Collaborating To Improve Educational Outcomes for Foster Youth: Linking Anonymous Education and Child Welfare Data Sets in California

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Overview

UCB/Cal-PASS pilot project

- Overview and challenges
- Selected outcomes
- Lessons learned
- Moving forward
California Ready to Succeed Pilot Project
Of the over 400,000 children in foster care in the United States \(^1\) 62,000 (15\%) reside in California—63\% school aged. \(^2\)

For many of these youth, abuse- neglect, and foster care placement compromises their ability to learn.

**Compared to their peers, foster students are more likely to:**
- have lower achievement test scores \(^3,4\)
- perform below grade level \(^5,6\)
- twice as likely to leave high school before completion \(^7,8\)
Educationally at-risk

- Although many entities identify foster youth as an educationally vulnerable population, this distinction does not exist within federal law.

- No Child Left Behind, Title 1 (2001): groups at-risk for academic failure include certain ethnicities (e.g. Black, Hispanic), low socio-economic status, English Language Learners, and students with disabilities (i.e. special education status)
Overlap

- **Poor**—Children in poor communities are 22 times more likely to be referred for maltreatment. [9]

- **Non-White**—Certain ethnicities are disproportionately brought to the attention of child welfare agencies. [10] In California, black youth are 2.9 times more likely to be referred for maltreatment and 4.2 times more likely to enter foster care. [11]

- **Special Education**—Approximately 30-50% (compared to 10-12% of student population) of foster youth receive special education services. [12]

- **Poor quality schools**—While less than 1% of student population, concentrated in the worst 5-25% performing schools. [13]
California Data Challenges: Child Welfare

- **Child Welfare System/Case Management System (CWS/CMS)** - California statewide child welfare data base
  - Educational data for youth with an open case
  - Data are incomplete
  - Once youth exit, no information recorded
California Data Challenges: Education

- No operating statewide inter-segmental data system
- Each school keeps own student data
- Confusion over who holds the educational rights for a foster youth
- Local jurisdictions vary with respect to information sharing and interpretation of confidentiality laws (FERPA)

- Federal Education Rights and Privacy Act (FERPA): limits the exchange for information between education and child welfare entities.
Relevant Policy

- At the federal and state levels, both child welfare and education institutions have specific policy directives to address the education needs of foster youth

  - No Child Left Behind (2001)
  - Child and Family Services Review (CFSR)
  - Chafee Foster Care Independence Program (CFCIP)
Collaborative Partners

- **U.C. Berkeley, Center for Social Service Research (CSSR) & California Department of Social Services (CDSS)**
  - Conducts research, policy analysis, program planning, and evaluation directed toward improving public social services
  - Interagency agreement with CDSS receives quarterly extracts from CWS/CMS and reports findings on Child Welfare Dynamic Reporting System

  [http://cssr.berkeley.edu/ucb_childwelfare/](http://cssr.berkeley.edu/ucb_childwelfare/)

- **California Partnership for Achieving Student Success (Cal-PASS)**
  - The only system that collects data about student success and transition from every segment of education in California
  - Supports inter-segmental faculty collaboration and data use


- **Stuart Foundation**
  - Dedicated to the protection, education and development of children and youth

Pilot Project

- In 2009, the project team initiated plans to link data from CWS/CMS and Cal-PASS.
  - Four California counties
  - Over 150 secondary and post-secondary districts

- Goals:
  - mechanics
  - political/actual permissions
  - analyses
Center for Social Services Research (CSSR) has a Memorandum of Understanding (MOU) with CDSS to utilize data from CWS/CMS

CSSR is an entity of the University of California at Berkeley (UCB)

2 Internal Review Board (IRB) protocols submitted
Cal-PASS is a voluntary initiative, where education institutions agree to upload data into the Cal-PASS databank and designate data use.

Over 150 separate secondary and post-secondary districts received a request to participate. An active consent (response) was required.

The request occurred at the same time the state of California was grappling with a fiscal crisis. Several of the districts required additional IRB protocols.

Ultimately, 91 districts agreed to participate.
A couple of challenges…..

- Overlooked permission from an important stakeholder.

