In early childhood, a unique identifier (UID) is an identifier used to associate children, workforce, classes, program sites, and families with their respective data. These UIDs support the functionality of an early childhood integrated data system (ECIDS).[1] As data systems connect data across programs and sectors, a UID allows the relevant data to flow between systems. Without this component, tracking students across source data systems over time and space would be exceedingly difficult. A reliable UID is the foundation on which the ECIDS is built.

This brief will support ECIDS leaders in understanding UIDs; communicating the benefit of assigning UIDs in early childhood; understanding possible approaches to assigning UIDs; and identifying key considerations in carrying out the work. While this document focuses on early childhood, rather than P-20+, efforts to assign early childhood UIDs across programs and agencies must be understood in a full P-20+ context.[2]

What Entities Are Uniquely Identified in an ECIDS?

To ensure a strong foundation for development, an ECIDS will include the following identifiers:

- *Unique Child Identifier*: A single, unduplicated identifier that is assigned to and remains with a child throughout his or her participation in early childhood programs.
- *Unique Workforce Identifier*: A single, unduplicated identifier that is assigned to an individual member of the early childhood workforce consistently across his or her employment at any number of program sites.
- *Unique Class Identifier*: A single, unduplicated identifier that is assigned to individual classrooms within a site.
- *Unique Site Identifier:* A single, unduplicated identifier that is assigned to a school, center, or home-based early childhood site.
- *Unique Family Identifier*: A single, unduplicated identifier that is assigned to a family and remains with that family throughout their child's participation in early childhood programs.[3]

Each of these UIDs may be matched with another UID to link, for example, a child with his or her class, or with many other UIDs: that same child UID might be matched with multiple site and workforce UIDs to reflect real-world scenarios.

[1] For further information on ECIDSs, see *What is an Early Childhood Integrated Data System?* in the Public Domain Clearinghouse at *https://slds.grads360.org*.

[2] P-20+ refers to data from prekindergarten (early childhood), K12, and postsecondary through post-graduate education, along with workforce and other outcomes data (e.g., public assistance and corrections data). The specific agencies and other organizations that participate in the P-20+ initiative vary from state to state.

[3] For further information on early childhood data fundamentals, visit the Early Childhood Data Collaborative at *http://www.ecedata.org/the-10-ece-fundamentals/*.

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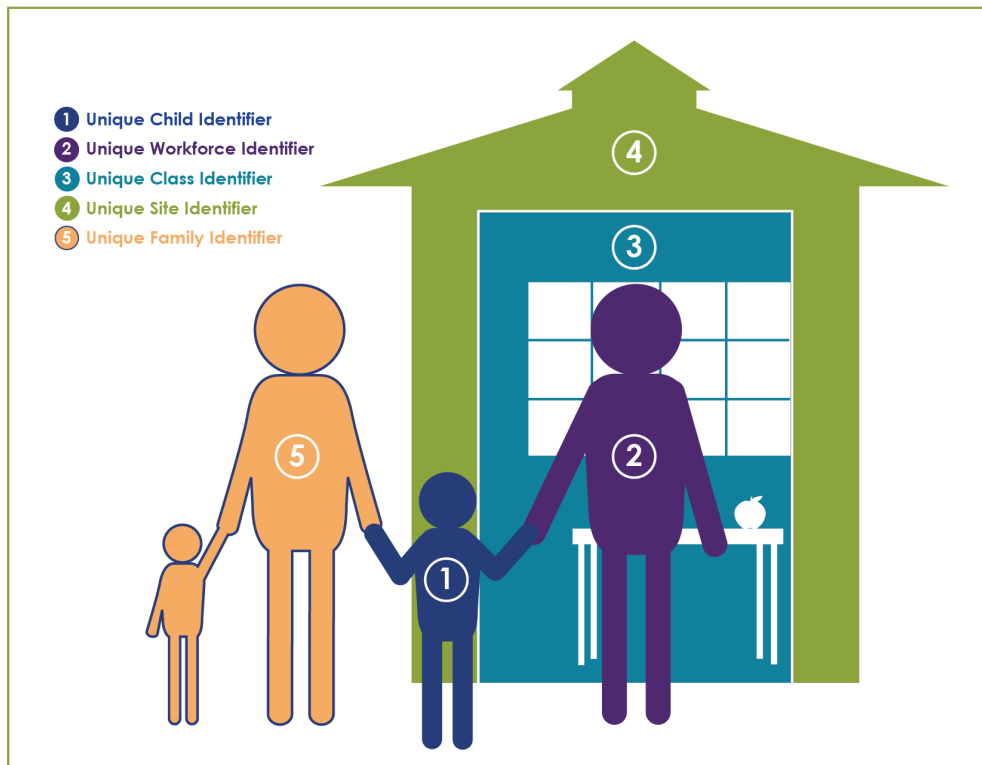Institute of Education Sciences

