Integrated Early Childhood Data Systems

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Who am I?
What is an ECIDS?
The Utah Early Childhood Statewide Data Integration Project

The Utah Early Childhood Statewide Data Integration Project (ECDIP) is a project of the Early Care and Education Committee of Early Childhood Utah.
The mission of the Utah Early Childhood Statewide Data Integration Project is to facilitate data sharing and coordination among early childhood programs in Utah.

- There are a variety of early childhood programs and services available to families in Utah.
- These programs are usually funded and administered separately, and data from each program is maintained independently. This makes it difficult to have a complete understanding of the needs of families in order to collaborate and coordinate needed services.
The data integration project will facilitate the use of data to address five broad policy questions:

1. Are children birth to age 5 on track to succeed when they enter school?
2. Which children and families are and are not being served by which programs and services?
3. What characteristics of programs are associated with positive outcomes for which children?
4. What are the education and economic returns on early childhood investments?
5. How are data being used now and how will data be used in the future to inform policy and resource decisions?

Long-Term Goals
Utah’s ECIDS

What the ECIDS Does do….

- Contains unique identities across all data sources
- Provide aggregate, de-identified early childhood data
- Provide up-to-date data and standard reports

What the ECIDS Does Not do….

- Replace existing data systems
- Case Management
- Track PII for individual children
Utah’s ECIDS Data Sources

- Baby Watch Early Intervention, Utah Department of Health
- Division of Child & Family Services, Utah Department of Human Services
- Help Me Grow
- Office of Childcare, Utah Department of Workforce Services
- Office of Home Visiting, Utah Department of Health
- United Way of Central, Salt Lake, and Southern Utah
- Utah Head Start State Collaboration Office, Utah Department of Workforce Services
- Utah State Office of Education
- Vital Statistics
- Bear River Head Start
- Centro de la Familia de Utah
- Davis-Morgan-Summit
- DDI Vantage Early Head Start
- Kids on the Move, Inc.
- The Learning Center for Families
- Mountainland Head Start, Inc.
- Ogden-Weber CAP
- Rural Utah Child Development
- Salt Lake CAP
- Southern Utah University Head Start
- Utah Migrant Head Start
- Ute Indian Tribe Head Start
ECCS Overview

- EHDI
- EI Part-C
- VS -Birth Records
- Child Care
- Head Start
- EI Part-B
- Foster Care
- OHV
- Title 1 Preschool

EDOH

- Research Web Application
- EC Data System
- Admin Web Application

UDA

- UDA Database

ECCS Admin

Education Researchers
ECCS Overview

Real-time, Continuous Data Integration

EHDI
El Part-C
VS -Birth Records
Child Care
Head Start
El Part-B
Foster Care
OHV
Title I Preschool

UDOH
Research Web Application
EC Data System

Early-Childhood Researchers

UDA
UDA Database
Education Researchers
Overview of Architecture

Data Collection & Correlation
- Performance & Quality Reports

Longitudinal Data Management & Reporting
- Performance Reports
- Standard Reports
- Ad Hoc Reports

Data Sources
- Data Source Monitoring
- PII Data Translation
- Data Loading
- Record Matching
- Encrypted Non-PII Data Retrieval and Routing

dohMPI (Axon™)
- Decrypting Non-PII Data
- Non-PII Data Translation
- Data Loading
- Reporting

ECIDS

Utah Data Alliance
Data Sharing

- Data Sources
  - PII Data
  - Non-PII Data

- dohMPI (Axon™)

- ECIDS
<table>
<thead>
<tr>
<th>Funding Source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase One: State Advisory Council for Early Care and Education One Time Funding</td>
<td>$400,000</td>
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<tr>
<td>Monthly Maintenance Fee: Early Childhood Comprehensive Systems Grant</td>
<td>$3,000</td>
</tr>
<tr>
<td>Phase Two: Maternal Infant Early Childhood Home Visiting Grant</td>
<td>$60,000</td>
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</table>
Key Technical Challenges
• Identifying and selecting appropriate data from the sources at meaningful points in time
  • Understanding what data is available
  • For each data source, deciding what data to use for matching a person identity from one data source with identities from other data sources
• Assignment and management of unique internal identifiers

