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

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August 31, 2011

National Child Welfare Evaluation Summit

Overview

- UCB/Cal-PASS pilot project
  - Overview and challenges
  - Selected outcomes
  - Lessons learned
  - Moving forward

California Ready to Succeed Pilot Project

Background

- 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/

- 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

http://www.calpass.org/

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

http://www.stuartfoundation.org/OurStrategy.aspx

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

Permissions: IRB

- 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

Permissions: School Districts

- 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
  - 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

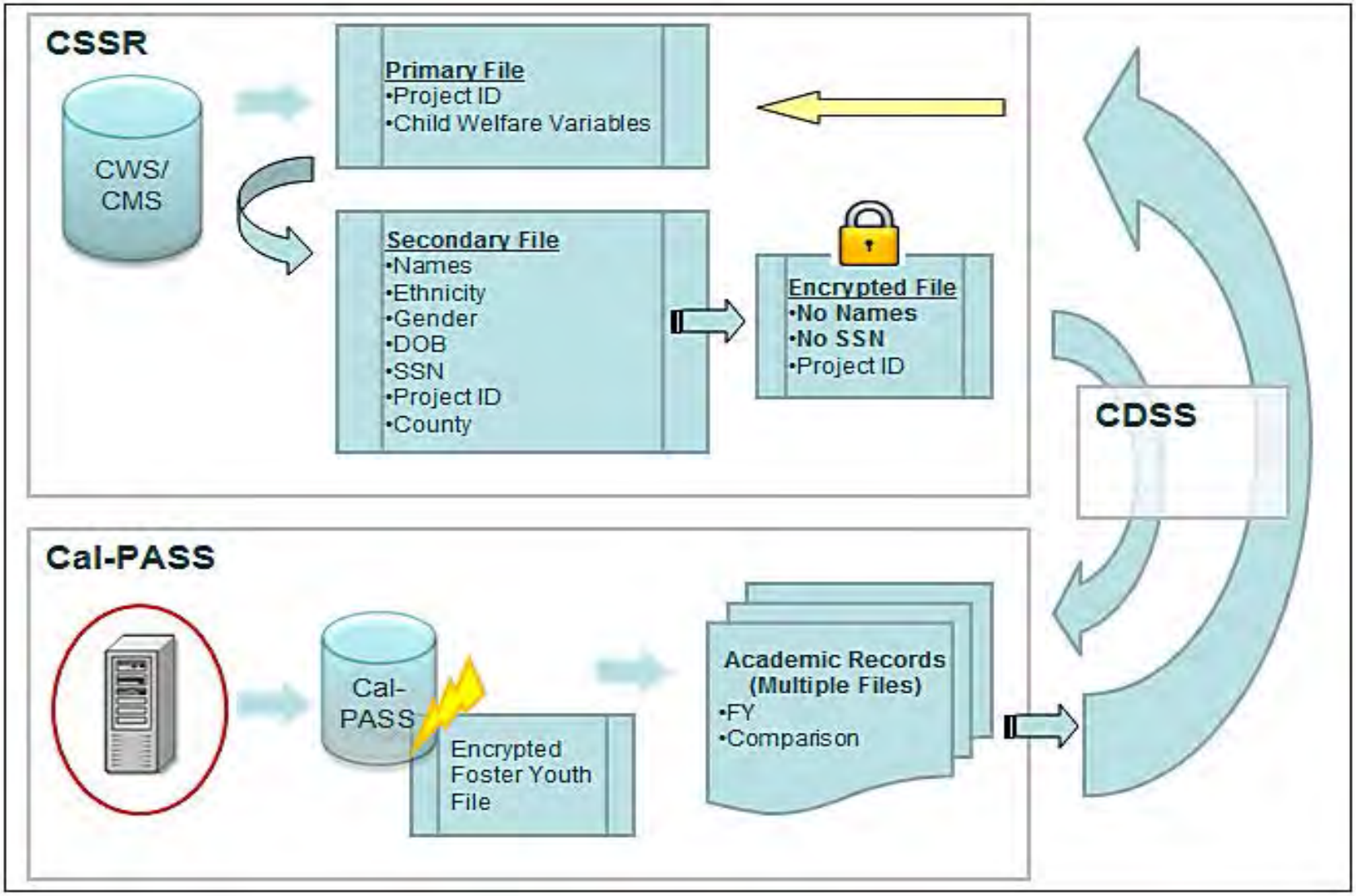
A couple of challenges…..

