

#### Big Data for Little Kids: The Importance and Utility of Early Childhood Integrated Data Systems (ECIDS) Taletha Derrington, SRI International and Missy Cochenour, AEM Corporation

A DIVISION OF SRI INTERNATIONAL

# **Background and Objectives**

- Data systems provide an important platform for data use for program improvement.
- Lack of linkages between the data systems of the multiple programs that serve young children and families is a barrier to using data for program improvement.
- Stakeholders practitioners, administrators, policy makers, families, and others invested in early childhood are needed to provide advocacy and support in the creation, maintenance, and use of high quality Early Childhood Integrated Data Systems (ECIDS) that have these linkages.

## Methods

- Data linkage refers to joining or connecting records about an entity (e.g., child, professional, program) in one data system or dataset to the same entity in another data system or dataset; records could reside in the same data system, or in separate data systems that have been linked at least once, (i.e., linkage can range from a one-time event for a specific set of data to ongoing/real-time linkage). • Review of 2013 survey responses by state Early Intervention (EI) and Early Childhood Preschool Education (ECSE) staff reporting on data linkages to the Individuals with Disabilities Education Act (IDEA)
- Center for Early Childhood Data Systems (DaSy Center) (N=52, including states, the District of Columbia, and Puerto Rico; El response rate = 94%, ECSE response rate = 96%) (see handout references for more details).
- Review of the Early Childhood Data Collaborative (ECDC) surveys in 2010 and the District of Columbia (N = 51, response rate = 100%) (see handout references for more details).



## Results

Most state programs collect data on the children (and families served) and workforce, but there is a lack of program level data. Not many states can link child data to workforce or program data.

#### **D** ECDC (2013)

• Data collected on children and the ECE workforce and programs were uncoordinated, being housed in multiple data systems and agencies.

#### **\* DaSy (2013)**

- Most states have workforce data systems containing information on IDEA EI and ECSE providers /teachers (65% and 83% of states, respectively).
- 29% of EI and 40% of ECSE state programs had data systems for programs/schools/classrooms.
- 40% of EI and 31% of ECSE state programs had linkages between child and workforce data.
- 19% of EI and 31% of ECSE state programs had linkages between child and program/school data. Fewer than 1 in 5 states linked EI or ECSE workforce data to program/school data.

Addressing critical policy and program improvement questions requires states be able to link child, provider, and program data, and link EI and ECSE data with other ECE, K-12 education, health, and social programs.

If a state had these linkages	Policymakers and administrators could answer these questions.
Child-level to provider-level data	<ul> <li>How does academic preparation and/or</li> </ul>
linkages within an ECE program	experience relate to child (and family) outcomes?
Child-level to program-level data	<ul> <li>What program characteristics are associated with</li> </ul>
linkages within an ECE program	positive outcomes for children?
Provider-level to program-level	<ul> <li>Which programs have the lowest staff turnover?</li> </ul>
data linkages within an ECE	
program	
Child loval data linkagas across	



More states need to be able to link data within and across programs to inform critical policy and program decisions.

