

Understanding Variation in Health Risks across Development and Child Welfare Involvement for Youth in Foster Care

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Acknowledgments



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**Center for Clinical
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Science & Training**



NIMHD
National Institute on Minority Health
and Health Disparities



**National Institute
on Drug Abuse**



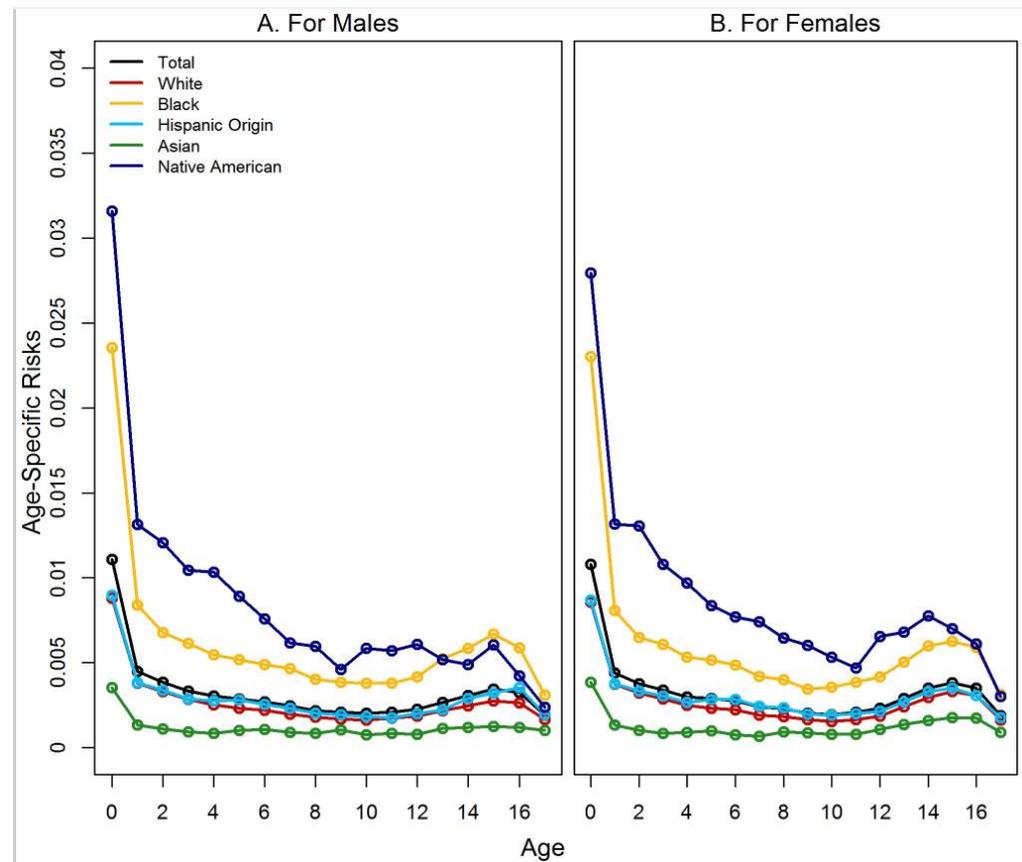
Background



- On any given day, ~424,000 children in foster care in the US
 - 0.5% of the US population of children
- Over 1 year, count is ~672,000 children
 - 1% of the US population
- In childhood, count is ~4,314,000 children
 - ~5.9% of the US population

