Utilizing Administrative Data Outside of Early Care and Education to Address ECE Policy Questions

CCEEPRC
April 18, 2019
Child Care Administrative Data Analysis Center

• CCADAC is supported through the Office of Planning, Research and Evaluation (OPRE) in the Administration for Children and Families (ACF), with funds set aside for research in the Child Care and Development Block Grant Act and managed through the Child Care and Early Education Policy Analysis (CCEEPRA) contract with Child Trends.
  - Ivelisse Martinez-Beck, CCEEPRA Project Officer, OPRE

• The primary purpose of the CCADAC is to support the use of administrative data to address policy-relevant early care and education research questions for state child care administrators and their research partners.
  - Kathleen Dwyer, and Jenessa Malin, OPRE leads
• Administrative Data
  • Information about children, families, or service providers that is collected and maintained as part of regular program administration

• Integrated Data System
  • A system that combines administrative data across multiple programs and over time
Panelists

Katherine Barghaus
Executive Director, Penn Child Research Center and Senior Researcher, Actionable Intelligence for Social Policy at the University of Pennsylvania

Roland Estrella
Senior Analyst and Research Contract Manager, Department of Health Outcomes and Policy, University of Florida

Kelly Maxwell
Co-Director of Early Childhood Research, Child Trends
CCADAC Resources


1. Developing Collaborative Partnerships with State Agencies
2. Determining the Feasibility of Using Administrative Data
3. Considerations in Preparing to Analyze Administrative Data
5. Opportunities through State Agency Research Partnerships for Using Administrative Data to Support Early Care and Education
6. Guidelines for Developing Data Sharing Agreements to Use State Administrative Data for Early Care and Education Research
Examples of Administrative Data Outside of ECE

Health
- Food and Nutrition Services
- Children’s Health Insurance Program (CHIP) and Medicaid

Child Welfare, Public Assistance, and Human Services
- Temporary Assistance for Needy Families (TANF)
- Home Visiting
- Homelessness

Employment
- Unemployment Insurance
Examples of Research Questions

• What is the availability of high-quality ECE programs in counties that have high CHIP enrollments?

• Are there differences in the rates of child abuse and neglect incidents between subsidy-receiving children who attend licensed care and license-exempt care?

• Does parental employment stabilize after receiving child care subsidies?
FLORIDA EARLY CHILDHOOD AND HEALTH DATA REPOSITORY

Improving Services with Birth to Five Data

Presented by The University of Florida Family Data Center and The University of Florida Anita Zucker Center for Excellence in Early Childhood Studies
PRESENTATION OUTLINE

- **Building an infrastructure for restricted data**
  Develop and architect data infrastructure that meets Federal Information Security standards

- **Structuring communication, partnerships, and data sharing agreements**
  Meet regulatory requirements individually by agency (data owner organization), and collectively as a central repository of shared data

- **Presenting and disseminating data**
  - Implement a data integration framework
  - Use web technology to present information that is actionable to stakeholders at all levels (local, regional, state, national)
    - Integrated data use case: The Florida Index of Child Care Access (FLICCA)
    - Integrated data use case: Florida Medicaid Maternal and Child Health Status
Building an infrastructure for restricted data

Federal Information Security Modernization Act (FISMA) Implementation Project
https://csrc.nist.gov/projects/risk-management

Key Standards and Guidelines

- FIPS Publication 199 (Security Categorization)
- FIPS Publication 200 (Minimum Security Controls)
- NIST Special Publication 800-18 (Security Planning)
- NIST Special Publication 800-30 (Risk Assessment)
- NIST Special Publication 800-37 (System Risk Management Framework)
- NIST Special Publication 800-39 (Enterprise-Wide Risk Management)
- NIST Special Publication 800-53 (Recommended Security Controls)
- NIST Special Publication 800-53A (Security Control Assessment)
- NIST Special Publication 800-59 (National Security Systems)
- NIST Special Publication 800-60 (Security Category Mapping)

Many other FIPS and NIST Special Publications provide security standards and guidance supporting the FISMA legislation...
Presenting and disseminating data