- 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.

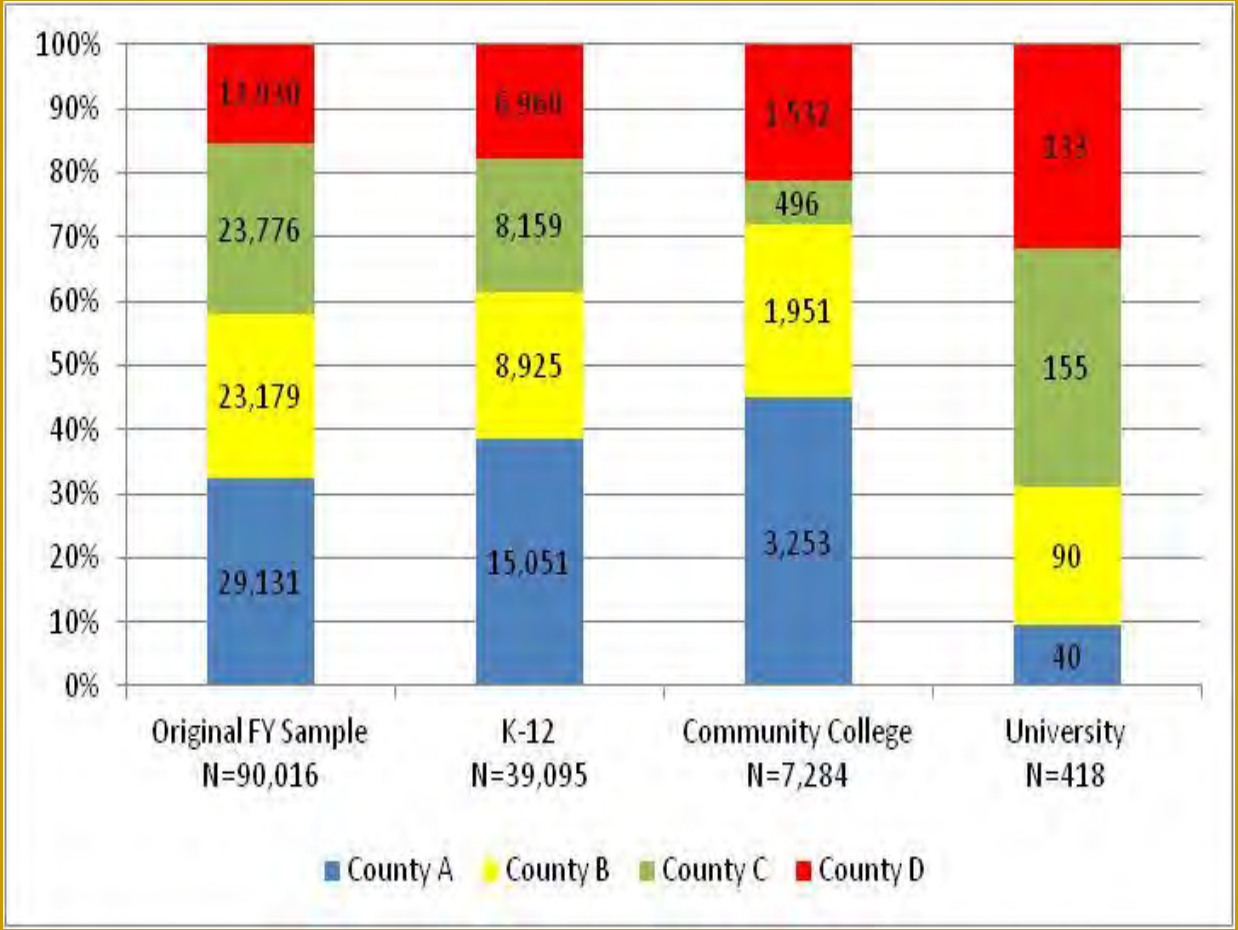
Data matching



Match statistics

Overall, 42,485 unique school aged foster youth were matched to educational data from the 3 school segments (47%)

Foster Youth Sample (Aged 6+) and Cal-PASS Data Match by School Segment and County



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 English/math
- High school award
- Post-secondary entrance (CC and Univ.)
- Persistence
- Basic skills English/math
- Post-secondary Award