Background

- Probability of first foster care placement is not evenly dispersed



Background



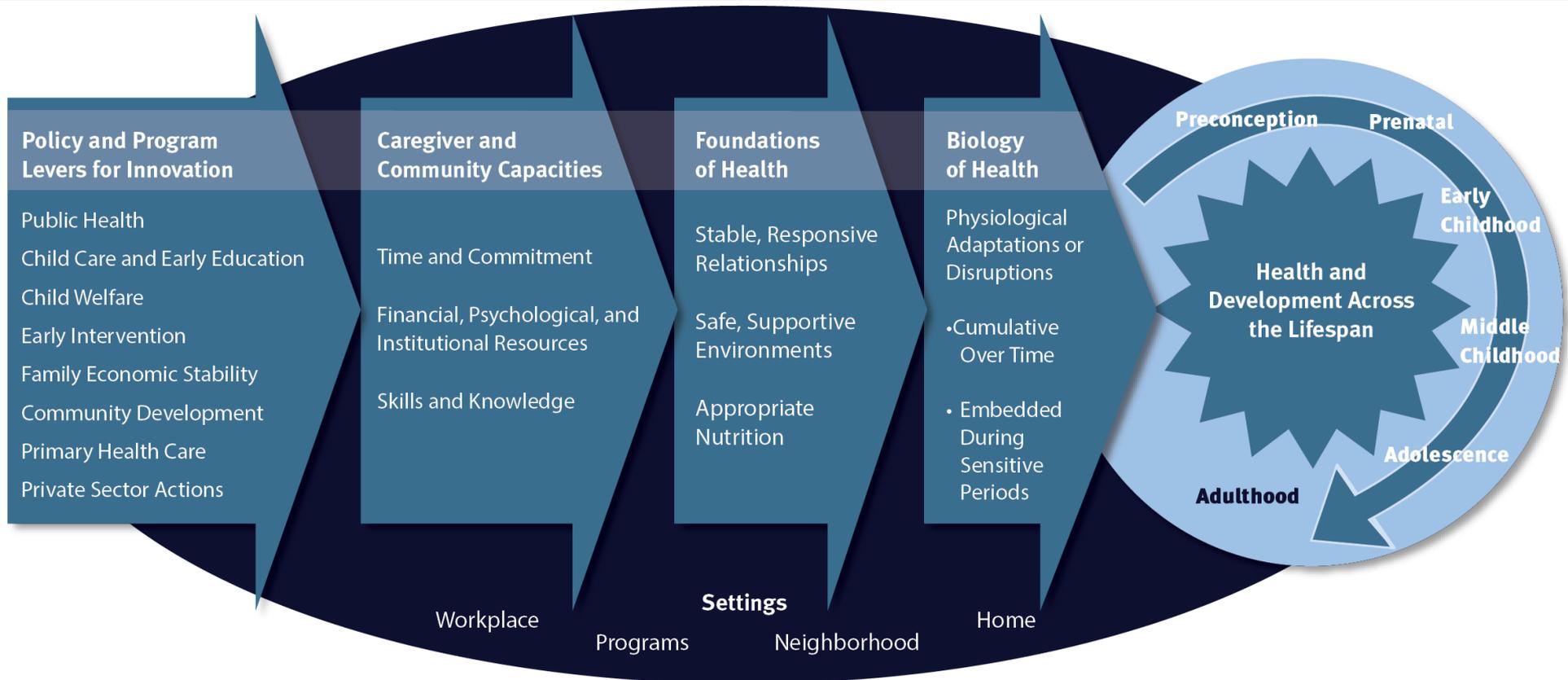
- Probability of first foster care placement is not evenly dispersed
- 8% of children re-enter foster care within 12 months of reunification or guardianship
- Children primarily enter foster care due to maltreatment (abuse and/or neglect)
- Youth in foster care are known to face greater health and social risk than the general population

Background



- Multiple federal, state, and local policies manage administration of child welfare, supporting child health
- Specific to health, children are federally required to interact with healthcare systems at entry, annually thereafter
 - States and counties can further expand these requirements
 - Compliance audited through review process

Developmental Science and Healthcare Delivery



Adolescence, child welfare, and health



Schulenberg & Maslowsky, 2015

Adolescence, child welfare, and health

- Maltreatment histories often pre-date child welfare involvement and out-of-home care
 - Ongoing exposure to maltreatment and adversity
 - Established influences of early life adversity and maltreatment for adult health



Adolescence, child welfare, and health

- Trajectory differentiation at critical points
 - Investigations, decisions about removal, and subsequent out-of-home care could represent points of differentiation
 - Timing and developmental context impacts health