Data Integration Framework

Data Sources

- Pregnancy
  - Conception
  - Birth

Indicators

- Infancy
  - First Year of Life
- Early Childhood
  - Sixth Year of Life

(2000 – 2018)
Maternal and Child Health

- Medicaid Enrollment: Sociodemographic, Eligibility, Coverage
- Hospitalizations: Diagnoses, Procedures, Charges
- Paid Claims and Encounters: Providers, Diagnoses, Procedures, Billing, Reimbursement, Prescription Drugs
- Specialized Medical Services: Neonatal Intensive Care, High Risk Obstetric

Vital Records

- Birth Anomalies: Outcome Surveillance
- Mental Health: Outcome Surveillance
- Child Development: Developmental delay or disability
- Social Services: Child Abuse Investigations, Home Placement
- Healthy Start Screening: Poor birth, health, and developmental outcomes

Early Childhood Education

- Child Care Providers: Capacity, Enrollment, Accreditation
- Children with Disabilities: Education services
- Homeless Children: Education services
- Subsidized Child Care: Early Head Start and Head Start

Institute for Child Health Policy
UNIVERSITY OF FLORIDA

Implementation Science  Biomedical Informatics  Comparative Effectiveness Research  Population Health
Maternal and Child Health

Medicaid Enrollment
Sociodemographic, Eligibility, Coverage
- Women
- Children

Hospitalizations
Diagnoses, Procedures, Charges
- Inpatient Visits
- Outpatient Visits
- Emergency Room Visits

Paid Claims and Encounters
Providers, Diagnoses, Procedures, Billing, Reimbursement, Prescription Drugs
- Female Claims and encounters
- Children Claims and encounters

Specialized Medical Services
Neonatal Intensive Care, High Risk Obstetric
- Neonatal Intensive Care Patients
- High Risk Obstetrical patients

Vital Records
- Live Births
- Fetal Deaths
- Infant Deaths
- Mothers
- Deaths to Women of Reproductive Age

Birth Anomalies
Outcome Surveillance
- 119 Major Congenital Birth Anomalies
- 401 Non-Major Birth Anomalies

Mental Health
Outcome Surveillance
- 9 Psychotic disorders
- 16 Non-Psychotic mental disorders
- 3 Mental Retardation disorders

Child Development
Developmental delay or disability
Florida’s Early Intervention Program Participants

Social Services
Child Abuse Investigations, Home Placement
Child Maltreatment investigations
Home Placement Services

Healthy Start Screening
Poor birth, health, and developmental outcomes
- Prenatal Risk Screens
- Infant Risk Screens

Early Childhood Education

Child Care Providers
Capacity, Enrollment, Accreditation
- Capacity, Quality, ages served, SR status, VPK status.

Children with Disabilities
Education services
- Individualized education plan

Homeless Children
Education services
- Enrollment, Housing status

Subsidized Child Care
Early Head Start and Head Start
- Enrollment

Florida’s Early Intervention Program Participants

Institution for Child Health Policy
UNIVERSITY OF FLORIDA
HEALTH, EDUCATION, AND LIFE COURSE DEVELOPMENT

Child Health and Education Service Profiles → Measures of access, use & quality → Social Determinants → Differential Outcomes

Presenting and disseminating data

Data Integration Framework

Institute for Child Health Policy UNIVERSITY of FLORIDA

Implementation Science Biomedical Informatics Comparative Effectiveness Research Population Health
Integrated Data Use case: The Florida Index of Child Care Access (FLICCA)
Integrated data use case: Florida Medicaid Maternal and Child Health Status Indicators

Florida Medicaid Maternal & Child Health Status Indicators | 2012-2016 Birth Cohorts

Table 40B: Number and Percent in 2016 of Births to Infants Diagnosed with a Developmental Delay or Disability by Race/Ethnicity by Medicaid Status/Subgroup