Key Technical Challenges
• Coalescing or merging data from multiple sources into a single snapshot
• Data authority
• Matching rates

Key Technical Challenges
Key Technical Challenges

• Monitor data sources for new or changed data and, when detected, extracts the necessary information to be exported.
• Updating reports when new data sources join
• Ensuring that matching software only has access to Personal Identifying Information (PII)

• Ensuring that ECCS only has access to de-identified data

**Key Technical Challenges**
• Creating a Data Sharing Agreement that all parties will sign
• Creating a system for new parties to join the project
• Ensuring Data Sharing Agreements meet FERPA and HIPPA requirements
• Ensure confidentiality of protected data

Key Technical Challenges
Reporting
**Example Report 1: Unduplicated Count**

Question: What is the current unduplicated count of children in Utah, ages 0-5?

![Graph and Data Table]

- **Total children ages 0 to 5:** 253,641
- **# receiving no services:** 202,994
- **# receiving services from 1 program:** 45,324
- **# receiving services from multiple programs:** 5,323

**Receiving services from 1 program**

<table>
<thead>
<tr>
<th>Program</th>
<th>Children</th>
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<tbody>
<tr>
<td>Help Me Grow</td>
<td>1,032</td>
</tr>
<tr>
<td>Office of Home Visiting</td>
<td>804</td>
</tr>
<tr>
<td>Early Intervention Part C</td>
<td>7,534</td>
</tr>
<tr>
<td>Early Intervention Part B</td>
<td>7,943</td>
</tr>
<tr>
<td>Title 1 Preschools</td>
<td>7,143</td>
</tr>
<tr>
<td>Head Start</td>
<td>9,825</td>
</tr>
<tr>
<td>Child Care</td>
<td>11,543</td>
</tr>
</tbody>
</table>
**Example Report 2: Multiple Services**

**Question:** How many of those children are receiving services from 1 program? By program?

<table>
<thead>
<tr>
<th>Children</th>
<th>HMG</th>
<th>OHV</th>
<th>EI-C</th>
<th>EI-B</th>
<th>T1</th>
<th>HS</th>
<th>CC</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMG</td>
<td>-</td>
<td>94</td>
<td>243</td>
<td>213</td>
<td>24</td>
<td>21</td>
<td>53</td>
</tr>
<tr>
<td>OHV</td>
<td>94</td>
<td>-</td>
<td>134</td>
<td>123</td>
<td>23</td>
<td>33</td>
<td>53</td>
</tr>
<tr>
<td>EI-C</td>
<td>243</td>
<td>134</td>
<td>-</td>
<td>1702</td>
<td>50</td>
<td>26</td>
<td>23</td>
</tr>
<tr>
<td>EI-B</td>
<td>213</td>
<td>123</td>
<td>1702</td>
<td>-</td>
<td>36</td>
<td>27</td>
<td>43</td>
</tr>
<tr>
<td>T1</td>
<td>24</td>
<td>23</td>
<td>50</td>
<td>36</td>
<td>-</td>
<td>1543</td>
<td>1325</td>
</tr>
<tr>
<td>HS</td>
<td>21</td>
<td>33</td>
<td>26</td>
<td>27</td>
<td>1543</td>
<td>-</td>
<td>2241</td>
</tr>
<tr>
<td>CC</td>
<td>53</td>
<td>53</td>
<td>23</td>
<td>43</td>
<td>1325</td>
<td>2241</td>
<td>-</td>
</tr>
</tbody>
</table>
EXAMPLE REPORT 3: SEQUENCES

**Question:** How children follow a certain sequence of services, like first Help Me Grow, then Office of Home Visiting, and then Early Intervention?

|----------------------------------------------------------|-------------------------------|