- In late 2009, the federal government released reinterpreted FERPA guidelines, limiting the ability to merge education data.

- The original plan was to upload the child welfare data to the Cal-PASS secure server where it would be linked to education data.
Data matching
Match statistics

Overall, 42,485 unique school aged foster youth were matched to educational data from the 3 school segments (47%)
Selected Findings from the Pilot Project
Cross-sectional analyses

Overall: 4,186 unique youth with a history of foster care placement

2 primary sample types:

1. Foster youth matched to comparison students by:
   - Age / grade level
   - School year
   - Gender
   - Ethnicity
   - ELL Status
   - Primary Disability
   - Free/reduced lunch
   - School district/school*
   *or district and school rank

2. Foster youth only
Independent Variables

Demographic/Education Risk Factors
- Gender
- Ethnicity
- ELL
- Disability
- Free/reduced school lunch
- School quality
- Financial Aid*

Child Welfare Factors
- Age at entrance
- Removal reason
- Length of stay
- # of placements
- Episode total
- Exit type

*post-secondary level
Outcomes

- Course work in English/math
- CST Performance Level English/math
- CAHSEE passage by end of 10th grade
- High school award
- Post-secondary entrance (CC and Univ.)
- Persistence
- Basic skills English/math
- Post-secondary Award
Analysis Approach

- Descriptive
- Percents, significant difference between groups
- Multivariate logistic regression

Multivariate analyses: logistic regression model with relative risk outcomes.

Specifically, a 'modified' Poisson approach estimates relative risk using robust error variance (also known as sandwich estimation). [15]

Initial relative risk estimates: converted to likelihood estimates (percents).
English H.S. Example (Sample 1)

- Grade 8 CST ELA (1557 matched pairs) - Foster Youth: 22%, Comparison Group: 28%
- Grade 9 CST ELA (1639 matched pairs) - Foster Youth: 29%, Comparison Group: 38%
- Grade 10 CST ELA (1281 matched pairs) - Foster Youth: 23%, Comparison Group: 30%
- Grade 11 CST ELA (981 matched pairs) - Foster Youth: 21%, Comparison Group: 28%
- English 9 (FY=837, CG=831) - Foster Youth: 86%, Comparison Group: 78%
- English 10 (FY=560, CG=578) - Foster Youth: 87%, Comparison Group: 78%
- English 11 (FY=356, CG=356) - Foster Youth: 71%, Comparison Group: 78%
- CAHSEE ELA (1285 matched pairs) - Foster Youth: 70%, Comparison Group: 73%

**Note:** Differences are statistically significant at the 0.05 level. Counts show denominators.
### English Example Cont. (Sample 1)

<table>
<thead>
<tr>
<th></th>
<th>CST: ELA</th>
<th>English Course</th>
<th>CAHSEE: ELA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grade Level</strong></td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Sample Size</td>
<td>3,150</td>
<td>3,278</td>
<td>2,562</td>
</tr>
<tr>
<td><strong>Males</strong></td>
<td>18-</td>
<td>14-</td>
<td>21-</td>
</tr>
<tr>
<td><strong>Black</strong></td>
<td>45-</td>
<td>36-</td>
<td>45-</td>
</tr>
<tr>
<td><strong>Hispanic</strong></td>
<td>24-</td>
<td>24-</td>
<td>36-</td>
</tr>
<tr>
<td><strong>ELL</strong></td>
<td>27-</td>
<td>30-</td>
<td>36-</td>
</tr>
<tr>
<td><strong>Free/Reduced Lunch</strong></td>
<td>26-</td>
<td>32-</td>
<td>22-</td>
</tr>
<tr>
<td><strong>Disability</strong></td>
<td>74-</td>
<td>93-</td>
<td>97-</td>
</tr>
<tr>
<td><strong>Bottom Ranked School</strong></td>
<td>42-</td>
<td>19-</td>
<td>31-</td>
</tr>
<tr>
<td><strong>Foster Students</strong></td>
<td>24-</td>
<td>25-</td>
<td>24-</td>
</tr>
</tbody>
</table>