<table>
<thead>
<tr>
<th>Medicaid Status</th>
<th>Subgroup</th>
<th>Caucasian</th>
<th>African-American</th>
<th>Hispanic</th>
<th>Asian</th>
<th>Native American</th>
<th>Other</th>
<th>Grand Total</th>
</tr>
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<td>Number</td>
<td>Number</td>
<td>Number</td>
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<td></td>
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<td>Rate</td>
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<td>Rate</td>
<td>Rate</td>
</tr>
<tr>
<td>Non-Medicaid</td>
<td></td>
<td>696</td>
<td>119</td>
<td>118</td>
<td>175</td>
<td>68</td>
<td>19</td>
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<td>1.3%</td>
<td>1.8%</td>
<td>1.8%</td>
<td>1.3%</td>
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<td>1.1%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Total</td>
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<td>773</td>
<td>119</td>
<td>118</td>
<td>175</td>
<td>68</td>
<td>19</td>
<td>22</td>
</tr>
<tr>
<td></td>
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<td>1.3%</td>
<td>1.8%</td>
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<td>1.3%</td>
<td>1.1%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Medically Needed</td>
<td>SOBRA</td>
<td>402</td>
<td>212</td>
<td>176</td>
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<td>14</td>
<td>14</td>
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<td>1.2%</td>
<td>1.2%</td>
<td>1.3%</td>
<td>0.9%</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.7%</td>
</tr>
<tr>
<td></td>
<td>Non-SOBRA</td>
<td>109</td>
<td>127</td>
<td>156</td>
<td>24</td>
<td>21</td>
<td>21</td>
<td>11</td>
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<td>1.3%</td>
<td>1.1%</td>
<td>1.3%</td>
<td>0.9%</td>
<td>1.1%</td>
<td>1.1%</td>
<td>1.1%</td>
</tr>
<tr>
<td></td>
<td>CMS High Risk OB</td>
<td>55</td>
<td>97</td>
<td>48</td>
<td>131</td>
<td>43</td>
<td>28</td>
<td>283</td>
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<tr>
<td></td>
<td></td>
<td>4.6%</td>
<td>4.8%</td>
<td>1.3%</td>
<td>1.1%</td>
<td>1.1%</td>
<td>1.1%</td>
<td>4.8%</td>
</tr>
<tr>
<td></td>
<td>Medically Needy</td>
<td>7</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
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<tr>
<td></td>
<td></td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.3%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.2%</td>
</tr>
<tr>
<td></td>
<td>Medicaid SSI</td>
<td>29</td>
<td>14</td>
<td>22</td>
<td>15</td>
<td>17</td>
<td>17</td>
<td>56</td>
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<td>3.8%</td>
<td>2.1%</td>
<td>2.3%</td>
<td>2.9%</td>
<td>2.1%</td>
<td>2.1%</td>
<td>3.8%</td>
</tr>
<tr>
<td></td>
<td>Ineligible Non-Citizen</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td></td>
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<td>0.0%</td>
<td>0.0%</td>
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<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>Medicaid</td>
<td>663</td>
<td>565</td>
<td>175</td>
<td>76</td>
<td>58</td>
<td>58</td>
<td>663</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.4%</td>
<td>1.7%</td>
<td>1.3%</td>
<td>1.0%</td>
<td>1.3%</td>
<td>1.3%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td>1,336</td>
<td>684</td>
<td>1,069</td>
<td>51</td>
<td>64</td>
<td>64</td>
<td>1,336</td>
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<tr>
<td></td>
<td></td>
<td>1.4%</td>
<td>1.8%</td>
<td>1.5%</td>
<td>0.4%</td>
<td>1.1%</td>
<td>1.1%</td>
<td>1.4%</td>
</tr>
</tbody>
</table>

Notes: Caution must be exercised in interpreting high percentages where denominators are small. Percent/Rate is the percent of the indicator’s births for each Medicaid Status/Subgroup and Race/Ethnicity category (numerator) from the total births for that Medicaid Status/Subgroup and Race/Ethnicity category (denominator - Table 33B). Results are suppressed for non-zero cells (blank cells in the table where the case count is under 5). The numbers in the Grand Total column can vary from their respective Medicaid Status/Subgroup totals on table 40A because the empty cells reflect the data suppression and because this table further stratifies the indicator by Race/Ethnicity within each Medicaid Status/Subgroup (see Appendix 1 - Methodology, Data Suppression).