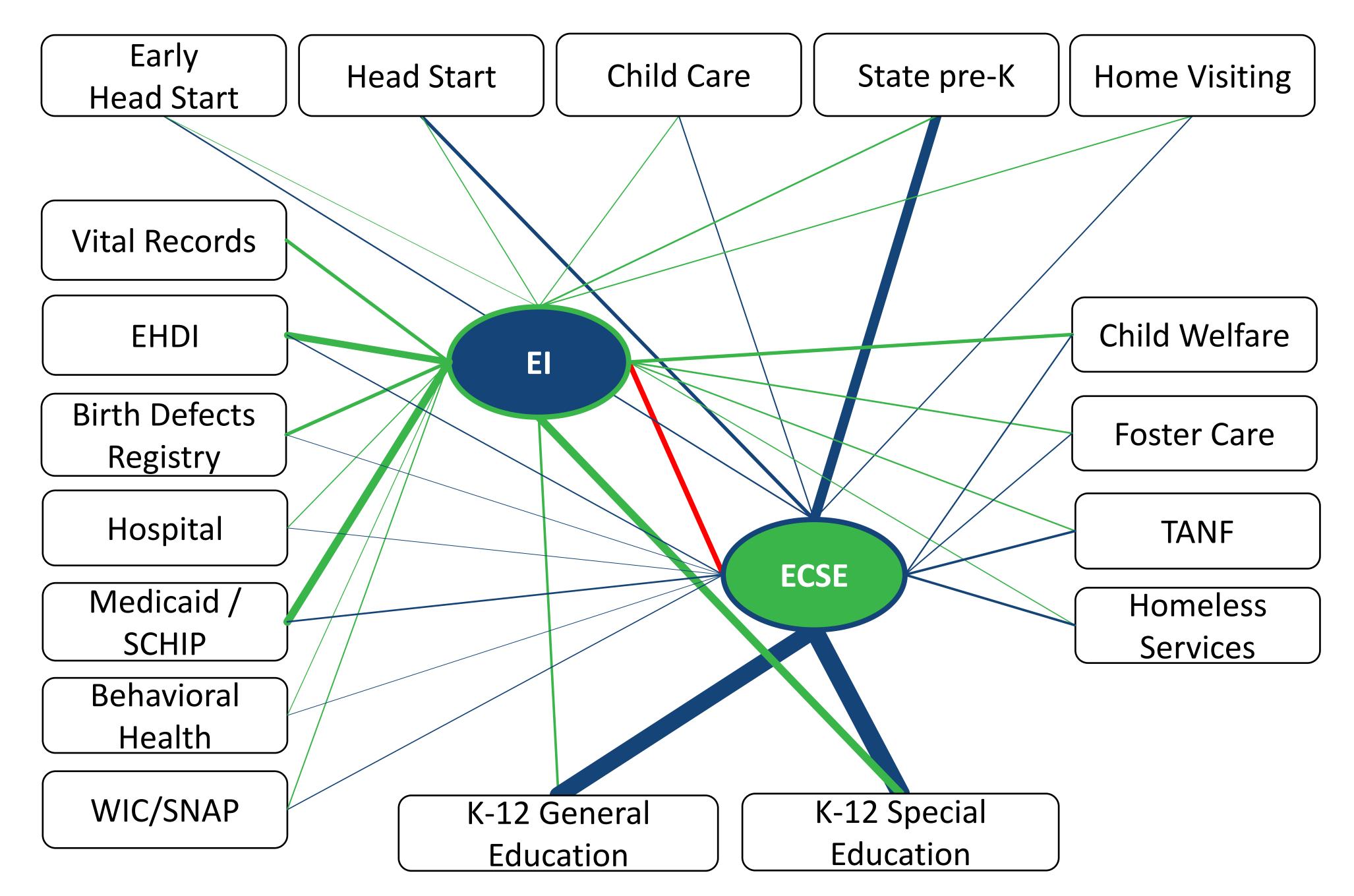
## **D** ECDC (2013)

- Pennsylvania is the only state able to link child level data across all ECE programs.
- Child-level data are linked across two or more ECE programs in 25 states, and 17 states are planning linkages in the future.

## **☆ DaSy (2013)**

• The graphic below displays considerable variation in linkages of EI and ECSE to other ECE, health, and social programs within each state (ranging from 2% to 87% across states).

**Relative Percentage of States with Specific Data Linkages among EI, ECSE, other** ECE Programs, School, Health, and Social Service Programs.



Child-level data linkages across ECE, K-12 education, health, and social service programs

linkages across ECE programs

- How many children are served in various early childhood programs?
- What percentage of children with IFSP/IEPs are receiving IDEA services in inclusive settings (e.g., Early Head Start, state-operated prekindergarten)?

**Child-level to program-level data** • What is the relationship between child outcomes and characteristics of the general early care and education program children attend?

# **Conclusion: Implications for NTI Attendees**

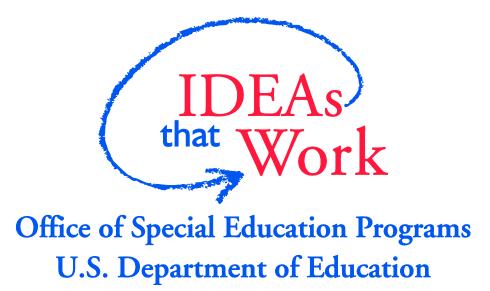
- 1. Review the ECDC and DaSy findings to learn about the data systems in your states for children, workforce, and programs across ECE, education, health, and social services programs.
- 2. Conduct detailed linkage studies like the DaSy survey to learn about connections across non-IDEA programs – more data on data are needed!
- 3. Become a stakeholder and/or support stakeholder engagement in ECIDS in your state.