Analysis Approach

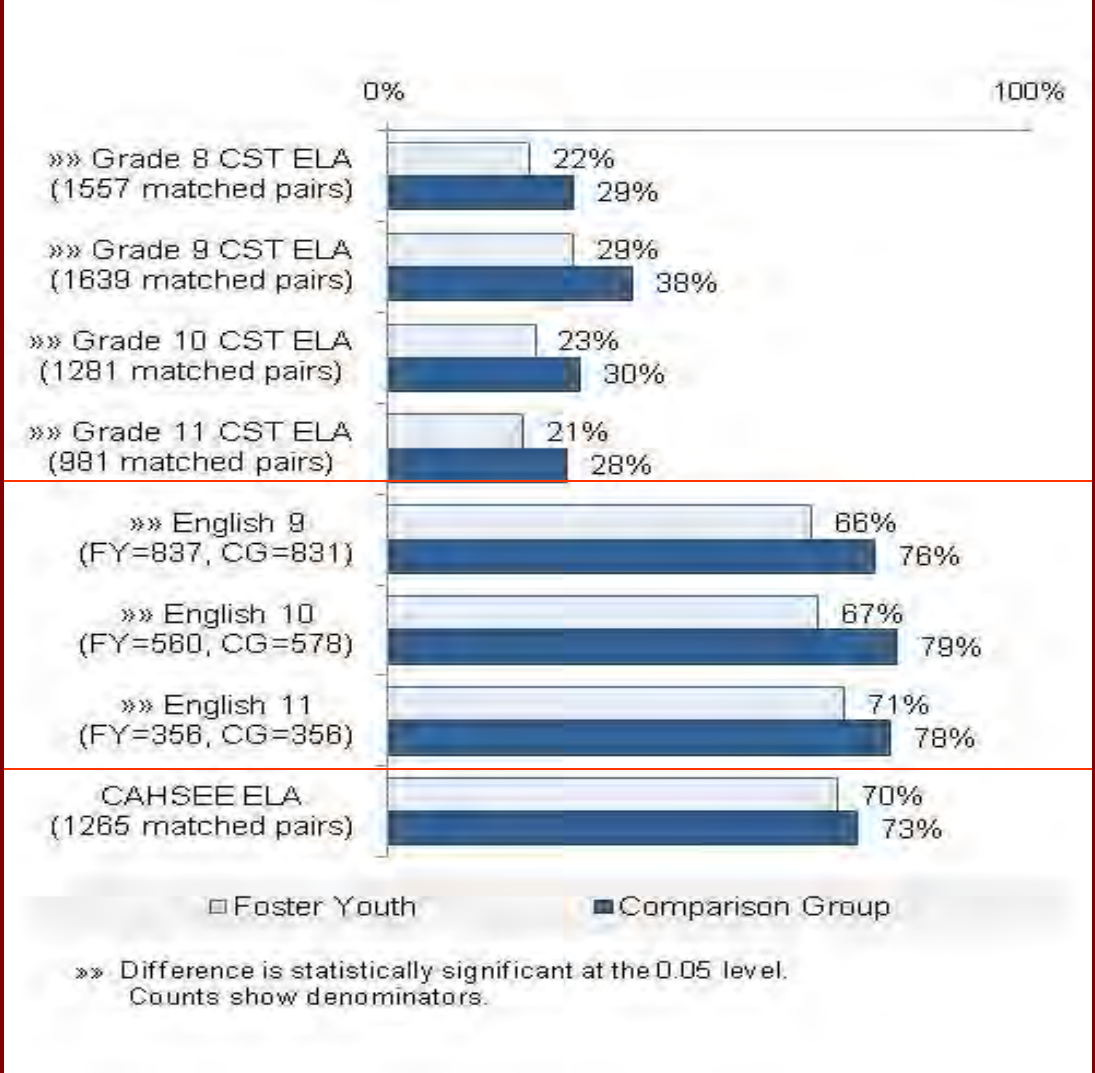
- Descriptive
- Percents, significant difference between groups
- Multivariate logistic regression

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)



English Example Cont. (Sample 1)

English, foster youth/comparison- Significant Percent Less/More Likely to Achieve Proficiency by Outcome/Independent Variables