*Reference Group is White
(-) sign indicates group is less likely to have a positive outcome
(+) sign indicates group is more likely to have a positive outcome
Ns indicates that result is not significant at the .05 level or lower
### Foster Youth - Likelihood of being proficient on the English Language Arts California Standards Test among Foster Youth (FY)

<table>
<thead>
<tr>
<th>Education Risk Factors</th>
<th>Grade Level</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>3,325</td>
<td>46-</td>
<td>42-</td>
<td>39-</td>
<td>40-</td>
</tr>
<tr>
<td>White</td>
<td>3,580</td>
<td>35-</td>
<td>36-</td>
<td>30-</td>
<td>45-</td>
</tr>
<tr>
<td>ELL</td>
<td>2,908</td>
<td>32-</td>
<td>38-</td>
<td>41-</td>
<td>48-</td>
</tr>
<tr>
<td>Disabled</td>
<td>2,319</td>
<td>75-</td>
<td>81-</td>
<td>82-</td>
<td>85-</td>
</tr>
<tr>
<td>Bottom Ranked Schools</td>
<td></td>
<td>38-</td>
<td>12-</td>
<td>31-</td>
<td>NS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Child Welfare Factors</th>
<th>Grade Level</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reunified</td>
<td>3,325</td>
<td>39-</td>
<td>26-</td>
<td>NS</td>
<td>40-</td>
</tr>
<tr>
<td>5+ Placements</td>
<td>3,580</td>
<td>35-</td>
<td>11-</td>
<td>NS</td>
<td>34-</td>
</tr>
</tbody>
</table>

Model adjusts for the following: gender, black and Hispanic (white is reference group), ELL, free lunch, disability, and poor school rank 1. CWS: maltreatment type (neglect reference), re-entry, age group at entry (before age 6 is reference), placement number (1-2 is reference), length of stay in foster care (<12 months reference), exit type (no exit reference).

(-) sign indicates group is less likely to have a positive outcome
(+) sign indicates group is more likely to have a positive outcome
Ns indicates that result is not significant at the .05 level or lower
Findings

- Foster youth significantly less likely to have positive education outcomes in English and math compared to their closely matched peers.
- Foster youth who identify with education at-risk subgroups are at increased risk for poor academic performance.
- Of all the subgroups, foster youth with disabilities have significantly worse outcomes on standardized tests at all grade levels in English and math than those without.
- Although some child welfare factors are associated with academic performance, no consistent trends emerge. Some support for improved outcomes for youth with fewer placements and those who stay in care compared with certain types of exits.

Full report link: http://www.stuartfoundation.org/Home.aspx
Limitations

- Administrative data
- ‘Snapshot’ of how youth performed on a given education outcome for 1 school year
- Risk and outcome are measured simultaneously
- Much harder to make practice or policy recommendations
Longitudinal analyses

Overall: 455 unique youth who entered foster care for the first time (Grades 3 to 8)

2 primary sample types:
1. Foster youth matched to comparison students by:
   - Age / grade level
   - School year
   - Gender
   - Ethnicity
   - ELL Status
   - Primary Disability
   - Free/reduced lunch
   - School district/school*
   - *or district and school rank
   - performance level at baseline

2. Foster youth only
## Independent Variables

### Demographic/ Education Risk Factors
- Gender
- Ethnicity
- ELL
- Disability
- Free/reduced school lunch
- School quality

### Child Welfare Factors
- Age at entrance
- Removal reason
- Length of stay
- # of placements
- Episode total
- Majority placement type
- Exit type
- re-entry

**Education Risk:** Sum of Ethnicity (Black, Hispanic) + ELL + Disability + free/reduced lunch + poor school quality (5 possible)
Additional Variables

Year 1 (foster youth entrance year) movement:
- School: School normative transition
- School non-normative transfer
- Residential: Placement change
- Exit from foster care
- Re-entry

Total year 1 changes: sum of school normative + school non-normative + placement change + exit + re-entry
(5 possible)

- Outcome: performance level CST English and Math
Analysis approach

- **Group-based analysis**
  - Assumes a number of discrete classes, each having a specific intercept, slope, and estimated population prevalence
  - Censored nominal distribution (CST levels 0 to 4)

