system; (4) develop a coordinated, longitudinal data system; (5) align comprehensive early learning guidelines and standards; and (6) integrate funding sources to support system development.

- **Early Childhood Data Collaborative. (2010). Building and using coordinated state early care and education data systems: A framework for state policymakers. Washington, DC: Early Childhood Data Collaborative.**
  In consultation with an early childhood data advisory group, and with feedback from early childhood stakeholder groups, the ECDC has developed a framework that: articulates principles for developing state ECE data systems that enable continuous improvement and answer states' critical policy questions; identifies the 10 ECE Fundamentals that provide the foundation for coordinated ECE data systems; and provides guidance to state policymakers to ensure appropriate data access and use while protecting privacy and keeping data secure. (author abstract)

- **Bruner, C., & Emarita, B. (2009). Building public early childhood data systems for a multi-ethnic society: Issues and opportunities. Cross Lanes, WV: Build Initiative.**
  This brief focuses on the issues and opportunities states face in building early childhood data systems that address the needs of their multi-ethnic populations. Five potential gaps have been identified in the areas of readiness, participation, cultural awareness and recognition, workforce diversity, and stakeholder planning and decision-making. In order to address and move to close these gaps, the authors recommend that as states develop their early learning data systems, they should focus efforts on ensuring that data is publically accessible and transparent, while honoring data privacy issues. By involving diverse stakeholder participation and providing technical support, children of different cultural, ethnic, racial, and language backgrounds may be better served.

- **Duran, F., Wilson, S. B., & Carroll, D. (2005). Putting administrative data to work: A toolkit for state agencies on advancing data integration and data sharing efforts to support sound policy and program development. Farmington, CT: Child Health and Development Institute of Connecticut.**
  The ultimate goal of this toolkit is to help state agencies strengthen their data and research infrastructure. It provides an assessment tool to help agencies determine their enhancement needs as well as guidelines on how to approach implementation of several different infrastructure-enhancing strategies. The toolkit is not intended to function as a technical design manual, but rather seeks to help agencies identify necessary components for successful implementation of the strategy or strategies they choose to pursue. The guidance provided within the toolkit is based on best practice and lessons learned from those that have worked on similar efforts, both nationally and in Connecticut. (author abstract)

- **Vinci, Y., & Galvan, M. (2002). Data collection for building early learning systems: Using data for real world decision-making. Washington, DC: National Association of Child Care Resource and Referral Agencies.**
  In order to meet the goals set out in the No Child Left Behind Act of 2001, the authors argue for an improved, more interconnected system of supports for early learning that can provide information gathering, analysis and reporting on an ongoing basis to inform all the stakeholders of learning opportunities for America's children. These consumers of child care data include parents, community planners and economic developers, employers, policy decision-makers, programming decision-makers, and researchers. A description of each type of data (primary, licensing, subsidy, and research and referral) is presented along with a comparison of their features, advantages and disadvantages, and optimal uses in and for decision-making. In order to fill the gap between the amount of data needed by consumers and the amount of data available, it is recommended that a center for data aggregation and dissemination be put into place. Such a data collecting system should honor the personal privacy of parents and children while making comparable, locally-derived information available for national, state, and local stakeholders.

- **Great Britain. Department for Work and Pensions. (2001). Linking child poverty and child outcomes: Exploring data and research strategies. (Research Working Paper No. 1). London: Great Britain, Department for Work and Pensions.**
  In the search to discover links between child poverty and educational, health/psychological, and adolescent/adult social integration outcomes in the United Kingdom, the authors identified gaps in both data coverage and links among datasets. Recommended improvements include: linking administrative data over time and to surveys (individual level); linking administrative data about neighborhood and services to individual level surveys (aggregate level); constructing and using neighborhood data from clustered designs; using data from evaluation studies and designed experiments; and better exploiting existing data.

STATE AND LOCAL EXAMPLES

GOVERNMENT

- **United States. Department of Health and Human Services. (2011). State issues and innovations in creating integrated early learning and development systems: A follow-up to Early childhood 2010: Innovations for the next generation. (HHS Publication No. (SMA) 11-4461). Rockville, MD: U.S. Department of Health and Human Services.**
  In convening Early Childhood 2010, the U.S. Departments of Health and Human Services and Education sought to highlight and encourage innovative and integrated state early learning and development systems. The many state examples detailed in this document illustrate an array of approaches and activities now underway, with numerous opportunities for state leaders to learn from each other. Even in challenging times, states can develop unique approaches to a range of issues, including coordinating state leadership; using data effectively; developing systems of quality improvement; partnering with families and communities; integrating health and behavioral health across systems; and addressing the needs of children with multiple risks to their development. (author abstract)