	CST: ELA				English Course			CAHSEE: ELA
Grade Level	**8**	**9**	**10**	**11**	**9**	**10**	**11**	**10**
Sample Size	3,150	3,278	2,562	1,962	1,668	1,138	712	2,530
Males	18-	14-	21-	14-	10-	11-	18-	10-
Black*	45-	36-	45-	48-	ns	8-	14-	15-
Hispanic*	24-	24-	36-	37-	8-	10-	16-	10-
ELL	27-	30-	36-	41-	12-	ns	15+	18-
Free/Reduced Lunch	26-	32-	22-	ns	13-	ns	ns	7-
Disability	74-	93-	97-	87-	ns	ns	ns	72-
Bottom Ranked School	42-	19-	31-	17-	9+	ns	ns	9-
Foster Students	**24-**	**25-**	**24-**	**26-**	**13-**	**15-**	**9-**	**ns**

*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

English Example (Sample 2)

Foster Youth- Likelihood of being proficient on the English Language Arts California Standards Test among Foster Youth (FY)

	Grade Level	8	9	10	11
	Sample Size	3,325	3,580	2,908	2,319
Education Risk Factors	Black	46-	42-	39-	40-
	White	35-	36-	30-	45-
	ELL	32-	38-	41-	48-
	Disabled	75-	81-	82-	85-
	Bottom Ranked Schools	38-	12-	31-	NS
Child Welfare Factors	Reunified	39-	26-	NS	40-
	5+ Placements	35-	11-	NS	34-

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)

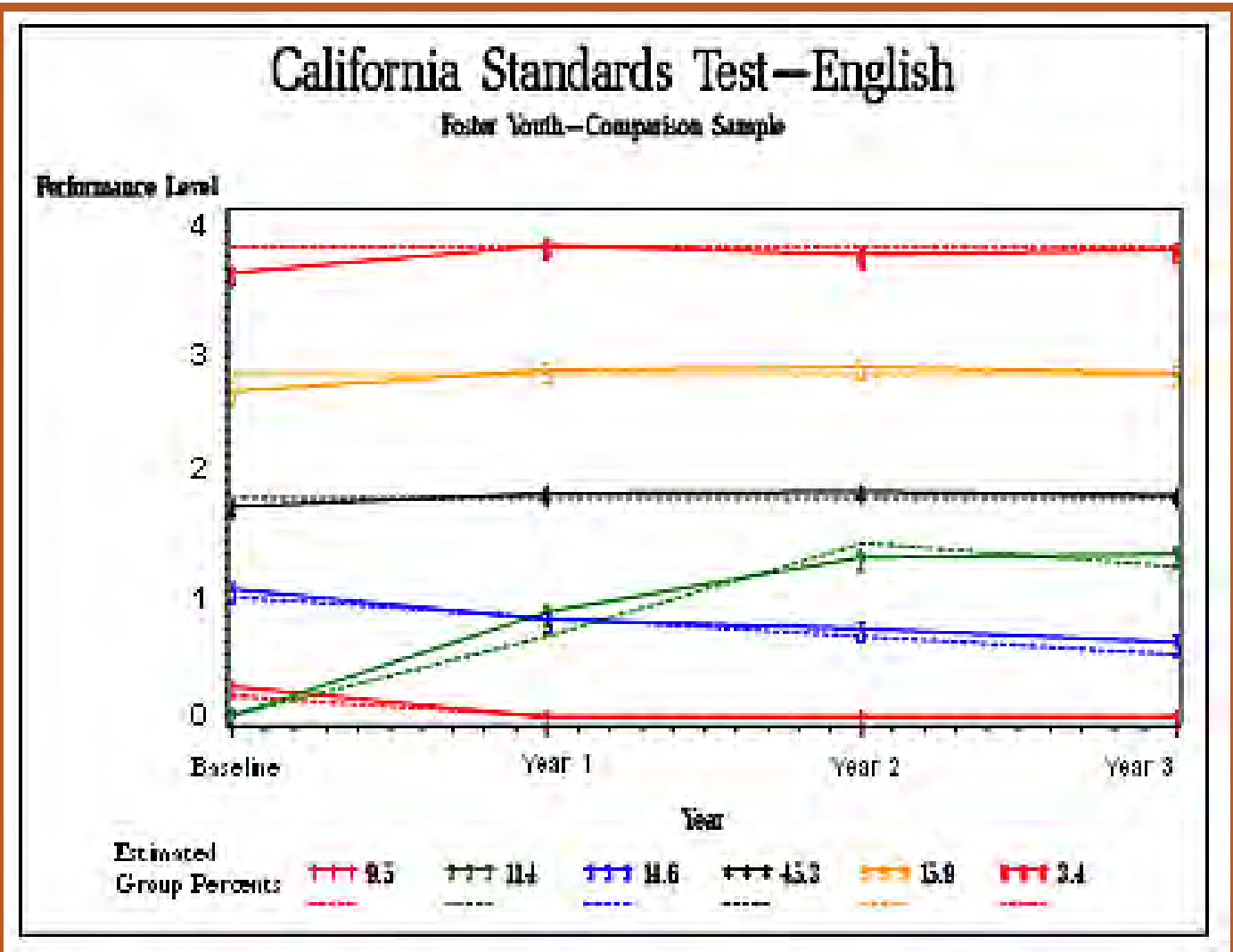
- Outcome: performance level CST English and Math