Figure 1. Representations of the most common early childhood identifiers

What Is the Benefit of Assigning UIDs in Early Childhood?

By establishing an efficient process for uniquely identifying children, members of the workforce, classes, program sites, and families in early childhood, states benefit from the ability to more efficiently and accurately manage and use information about those groups.

For example, for an Early Head Start program trying to communicate information about a child to an Early Intervention Part C Service provider, even the most basic information about the child can be misunderstood without a common vocabulary or standard. A common identifier allows for a quick resolution of the child's identity, facilitating communication between the program and service provider.
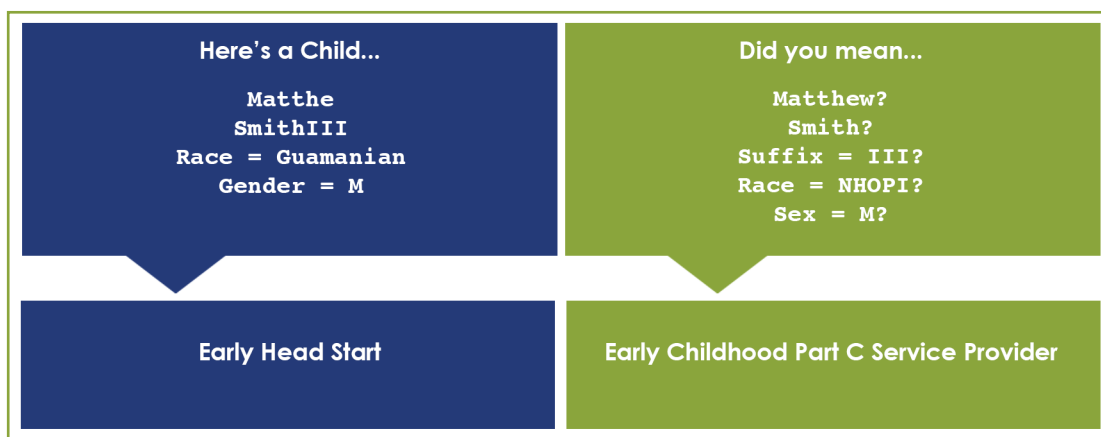

Figure 2. The challenge of communicating information across programs without UIDs

What Are the Options for Uniquely Identifying Children, Workforce, Classes, Sites, and Families?

A state's context will dictate its strategy for assigning UIDs. While a set of unique statewide early childhood identifiers, shared by all of a state's early childhood programs, is the most straightforward approach, it will not be feasible for most states. States may choose to take any of the following approaches:

- *Approach A: Unique Statewide Early Childhood Identifiers.* All of the state's early childhood programs use the same UIDs for child, workforce, site, class, and family information, and these UIDs are also used in the ECIDS. This approach can function in any ECIDS system design, but its implementation poses challenges. Because early childhood programs in many states already use their own set of identifiers, transitioning to the same UIDs statewide may not be politically or economically feasible. However, when possible, using the same UIDs across every early childhood system, including the ECIDS, enables a straightforward and efficient process for matching data between systems.