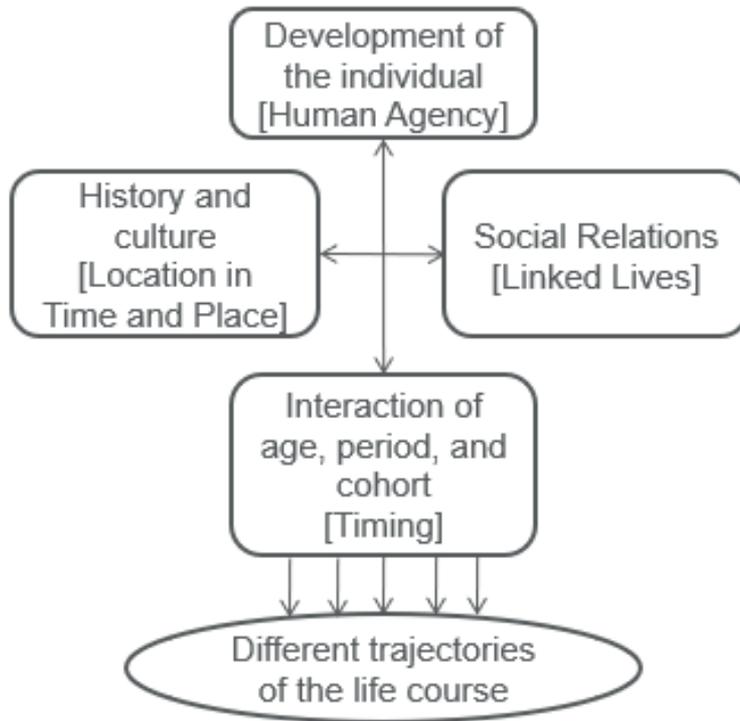


Adolescence, child welfare, and health

- Youth and families interact with and shape experiences in child welfare, alter health
- These dynamics could be beneficial
 - Capitalizing on agency and independence
 - Systems designed in ways to interact with youth to support and bolster better health
 - » Healthcare and child welfare systems beginning to differentiate policy with development in mind