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

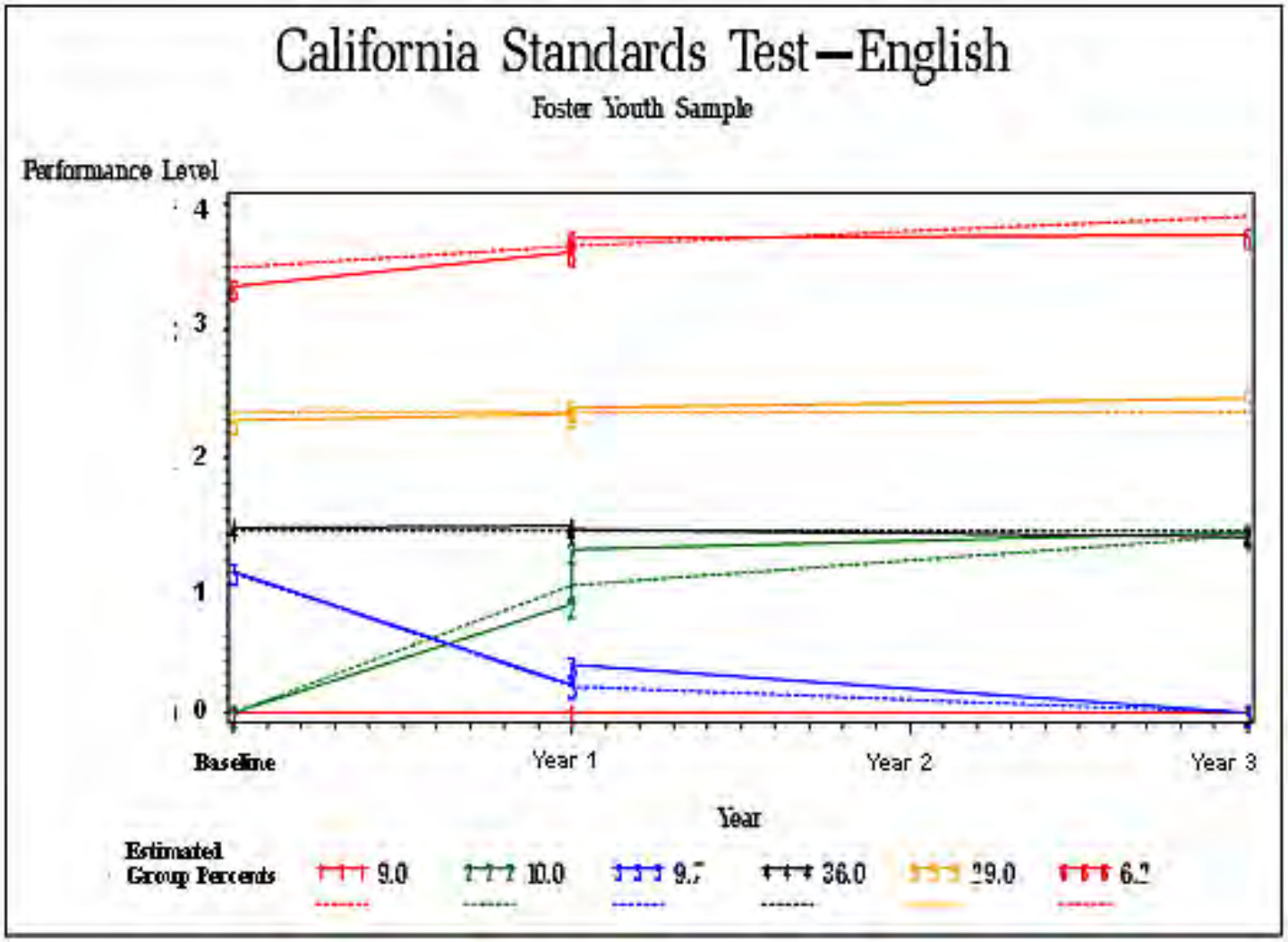


Matched Foster Youth/Comparison Group, ELA: Multinomial Logistic Regression

Reference Group= Far Below (Group 1)		Group 2: Below/ Improving	Group 3: Below	Group 4: Basic	Group 5: Proficient/ advanced
		Relative Risk Ratios (Robust Standard Errors)			
Foster Youth		.70 (.30)	.62 (.27)	.70 (.26)	.75 (.32)
Male		.86 (.32)	.87 (.40)	.55 (.17)	.69 (.30)
White/Asian-PI	Black	.76 (.35)	.38 (.22)	**.19 (.08)***	**.10 (.06)***
	Hispanic	1.94 (.76)	1.68 (.61)	1.29 (.54)	.91 (.40)
ELL		.58 (.28)	.43 (.21)	.31 (.14)*	**.13 (.06)***
Free Lunch**		na	na	na	na
Disability		**.32 (.15)***	**.14 (.06)*+**	**.02 (.01)*+**	**.11 (.06)*+**
State Rank Poor		.49 (.23)	.22 (.11)	.26 (.16)	**.11 (.05)***
Middle School		.83 (.38)	1.22 (.53)	1.13 (.48)	.77 (.30)
Wald X^2		99.43*			
Pseudo R^2		.10			

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

English Example Foster Youth



Foster Youth Sample, ELA: Multinomial Logistic Regression

Reference Group= Far Below (Group 1)		Group 2: Below/ Improving	Group 3: Below/ Declining	Group 4: Below	Group 5: Basic	Group 6: Proficient
		Relative Risk Ratios (Robust Standard Errors)				
White/ Asian-PI	Black	.41 (.28)	.67 (.34)	**.27 (.12)***	**.24 (.12)***	**.09 (.05)*+**
	Hispanic	1.14 (.52)	.79 (.33)	.55 (.19)	**.39 (.18)***	**.17 (.09)***