- **Multinomial logistic regression**
  - Predictors of group membership
English Example: foster youth and comparison
### Matched Foster Youth/Comparison Group, ELA: Multinomial Logistic Regression

<table>
<thead>
<tr>
<th>Reference Group= Far Below (Group 1)</th>
<th>Group 2: Below/ Improving</th>
<th>Group 3: Below</th>
<th>Group 4: Basic</th>
<th>Group 5: Proficient/ advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foster Youth</td>
<td>.70 (.30)</td>
<td>.62 (.27)</td>
<td>.70 (.26)</td>
<td>.75 (.32)</td>
</tr>
<tr>
<td>Male</td>
<td>.86 (.32)</td>
<td>.87 (.40)</td>
<td>.55 (.17)</td>
<td>.69 (.30)</td>
</tr>
<tr>
<td>White/Asian-PI</td>
<td>Black</td>
<td>.76 (.35)</td>
<td>.38 (.22)</td>
<td>.19 (.08)*</td>
</tr>
<tr>
<td>Hispanic</td>
<td>Black</td>
<td>1.94 (.76)</td>
<td>1.68 (.61)</td>
<td>1.29 (.54)</td>
</tr>
<tr>
<td>ELL</td>
<td>.58 (.28)</td>
<td>.43 (.21)</td>
<td>.31 (.14)*</td>
<td>.13 (.06)*</td>
</tr>
<tr>
<td>Free Lunch**</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
</tr>
<tr>
<td>Disability</td>
<td>.32 (.15)*</td>
<td>.14 (.06)**+</td>
<td>.02 (.01)**+</td>
<td>.11 (.06)**+</td>
</tr>
<tr>
<td>State Rank Poor</td>
<td>.49 (.23)</td>
<td>.22 (.11)</td>
<td>.26 (.16)</td>
<td>.11 (.05)*</td>
</tr>
<tr>
<td>Middle School</td>
<td>.83 (.38)</td>
<td>1.22 (.53)</td>
<td>1.13 (.48)</td>
<td>.77 (.30)</td>
</tr>
<tr>
<td>Wald $X^2$</td>
<td>99.43*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pseudo $R^2$</td>
<td>.10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*significant at .05 level or below; ** Free lunch omitted due to empty/low cell size
+ Cell size <5
English Example Foster Youth

California Standards Test—English
Foster Youth Sample

Performance Level

Baseline Year 1 Year 2 Year 3

Estimated Group Percent:
- 9.0
- 10.0
- 9.7
- 36.0
- 29.0
- 6.2
### Foster Youth Sample, ELA: Multinomial Logistic Regression