UNIVERSITY AND RESEARCH ORGANIZATIONS

- **Kipnis, F. & Whitebook, M. (2011). Workforce information: A critical component of coordinated state early care and education data systems. Berkeley, CA: Center for the Study of Child Care Employment, University of California at Berkeley.**
  The brief describes the early care and education workforce data landscape in the states, focusing on the three main workforce data systems operating across multiple states. It also details the challenges to aligning these systems and current efforts to address these challenges. (author abstract)

JOURNALS

- **Lavenda, O., Hunter, B., Noelle, M., Bolick, L., Haselden, C., Tester, D., Knopf, H., & and Ha, Y. (2011). Administrative data as children's well-being indicators: The South Carolina Data Bridge Project. *Child Indicators Research*, 4(3), 439-451.**
  Administrative data are data regularly collected by organizations for monitoring and documentation purposes. They usually represent entire populations; they are timely; and have direct influence on their sources which are mostly governmental agencies. We argue in this paper that administrative data can and should be used as indicators of children's well-being as they constitute an existing body of knowledge that has the potential to form and influence policy. Such use of administrative data as of child well-being indicators is demonstrated by the South Carolina Data Bridge Project, initiated with a child care research capacity grant awarded in 2007 by the Office of Planning, Research and Families (OPRE) to study the impact of Child Care and Development Fund on the quality of care available to and utilized by low-income working parents and at-risk families. The project's goal was achieved by linking different sources of child care administrative data to create analytic data cubes that allow the examination of quality of care provided to children and factors contributing to it. This project indicates the importance of administrative data and their potential impact on well-informed decision making and policy change to improve children and families' well-being. (author abstract)

UNIVERSITY AND RESEARCH ORGANIZATIONS

- **Kreader, J. L., & Schneider, W. (2011). Putting the pieces together: New York early learning program data systems. Rensselaer, NY: New York State Council on Children and Families, Early Childhood Advisory Council.**
  An inventory of the elements and accessibility of early education and care data systems maintained by New York State and New York City agencies in the areas of: (1) program/provider supply; (2) enrollment, participant demographics, and demand; (3) early childhood workforce; (4) program quality; (5) outcomes for children and families; and (6) costs and financing; with recommendations for steps toward the development of integrated comprehensive early childhood data systems.

- **Ashby, D. T., Zaikina-Montgomery, H., Phebus, T., Waddoups, J., & Lopez, E. (2009). Nevada state early childhood database planning: Feasibility analysis report. Las Vegas, NV: Nevada Institute for Children's Research and Policy.**
  The goal of this report is to analyze the feasibility and viability of the creation of a comprehensive database that contains accurate and timely early childhood data for children in the State of Nevada. This goal was achieved by reviewing and compiling: Early childhood data currently available from the organizations and agencies within the State of Nevada; Early childhood Nevada data currently available from the organizations and agencies outside of the State of Nevada; Databases currently used in the State of Nevada and their capacity to meet the needs for a comprehensive database; Legal issues and other barriers that may be encountered in the process of building a comprehensive database; Database options and recommendations, including the timeline and budgets involved. (author abstract)

- **Wilson, S. B. (2006). A development plan for early care and education data and research systems: A report on building data and research capability and supporting policy decisions with quality data. Farmington, CT: Child Health and Development Institute of Connecticut.**
  This resource presents a development plan for early

care and education (ECE) data and research in the state of Connecticut by taking a broad view of the data landscape and identifying needs for system improvements, data integration, and research capability. A scan and assessment of ECE databases were conducted, as well as a survey to research the needs of the state agency staff who use these databases. Based on these findings, a recommended plan for developing a comprehensive set of databases with the capacity to be integrated or linked are presented in order to enhance state operational and policy decision-making. Part 1 of the plan outlines ten infrastructure recommendations while Part 2 identifies six areas of policy interest, namely provider supply, early care and education workforce, provider quality, family demand for early care and education, child and family outcomes, and early care and education cost and financing. Concluding recommendations focus on developing and analyzing ECE cost and financing data with specific sources cited.