Disability		.68 (.34)	**.25 (.12)***	**.11 (.05)***	**.23 (.13)***	**.09 (.04)*+**
State Rank Poor		**.33 (.18)***	.47 (.22)	**.43 (.18)***	**.22 (.11)***	**.16 (.07)***
Middle School		1.44 (.71)	1.68 (.75)	.96 (.38)	.87 (.43)	**.10 (.05)*+**
Non-kin	Kin	3.20 (1.38)	1.70 (.97)	2.50 (1.14)	**6.90 (3.36)***	1.26 (.78)
	Group	1.60 (.67)	1.17 (.45)	1.22 (.42)	1.14 (.48)	.72 (.38)+
3 + placements		**.29 (.14)***	.60 (.29)	.85 (.39)	.36 (.15)	1.59 (.98)
Still in Care	Reunified	.52 (.26)	.76 (.36)	1.10 (.48)	1.60 (.97)	1.70 (.99)
	Other Exit	1.68 (1.12)	2.14 (1.31)	**3.26 (1.32)***	2.43 (1.62)	3.23 (2.76)+
Year 1	Transition	**.24 (.15)*+**	.71 (.34)	.66 (.31)	**.27 (.16)***	.53 (.32)+
	Transfer	1.27 (.60)	.67 (.30)	.89 (.34)	.52 (.27)	1.09 (.62)
	Placement ch.	1.00 (.52)	.59 (.29)	.49 (.21)	.33 (.19)	**.18 (.10)*+**
	Exit	1.50 (.68)	.54 (.29)	.99 (.43)	1.13 (.56)	1.36 (.68)
	Re-entry	na	na	na	na	na
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

Education Risk	.71 (.16)	**.55 (.12)***	**.41 (.08)***	**.36 (.08)***	**.18 (.05)***
Year 1 Changes	.87 (.11)	.85 (.12)	**.81 (.08)***	**.66 (.11)***	**.79 (.13)***
Wald X^2	53.94*				
Pseudo R-Square	.04				

*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

End Notes

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[14] Zou, G. (2004). A modified Poisson regression approach to prospective studies with binary data. *American Journal of Epidemiology, 159*(7), 702-706.