Children

*Count of children between 0 – 5 years old during reporting period by program sequence, where *a sequences* can a starting of service, following some time later by the starting off another service. The starting of the services do not have occur with the reporting period.*

- HMG → OHV: 87
- HMG → HS: 12
- HMG → EI-C: 180
- HMG → OHV → EI-C: 65
- HMG → OHV → EI-C → EI-B: 57
- HMG → OHV → EI-C → EI-B → T1: 8

example data
ASQ-3 Sequences of Children

## Children

*Count of children between 0 – 5 and half years old during the reporting period by ASQ-3 sequence, where a sequence means the ASQ-3 form(s) used. The beginning ASQ-3 may have occurred outside of the reporting period.*

<table>
<thead>
<tr>
<th>ASQ-3 Form Sequence</th>
<th>Count</th>
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<tbody>
<tr>
<td>2 month</td>
<td>87</td>
</tr>
<tr>
<td>2 month → 4 month</td>
<td>65</td>
</tr>
<tr>
<td>2 month → 4 month → 6 month → 8 month</td>
<td>57</td>
</tr>
<tr>
<td>2 month → 4 month → 6 month → 8 month → 10 month → 4 month</td>
<td>55</td>
</tr>
<tr>
<td>2 month → 4 month → 6 month → 8 month → 10 month → 4 month → 6 month</td>
<td>35</td>
</tr>
<tr>
<td>2 month → 4 month → 6 month → 8 month → 10 month → 12 month → 14 month → 16 month</td>
<td>21</td>
</tr>
<tr>
<td>2 month → 4 month → 6 month → 8 month → 10 month → 12 month → 14 month → 16 month → 18 month</td>
<td>16</td>
</tr>
<tr>
<td>2 month → 4 month → 6 month → 8 month → 10 month → 12 month → 14 month → 16 month → 18 month → 20 month</td>
<td>14</td>
</tr>
<tr>
<td>2 month → 4 month → 6 month → 8 month → 10 month → 12 month → 14 month → 16 month → 18 month → 20 month → 22 month</td>
<td>11</td>
</tr>
<tr>
<td>2 month → 4 month → 6 month → 8 month → 10 month → 12 month → 14 month → 16 month → 18 month → 20 month → 22 month → 24 month</td>
<td>9</td>
</tr>
<tr>
<td>2 month → 4 month → 6 month → 8 month → 10 month → 12 month → 14 month → 16 month → 18 month → 20 month → 22 month → 24 month → 27 month</td>
<td>8</td>
</tr>
<tr>
<td>2 month → 4 month → 6 month → 8 month → 10 month → 12 month → 14 month → 16 month → 18 month → 20 month → 22 month → 24 month → 27 month → 30 month</td>
<td>7</td>
</tr>
<tr>
<td>2 month → 4 month → 6 month → 8 month → 10 month → 12 month → 14 month → 16 month → 18 month → 20 month → 22 month → 24 month → 27 month → 30 month → 33 month</td>
<td>6</td>
</tr>
<tr>
<td>2 month → 4 month → 6 month → 8 month → 10 month → 12 month → 14 month → 16 month → 18 month → 20 month → 22 month → 24 month → 27 month → 30 month → 33 month → 36 month</td>
<td>5</td>
</tr>
</tbody>
</table>
Children

*Count of children between 0 – 5 and a half years old during the reporting period by number of ASQ-3 screenings based on American Academy of Pediatrics (AAP) recommended ASQ-3 screening timeframes.*