- **Edie, D., Sweet, A., Bierbrauer, J., Adams, D. B., & Roach, M. A. (2005). Progress and promise for strengthening child care data capacity. (Public Policy Series on Alternative Policy Options No. 6). Madison: University of Wisconsin--Extension.**
  This resource discusses Wisconsin's efforts to build on its child care data system by first outlining the history (1996-2004) of developing its automated child care subsidy payment system. Wisconsin's Data Capacity agenda included creating an integrated statewide child care provider profile and launching an early care and education web mapping project, in addition to building partnerships with other data groups and agencies. A brief synopsis of lessons learned from five other states' Data Capacity projects is presented. It compares government structures for delivering regulation, subsidy, and quality services as well as mechanisms for sharing data across agencies. The vision for an integrated early care and education data system includes the reasoning that the system would need to include key information about the full range of programs serving young children such as Four-year old Kindergarten, Head Start, Birth to Three Intervention Program, and Special Education for 3- to 5-year-olds. In conclusion, the authors offer seven conceptual policy options which build on the strong child care information systems already in place. These options range from no change to a future vision of an interagency early care and education research and policy coordination unit.

- **Cleveland, G. (2003). The state of data on early childhood education and care in Canada: National Data Project: Final report. Toronto, Ontario, Canada: University of Toronto, Childcare Resource and Research Unit.**
  The purpose of this project is to propose a strategy with options for developing reliable comparable data to inform Canadian early childhood education and care (ECEC) policy, research, and service delivery. An overview of the current state of ECEC data in Canada is presented and described as being incomplete, inconsistent, and in need of improvement. Key reasons for collecting, organizing, and analyzing data are discussed, and several international data approaches to ECEC data that may be useful in Canada are shared. The authors present six recommendations that could aid in improving the quality of reporting over time: 1) developing new data collection vehicles; 2) improving utilization and design of existing data collection vehicles; 3) Improving provincial/territorial administrative data; 4) developing a Canadian policy and program database; 5) establishing a program of ECEC research; and 6) coordinating data collection and organization. Improvements made in these areas can play a key role in strengthening ECEC policy and programs as well as enhancing public accountability.

OTHERS

- **Early Childhood Data Collaborative. (2013). State spotlight: Vermont: Early Childhood Data Reporting System (ECDRS): Improving outcomes for young children and their families. Washington, DC: Early Childhood Data Collaborative.**
  Vermont recognized early on that a coordinated, longitudinal data system was a critical and missing piece of Vermont's early childhood system infrastructure. Through participation in the National Governors Association's 18 month Supporting Ready States initiative, stakeholders were able to tackle this issue and create a roadmap for the Vermont Early Childhood Data Reporting System (ECDRS) that would begin to help answer key policy questions. When the ECDRS is fully developed, Vermont policymakers and practitioners will be able to track early childhood outcomes, measure the return on investments, inform program planning and policies, and drive continuous improvement. (author abstract)

- **Early Childhood Data Collaborative. (2010). Coordinated state early care and education data systems: What's next in the states? Washington, DC: Early Childhood Data Collaborative.**
  The Statewide Longitudinal Data Systems (SLDS) grant program provides funding to states interested in linking early care and education data with K-12 data. Highlighted in this study are state SLDS grant winners' profiled plans for early care and education data systems, including a comparison to the Early Childhood Data Collaborative's (ECDC) 10 Fundamentals of coordinated state early care and education data systems.

- **Bradburn, I. White, N. J., Schroeder, A. D., & Faas, C. (2010). Virginia's local social service agencies: Child care quality, improvement, subsidy data, and what would be most useful in an early childhood data system. Richmond, VA: Project Child HANDS.**
  The authors examine how the local departments of social services across Virginia reported allocating their quality improvement (QI) funds in 2009. They also sought to discover what types of data are routinely collected, as well as what types of information locali-

ties would like from an early childhood data system. A survey of the departments revealed the types of data collected related to the child care subsidy program, preschool and childcare, childcare quality, and learning outcomes. Also surveyed were the methods agencies used to store data. Results indicate that the majority of 2009 QI funds appear to be dedicated to purchasing materials, curricula, and professional development activities, rather than to assessment, family-oriented activities, or business practices. Type of care is the only data reported that they collect additional quality-related information related to subsidy care. Localities cited the tracking of a 5-year cap for child care assistance, parent employment as related to child care use, and child care quality by type of provider as the top three data types that would prove most helpful to them. Future research could shed light upon the professional development and curricula choices of localities.

- **Stedron, J. (2010). A look at Pennsylvania's early childhood data system. Denver, CO: National Conference of State Legislatures.**
  This brief describes the development and characteristics of Pennsylvania's early childhood data system, the Early Learning Network, which collects data on children, teachers, and programs overseen by the state's Office of Child Development and Early Learning. Information is provided on system policy, governance, linkages, and data access, reporting, and use, along with privacy practices and recommendations for other states.