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>White/Asian-PI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>.41 (.28)</td>
<td>.67 (.34)</td>
<td>.27 (.12)*</td>
<td>.24 (.12)*</td>
<td>.09 (.05)*+</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1.14 (.52)</td>
<td>.79 (.33)</td>
<td>.55 (.19)</td>
<td>.39 (.18)*</td>
<td>.17 (.09)*</td>
</tr>
<tr>
<td>Disability</td>
<td>.68 (.34)</td>
<td>.25 (.12)*</td>
<td>.11 (.05)*</td>
<td>.23 (.13)*</td>
<td>.09 (.04)*+</td>
</tr>
<tr>
<td>State Rank Poor</td>
<td>.33 (.18)*</td>
<td>.47 (.22)</td>
<td>.43 (.18)*</td>
<td>.22 (.11)*</td>
<td>.16 (.07)*</td>
</tr>
<tr>
<td>Middle School</td>
<td>1.44 (.71)</td>
<td>1.68 (.75)</td>
<td>.96 (.38)</td>
<td>.87 (.43)</td>
<td>.10 (.05)*+</td>
</tr>
<tr>
<td>Kin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-kin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td>1.60 (.67)</td>
<td>1.17 (.45)</td>
<td>1.22 (.42)</td>
<td>1.14 (.48)</td>
<td>.72 (.38)+</td>
</tr>
<tr>
<td>3 + placements</td>
<td>.29 (.14)*</td>
<td>.60 (.29)</td>
<td>.85 (.39)</td>
<td>.36 (.15)</td>
<td>1.59 (.98)</td>
</tr>
<tr>
<td>Still in Care</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reunified</td>
<td>.52 (.26)</td>
<td>.76 (.36)</td>
<td>1.10 (.48)</td>
<td>1.60 (.97)</td>
<td>1.70 (.99)</td>
</tr>
<tr>
<td>Other Exit</td>
<td>1.68 (1.12)</td>
<td>2.14 (1.31)</td>
<td><strong>3.26 (1.32)</strong>*</td>
<td>2.43 (1.62)</td>
<td>3.23 (2.76)+</td>
</tr>
<tr>
<td>Transition</td>
<td>[.24 (.14)***+</td>
<td>.71 (.34)</td>
<td>.66 (.31)</td>
<td>.27 (.16)*</td>
<td>.53 (.32)+</td>
</tr>
<tr>
<td>Transfer</td>
<td>1.27 (.60)</td>
<td>.67 (.30)</td>
<td>.89 (.34)</td>
<td>.52 (.27)</td>
<td>1.09 (.62)</td>
</tr>
<tr>
<td>Placement ch.</td>
<td>1.00 (.52)</td>
<td>.59 (.29)</td>
<td>.49 (.21)</td>
<td>.33 (.19)</td>
<td><strong>.18 (.10)</strong>*+</td>
</tr>
<tr>
<td>Exit</td>
<td>1.50 (.68)</td>
<td>.54 (.29)</td>
<td>.99 (.43)</td>
<td>1.13 (.56)</td>
<td>1.36 (.68)</td>
</tr>
<tr>
<td>Re-entry</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
</tr>
</tbody>
</table>

Wald $X^2$: Pseudo R-Square: 243.36*, 0.13

Model adjusts for the following: gender, Black and Hispanic (White/Asian PI is reference group), ELL, free lunch, disability, poor school rank 1, and school level (i.e. elem/middle). CWS: maltreatment type (neglect reference), placement number (1-2 is reference), length of stay in foster care (< 1 month reference), majority placement type (non-kin is reference), exit type (no exit reference), and re-entry.

*Significant at the .05 or below level
+ Cell size <5
### Cumulative Risk

<table>
<thead>
<tr>
<th></th>
<th>.71 ( .16)</th>
<th>.55 ( .12)*</th>
<th>.41 ( .08)*</th>
<th>.36 ( .08)*</th>
<th>.18 ( .05)*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education Risk</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Year 1 Changes</strong></td>
<td>.87 ( .11)</td>
<td>.85 ( .12)</td>
<td>.81 ( .08)*</td>
<td>.66 ( .11)*</td>
<td>.79 ( .13)*</td>
</tr>
<tr>
<td>Wald $X^2$</td>
<td>53.94*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pseudo R-Square</td>
<td>.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 or below level
+ Cell size <5

**Education Risk:** Sum of Ethnicity (Black, Hispanic) + ELL + Disability + free/reduced lunch + poor school quality (5 possible)

**Total year 1 changes:** sum of school normative + school non-normative + placement change + exit + re-entry (5 possible)
Findings

- It’s important to explore academic performance variance with educationally vulnerable populations.
- English and math trajectories of foster youth and comparison students are similar. Findings suggest that educational vulnerability for foster youth is related to characteristics that exist prior to placement in out of home care.
- Educational risks prior to entrance are more salient predictors of poor academic performance trajectories. Lower performing trajectory groups are defined by an increased number of education risks present at entry and residential and school changes in the first year of placement.
Limitations

- Exploratory
- Administrative data set limitations
- Sample size
- Not weighted to general population
Pilot Project Lessons Learned

- Map out the necessary permissions before-hand and make sure not to exclude stakeholders in the process.

- Understand the political climate in your area and work load constraints

- Stay flexible, be creative and patient

- Create a formal analysis plan at the beginning

- Pilot, pilot, pilot
Moving Forward

- California Statewide effort (58 counties)
- Weighted samples
- Follow youth over time
  - High school to post-secondary
  - Investigate residential and school movement

Allows us to tell a story about foster youth’s educational journey
http://www.acf.hhs.gov/programs/cb/stats_research/index.htm#afcars