Figure 40A: Percent in 2016 of Births to Infants Diagnosed with a Developmental Delay or Disability by Race/Ethnicity by Medicaid Status

Figure 40B: Percent in 2015 of Births to Infants Diagnosed with a Developmental Delay or Disability by Race/Ethnicity by Medicaid Status

Notes: Caution must be exercised in interpreting high percentages where denominators are small. Results are suppressed for non-zero cells (blank cells in the table where the case count is under 5).
### Integrated data use case: Florida Medicaid Maternal and Child Health Status Indicators

#### Table 40F: Mean Infant Birth Inpatient Hospitalization Charges and Length of Stay for Infants Diagnosed with a Developmental Delay or Disability by Medicaid Status/Subgroup by Year of Birth

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Medicaid</td>
<td>94%</td>
<td>30</td>
<td>$181.9K</td>
<td>92%</td>
<td>27</td>
<td>$183.9K</td>
</tr>
<tr>
<td>Temporarily Eligible*</td>
<td>9%</td>
<td>9</td>
<td>$31.9K</td>
<td>92%</td>
<td>7</td>
<td>$37.9K</td>
</tr>
<tr>
<td>Total</td>
<td>94%</td>
<td>29</td>
<td>$179.2K</td>
<td>92%</td>
<td>27</td>
<td>$180.2K</td>
</tr>
<tr>
<td>SCBRA</td>
<td>24%</td>
<td>13</td>
<td>$35.1K</td>
<td>92%</td>
<td>12</td>
<td>$36.1K</td>
</tr>
<tr>
<td>Non-SOBRA</td>
<td>24%</td>
<td>13</td>
<td>$35.1K</td>
<td>92%</td>
<td>12</td>
<td>$36.1K</td>
</tr>
<tr>
<td>CMS High Risk OB</td>
<td>8%</td>
<td>50</td>
<td>$248.6K</td>
<td>84%</td>
<td>45</td>
<td>$311.4K</td>
</tr>
<tr>
<td>Medically Needy</td>
<td>9%</td>
<td>50</td>
<td>$248.6K</td>
<td>84%</td>
<td>45</td>
<td>$311.4K</td>
</tr>
<tr>
<td>Medicaid SSI</td>
<td>7%</td>
<td>32</td>
<td>$123.6K</td>
<td>92%</td>
<td>23</td>
<td>$134.6K</td>
</tr>
<tr>
<td>Ineligible Non-Citizen</td>
<td>8%</td>
<td>9</td>
<td>$31.9K</td>
<td>92%</td>
<td>7</td>
<td>$37.9K</td>
</tr>
<tr>
<td>Mccs &lt; 8 Days or No PNC</td>
<td>8%</td>
<td>9</td>
<td>$31.9K</td>
<td>92%</td>
<td>7</td>
<td>$37.9K</td>
</tr>
<tr>
<td>Total</td>
<td>92%</td>
<td>33</td>
<td>$184.9K</td>
<td>90%</td>
<td>31</td>
<td>$193.9K</td>
</tr>
</tbody>
</table>

**Notes:**
- Birth Percent Linked refers to the proportion of all of the indicator's births that were linked to their birth inpatient hospitalization discharge record.
- Caution must be exercised in interpreting high percentages where denominators are small.

#### Table 40H: Mean Infant Medicaid Hospital (birth) Reimbursement amount* for Infants Diagnosed with a Developmental Delay or Disability by Medicaid Status/Subgroup by Year of Birth

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Percent Linked</th>
<th>Mean Total Claims/Encounters Amount</th>
<th>Percent Linked</th>
<th>Mean Total Claims/Encounters Amount</th>
<th>Percent Linked</th>
<th>Mean Total Claims/Encounters Amount</th>
<th>Percent Linked</th>
<th>Mean Total Claims/Encounters Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOBRA</td>
<td>88%</td>
<td>$54.2K</td>
<td>90%</td>
<td>$62.2K</td>
<td>90%</td>
<td>$62.2K</td>
<td>90%</td>
<td>$62.2K</td>
</tr>
<tr>
<td>Non-SOBRA</td>
<td>86%</td>
<td>$53.1K</td>
<td>90%</td>
<td>$55.9K</td>
<td>90%</td>
<td>$55.9K</td>
<td>90%</td>
<td>$55.9K</td>
</tr>
<tr>
<td>CMS High Risk OB</td>
<td>86%</td>
<td>$101.5K</td>
<td>90%</td>
<td>$109.0K</td>
<td>90%</td>
<td>$109.0K</td>
<td>90%</td>
<td>$109.0K</td>
</tr>
<tr>
<td>Medically Needy</td>
<td>86%</td>
<td>$56.3K</td>
<td>63%</td>
<td>$75.3K</td>
<td>80%</td>
<td>$102.7K</td>
<td>80%</td>
<td>$102.7K</td>
</tr>
<tr>
<td>Medicaid SSI</td>
<td>84%</td>
<td>$58.9K</td>
<td>85%</td>
<td>$57.8K</td>
<td>84%</td>
<td>$57.8K</td>
<td>84%</td>
<td>$57.8K</td>
</tr>
<tr>
<td>Ineligible Non-Citizen</td>
<td>96%</td>
<td>$51.4K</td>
<td>95%</td>
<td>$54.9K</td>
<td>95%</td>
<td>$54.9K</td>
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<td>Mccs &lt; 8 Days or No PNC</td>
<td>85%</td>
<td>$74.9K</td>
<td>90%</td>
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<td>89%</td>
<td>$64.3K</td>
<td>91%</td>
<td>$68.2K</td>
<td>91%</td>
<td>$68.2K</td>
<td>91%</td>
<td>$68.2K</td>
</tr>
</tbody>
</table>