- **Stedron, J. (2010). A look at Maryland's early childhood data system. Denver, CO: National Conference of State Legislatures.**
  This brief describes the development and characteristics of Maryland's early childhood data system, encompassing the Maryland Model for School Readiness, which collects data on individual children, and the Child Care Automated Tracking System, which collects data on licensed programs. Information is provided on system governance, history, linkages, and data access, reporting, and use, along with current developments, future goals, and recommendations for other states.

- **Schott Fellowship in Early Care and Education. (2004). Using data to create change for young children in the Commonwealth. Cambridge, MA: Schott Foundation for Public Education.**
  Massachusetts, like other states, collects a great deal of data about young children and early education professionals. However, because this data is collected in multiple formats by several agencies, it is often overlapping, not easily accessible, and not optimally effective for program planning or policy. Further, families, providers, and administrators report that they spend excessive amounts of time completing duplicative forms from numerous sources without knowing their direct value. Finally, talented staff at government offices has neither the time nor resources needed to analyze or report all of the information that is, nevertheless, continually collected. More effective systems would address these challenges, enabling data to be a more potent tool for social change. Currently, there is no comprehensive state-wide system for collecting data on the 396,758 children under age five or the workforce that cares for them. In March 2004, a joint report issued by the Commissioners for Education, Public Health and Child Care Services recommended that the state "create an effective data collection system to inform policy program planning and development." However, planning or funding for such as system has not yet resulted from this recommendation. (author abstract)

INVENTORIES OF STATE AND LOCAL DATA

OTHERS

- **Early Childhood Data Collaborative. (2014). 2013 state of states' early childhood data systems. Washington, DC: Early Childhood Data Collaborative.**
  In July 2013, the ECDC surveyed 50 states and the District of Columbia to assess state early childhood data systems. The survey, completed by state education, health, and social services staff, focused on these three key aspects of state data systems, taken from ECDC's 10 Fundamentals: Do states have the ability to securely link child-level data across ECE programs and to other state data systems, including K-12, health, and social services? Do states collect developmental screening, assessment, and kindergarten entry data to examine children's developmental status and service needs? Do states have an ECE data governance structure designated to support the development and use of a coordinated longitudinal ECE data system? (author abstract)

- **National Registry Alliance. (2013). State of Registries survey 2012: A survey of the nation's early childhood and school-age registries. Washington, DC: National Registry Alliance.**
  The purpose of this summary is to provide the most useful and relevant information for States, regions, counties, and Territories as they seek to initiate, enhance, or evaluate their registry systems. As such, this report includes a subset of the total number of questions within the comprehensive survey. A secondary purpose of this summary is to provide information to policymakers working in early childhood, professional development, data management or other fields related to the information provided by State registry systems. (author abstract)

- **Early Childhood Data Collaborative. (2012). Developing coordinated longitudinal early childhood data systems: Trends and opportunities in Race to the Top Early Learning Challenge applications. Washington, DC: Early Childhood Data Collaborative.**
  The Race to the Top Early Learning Challenge (ELC) encouraged states to demonstrate their commitment to integrating and aligning resources and policies across all of the state agencies that administer public funds related to early learning and development. Building or enhancing an early learning data system was an optional section of the application, and 30 of the 37 applicants addressed this priority. In 2011, nine states, six of which addressed the data priority, won competitive ELC grants. An additional five states are eligible to apply for smaller grants in 2012, and all but one of these states addressed the data priority in their initial applications. Some states that chose not to address this priority in their ELC applications indicated that they were already working on early learning data systems through other federal grants, including the State Longitudinal Data Systems (SLDS) Grant or grants that support State Advisory Councils on Early Childhood Development and Care. This issue brief analyzes the 30 state plans to build or enhance early learning data systems (section E2), with a more in-depth review of the states with the top 17 scores from this section. (author abstract)

- **Early Childhood Data Collaborative. (2011). 10 fundamentals of coordinated state early care and education data systems: Inaugural state analysis. Washington, DC: Early Childhood Data *Collaborative.***
  This brief presents highlights of an analysis of a survey of 48 states and the District of Columbia on state implementation of ten essential components of coordinated early care and education (ECE) data systems. Suggestions are offered in response to the finding that current systems, though they collect large amounts of data on children, providers, and program sites, are often inadequate for the needs of state ECE policymakers in assessing data and formulating policy.

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