<table>
<thead>
<tr>
<th>Number of ASQ-3 Screenings</th>
<th>1 Count ASQ-3</th>
<th>2 Count ASQ-3</th>
<th>3 Count ASQ-3</th>
<th>4 Count ASQ-3</th>
<th>5 Count ASQ-3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td># of ASQ-3 up until 9 month ASQ-3</td>
<td>100</td>
<td>75</td>
<td>60</td>
<td>30</td>
<td>20</td>
<td>285</td>
</tr>
<tr>
<td># of ASQ-3 between 10 to 18 month ASQ-3</td>
<td>35</td>
<td>51</td>
<td>22</td>
<td>16</td>
<td>10</td>
<td>134</td>
</tr>
<tr>
<td># of ASQ-3 between 20 to 24 month ASQ-3</td>
<td>23</td>
<td>15</td>
<td>10</td>
<td>N/A</td>
<td>N/A</td>
<td>48</td>
</tr>
<tr>
<td># of ASQ-3 between 27 to 30 month ASQ-3</td>
<td>13</td>
<td>3</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>16</td>
</tr>
<tr>
<td>Totals</td>
<td><strong>171</strong></td>
<td><strong>144</strong></td>
<td><strong>92</strong></td>
<td><strong>46</strong></td>
<td><strong>30</strong></td>
<td><strong>483</strong></td>
</tr>
</tbody>
</table>
Children

*Count of children between 0 – 5 and a half years old during the reporting period by ASQ-3 interval, ASQ-3 Domain (will include communication, fine motor, gross motor, problem solving and personal social) and ASQ-3 score category numbers.*

<table>
<thead>
<tr>
<th>ASQ-3 Interval</th>
<th>ASQ-3 Domains</th>
<th>ASQ-3 Above Count</th>
<th>ASQ-3 Monitoring Count</th>
<th>ASQ-3 Below Count</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 months</td>
<td>Communication</td>
<td>30</td>
<td>25</td>
<td>20</td>
<td>75</td>
</tr>
<tr>
<td>4 months</td>
<td>Communication</td>
<td>29</td>
<td>21</td>
<td>16</td>
<td>66</td>
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<tr>
<td>6 months</td>
<td>Communication</td>
<td>24</td>
<td>23</td>
<td>12</td>
<td>59</td>
</tr>
<tr>
<td>8 months</td>
<td>Communication</td>
<td>22</td>
<td>15</td>
<td>10</td>
<td>47</td>
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<tr>
<td>9 months</td>
<td>Communication</td>
<td>18</td>
<td>12</td>
<td>8</td>
<td>38</td>
</tr>
<tr>
<td>10 months</td>
<td>Communication</td>
<td>15</td>
<td>12</td>
<td>9</td>
<td>36</td>
</tr>
<tr>
<td>12 months</td>
<td>Communication</td>
<td>13</td>
<td>12</td>
<td>8</td>
<td>33</td>
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<tr>
<td>14 months</td>
<td>Communication</td>
<td>12</td>
<td>10</td>
<td>7</td>
<td>29</td>
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<tr>
<td>16 months</td>
<td>Communication</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td>21</td>
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<tr>
<td>18 months</td>
<td>Communication</td>
<td>8</td>
<td>4</td>
<td>3</td>
<td>15</td>
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<tr>
<td>20 months</td>
<td>Communication</td>
<td>3</td>
<td>9</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>22 months</td>
<td>Communication</td>
<td>5</td>
<td>10</td>
<td>3</td>
<td>18</td>
</tr>
<tr>
<td>24 months</td>
<td>Communication</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>27 months</td>
<td>Communication</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>30 months</td>
<td>Communication</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>33 months</td>
<td>Communication</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>4</td>
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<tr>
<td>36 months</td>
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<td>2</td>
<td>1</td>
<td>3</td>
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<td>1</td>
<td>1</td>
</tr>
<tr>
<td>60 months</td>
<td>Communication</td>
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<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Uncoded</td>
<td>Communication</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Overall ASQ-3 Domain by Score Category
Phase 2 Development
Dashboards will sort by:

- Zip Code
- School District
- County
- Legislative District
- IGP Areas
New Data Sources

- WIC
- Medicaid
- Intergenerational Poverty
- Birth Defects
- Marriage/Divorce Records
- Neonatal Follow-up
- Newborn Hearing
- Newborn Blood Screen
- All Payer Claims
- Developmental Screening
ECIDS Next Steps

- New Standard Reports
- Assign the Student School Identification Number (SSID)
- Data Governance Manual
- Ad Hoc Capabilities
Questions