# **Discussion Questions**

Note: The thickness of the lines represents the relative proportion of states with linkages. Abbreviations: ECSE = Early Childhood Special Education; EI = Early Intervention; EHDI = Early Hearing Detection and Intervention; SCHIP = State Children's Health Insurance Program; TANF = Temporary Assistance to Needy Families ; WIC/SNAP = Women, Infants, and Children/Supplemental Nutrition Assistance Program.

- 1. What questions do you have about children's services, outcomes, and public investment in early childhood health/behavioral health, development, and education that could be answered by ECIDS?
- 2. What roles could you play as a stakeholder in the development of ECIDS?

For more information, contact Taletha Derrington at <u>taletha.derrington@sri.com</u>, or Missy Cochenour at <u>missy.cochenour@aemcorp.com</u>



The contents of this poster were developed under a grant from the U.S. Department of Education, #H373Z120002. However, those contents do not necessarily represent the policy of the U.S. Department of Education, and you should not assume endorsement by the Federal Government. Project Officers, Meredith Miceli and Richelle Davis.

#### References

- Buzhardt, J., Greenwood, C., Walker, D., Carta, J., Terry, B., & Garrett, M. (2010). A web-based tool to support data-based early intervention decision making. *Topics in Early Childhood Special Education*, 29(4), 201–213.
- Clements, K. M., Barfield, W. D., Ayadi, M. F., & Wilber, N. (2007). Preterm birth-associated cost of early intervention services: An analysis by gestational age. *Pediatrics*, 119(4), e866.
- Derrington, T. M. (2013). Development of the Drug-Exposed Infant Identification Algorithm (DEIIA) and its application to measuring Part C Early Intervention referral and eligibility in Massachusetts, 1998–2005. Maternal and Child Health Journal, 17(9), 1567–1575.
- Derrington, T. M., Peters, M. L., Mauzy, D., & Ruggiero, R. (2015). State spotlight: Data sharing. Alaska: Improving referrals of victims of maltreatment to the IDEA Part C program. Menlo Park, CA: SRI International.
- Derrington, T. M., Spiker, D., Hebbeler, K., & Diefendorf, M. (2013). IDEA Part C and Part B 619 state data systems: Current status and future priorities. Menlo Park, CA: SRI International.

Early Childhood Data Collaborative. (2014). 2013 State of states' Early Childhood Data Systems. Bethesda, MD: Author.

- Hojnoski, R. L., Gischlar, K. L., & Missall, K. N. (2009). Improving child outcomes with data-based decision making: Collecting data. Young Exceptional *Children, 12*(3)*,* 32–44.
- Infant & Toddler Coordinator's Association. (2015). 2015 ITCA tipping points Part C implementation: State challenges and responses. Indianapolis, IN: Author.
- Klute, M. M. (2013). Connecting research to practice: Viewing data utilization through the lens of professional development. *Early Education & Development, 24*(1), 63–67.
- Mandinach, E. B., & Gummerm E. S. (2013). A systemic view of implementing data literacy in educator preparation. *Educational Researcher*, 42(1), 30–37.
- Rodriguez, B., Cochenour, M., & Spiker, D. (2013, February). Current state analysis on FERPA and HIPPA challenges to accessing early intervention and early childhood special education data. Presented at the conference on Research Innovations in Early Intervention, San Diego, CA.
- Statewide Longitudinal Data Systems. (2013). Answering key questions with an early childhood data system, SLDS Issue Brief. Herndon, VA: Applied Engineering and Management. Retrieved from https://slds.grads360.org/#communities/pdc/documents/4798
- Statewide Longitudinal Data Systems. (2015). *Reports from the field related to data quality*. Herndon, VA: Applied Engineering and Management.
- Stein, A., Freel, K., Hanson, A. T., Pacchiano, D., & Eiland-Williford, B. (2013). The Educare Chicago Research-Program Partnership and Follow-Up Study: Using data on program graduates to enhance quality improvement efforts. *Early Education & Development, 24*(1), 19–41.
- The DaSy Center. (2014). DaSy data system glossary. Menlo Park, CA: SRI International. Retrieved from http://dasycenter.org/resources/dasy-data-systemglossary/
- The Early Childhood Technical Assistance Center. (2014). Analysis steps the Early Childhood Outcome Center used to generate national numbers for categories A-E and the summary statements and results for the 2012-13 data. Menlo Park, CA: SRI International.

Winer, A., Hebbeler, K., Nelson, R., Gundler, D., Cate, D., Hudson, L., Taylor, C., & Peters, M. L. (2015). Critical questions about early intervention and early childhood special education. Menlo Park, CA: SRI International.