- *Approach B: Many Early Childhood Identifiers, Unique ECIDS Identifiers.* Each of the state's early childhood programs has its own child, workforce, site, class, and family identifiers in its data system. However, when data are incorporated into the ECIDS, the data are matched across programs and assigned and stored under a set of ECIDS UIDs. The UIDs assigned to the matched data may be stored as anonymous identifiers in order to ensure that no information within the system is immediately personally identifiable.

  This approach is typical of an ECIDS with a centralized system design, where all participating source systems copy their data to a single, centrally located data repository where they are organized, integrated, and stored using a common data standard. The approach allows individual programs to retain their own identifiers until data are incorporated into the ECIDS. At the same time, storing the matched data under ECIDS UIDs supports efficient and ongoing use of the linked information.

- *Approach C: Many Early Childhood Identifiers, Multiple ECIDS Identifiers.* Each of the state's early childhood data systems has its own set of child, workforce, site, class, and family identifiers in its data system. Within the ECIDS, each time a new dataset is requested, the data are matched using multiple demographic elements and assigned new ECIDS UIDs.

  This approach may be necessary for an ECIDS with a federated system design, where data are stored in separate program and agency databases and only temporarily linked to create a report or generate a dataset. Although this approach significantly limits the timeliness of data reporting and delivery, it supports a state's existing data-sharing culture and the policies of each agency. This approach also increases the confidentiality of the data, limiting its use to the purpose for which it is requested. Because new UIDs are assigned to each dataset, a user could not link together two datasets provided at different times for different purposes.

What Are the Key Considerations in Assigning UIDs in Early Childhood?

Future resources will delve more deeply into determining which approach is appropriate given a state's context. For now, in determining which approach to take, states should consider the following:

1. *What early childhood program identifiers are already established in the state?* Gather relevant information from each program to determine where it would be possible to build on existing infrastructure. Develop a list of key questions for each program and listen carefully to responses.

2. *What is the overall design of the state's ECIDS?* The approach to system design will impact the UID approach. Consider carefully what you hope to achieve with your model.

3. *How will the state's approach to the ECIDS UID impact its work—or future work—with P-20+?* Consider whether or not the state's approach to UIDs will enable linking with P-20+. If possible, consider building on assignment processes already established for K12. K12 processes can often serve as a model for early childhood.

4. *What privacy laws may impact the state's work*? Examine existing data privacy laws (e.g., FERPA and HIPAA) relevant to the programs targeted for inclusion in the ECIDS. This will require in-depth conversations with agency and program staff and with agency legal departments. Enlist their assistance making the ECIDS a reality.

5. *What is the plan to protect identifiable information*? Programs and agencies must ensure that child and staff UIDs remain secure and protected through secure authentication processes, with access granted only to appropriate individuals, such as parents and teachers. In general, access to data and reports is based on a person's level of oversight of children and operations.

6. *Is there a data governance process in place for handling near matches*? In order to effectively manage UIDs, states must establish data governance processes for how to reconcile near matches and establish new identifiers for child, workforce, site, class, and family information.

Additional Resources

Centralized vs. Federated: State Approaches to P-20W Data Systems
http://nces.ed.gov/programs/slds/pdf/federated_centralized_print.pdf

Getting Started: Incorporating Head Start Data in an SLDS
http://nces.ed.gov/programs/slds/pdf/headstart_GettingStarted.pdf

Identity Authentication Best Practices
http://ptac.ed.gov/sites/default/files/authentication.pdf

Identity Management Approaches: Protecting Access While Serving Multiple Stakeholders
http://nces.ed.gov/programs/slds/pdf/webinar_id-mgmt.pdf

Identity Matching at ERDC (Washington)
http://www.erdc.wa.gov/presentations/pdf/20130906_identity_matching.pdf

SLDS Spotlight: Arkansas's Approaches to Identity Management
http://nces.ed.gov/programs/slds/pdf/AR_spotlight.pdf

SLDS Technical Brief: Data Stewardship: Managing Personally Identifiable Information in Electronic Student Education Records
http://nces.ed.gov/pubs2011/2011602.pdf

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Available in the Public Domain Clearinghouse at https://slds.grads360.org