**Notes:**
- Percent Linked refers to the proportion of all of the indicator’s births that were linked to both, the Birth Inpatient Hospitalization Discharge Record and at least one Infant Medicaid Claims record with a date of service within the birth hospitalization length of stay or at least one Infant MMA Special Feed Encounter record with a date of service within the birth hospitalization length of stay.
- Caution must be exercised in interpreting high percentages where denominators are small.

*Medicaid reimbursement amount includes the amount for both FTS claims and MMA Encounters.
CONTACT

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The Application of Integrated Data to Expand Access to Quality Pre-K

Katherine Barghaus, PhD
Executive Director, Penn Child Research Center
Senior Researcher, Actionable Intelligence for Social Policy
PRE-K EXPANSION IN PHILADELPHIA

- Mayor’s priority issue
- Budget - $60 million annually
RESEARCH QUESTIONS

1. What is the geographic distribution of 3- and 4-year old children with multiple early risks?

2. What is the geographic distribution of high-quality pre-k slots?

3. Where is the greatest need for high-quality pre-k slots?
Institutionalized School Readiness Data Model Built from Integrated Data

Ready-to-use, longitudinal, population-based data model consisting of relevant data elements that are reviewed for quality and related to important outcomes.
DATA SOURCES: EARLY RISKS

Institutionalized School Readiness Data Model Built from Integrated Data

- **Vital Statistics**
  - Inadequate prenatal care
  - Low maternal education
  - Teen mother
  - Low birth wt./preterm

- **Public Health**
  - Lead exposure

- **Child Welfare**
  - Child maltreatment

- **Homeless Shelters**
  - Shelter stays

- **School District**

Each risk *uniquely* related to poor reading, math, & social skills

With each *additional* risk...

- 30-50% less likely to be proficient in math or reading
- 30-40% less likely to be engaged in learning

Penn Child Research Center 2019
DATA SOURCES: HIGH-QUALITY PRE-K

State data on providers including geography, capacity, and quality

Penn Child Research Center 2019
FINDINGS – RISKS

Number of risks

<table>
<thead>
<tr>
<th>Number of risks</th>
<th>Percentage of 3- and 4-yr-olds</th>
<th>Count</th>
</tr>
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<tbody>
<tr>
<td>0</td>
<td>45%</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>34%</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>3 or more</td>
<td>7%</td>
<td>9,563</td>
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</table>

n = 44,724 children
FINDINGS – RISKS
FINDINGS – QUALITY PREK
FINDINGS – PREK DESERTS

High-risk/Low-supply neighborhoods
- High-risk: Children with 2+ risks above the citywide average
- Low supply: Availability of high-quality slots below citywide average

Penn Child Research Center 2019
<table>
<thead>
<tr>
<th>Planning</th>
<th>Information used to inform process for selecting providers applying for pre-k expansion funding</th>
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<tbody>
<tr>
<td>Practice</td>
<td>Information used for outreach efforts in areas with higher concentrations of risks to help ensure children who could benefit most would fill new Pre-K seats</td>
</tr>
</tbody>
</table>
QUESTIONS & COMMENTS
Link to join the discussion forum on Basecamp:
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