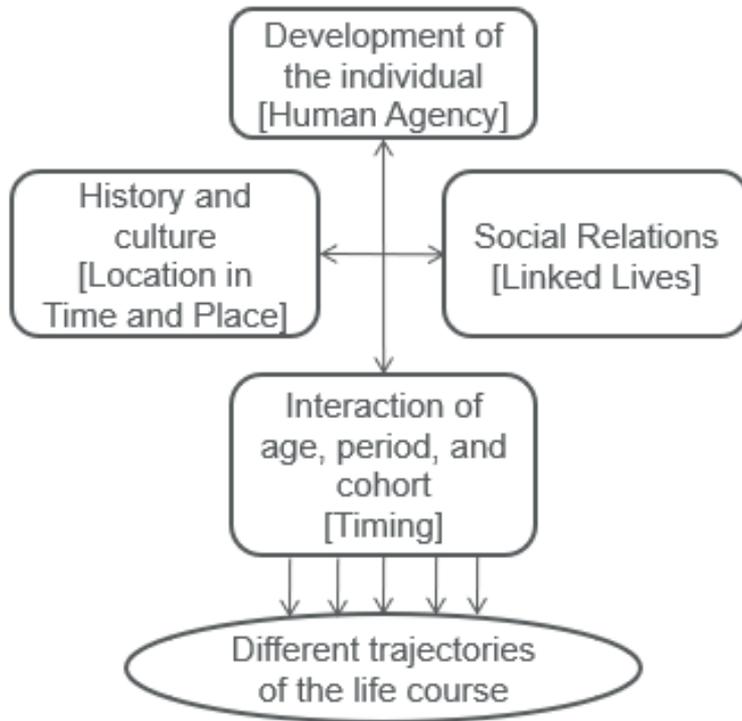


A tale of two models



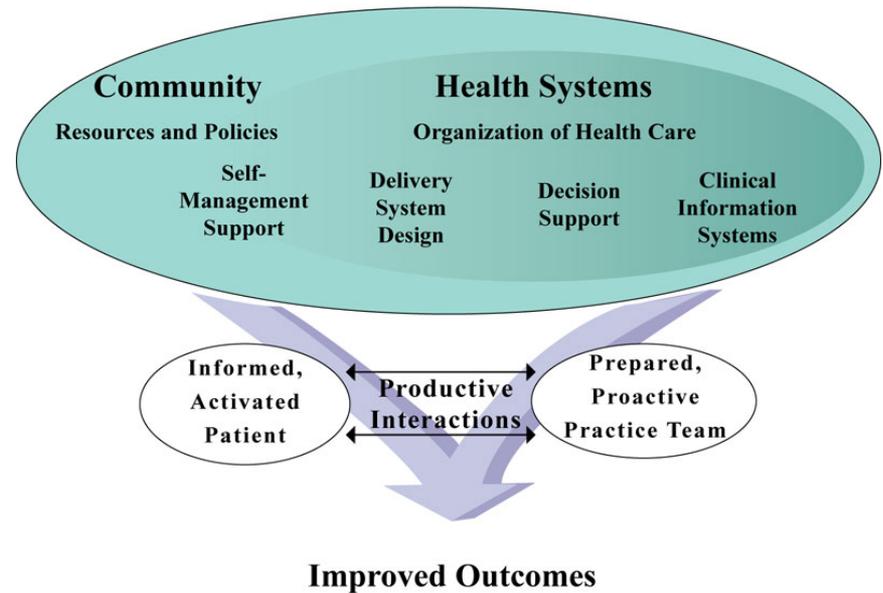
Giele & Elder, 1998

A tale of two models



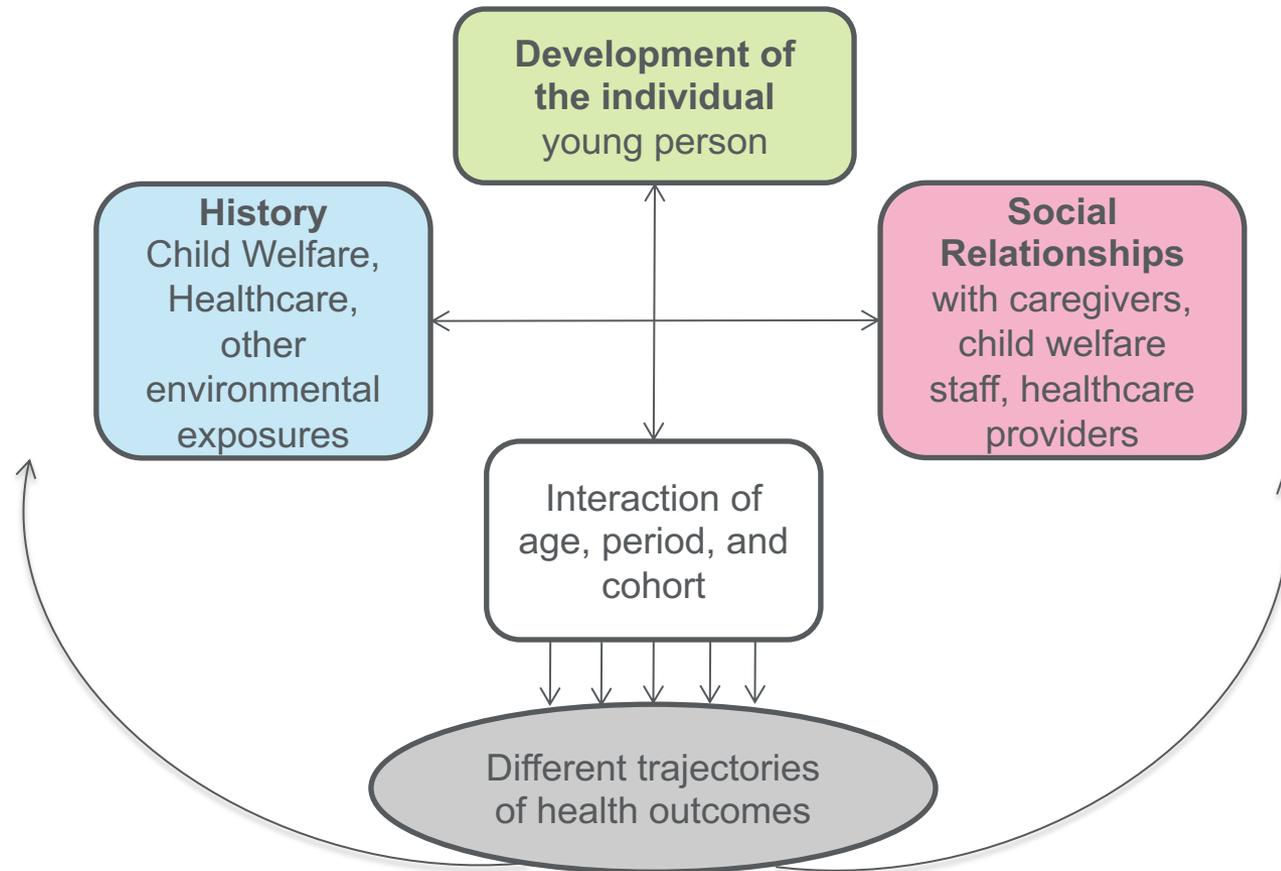
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The Chronic Care Model



Developed by The MacColl Institute
© ACP-ASIM Journals and Books

A tale of two models



One example: Substance use

- Exploratory substance use in adolescence is common
 - e.g., 1 in 3 12th graders using marijuana
 - Perceptions of “adult” behavior
 - Perceptions of “criminal” behavior

One example: Substance use

- Exploratory substance use in adolescence is common
 - e.g., 1 in 3 12th graders using marijuana
 - Perceptions of “adult” behavior
 - Perceptions of “criminal” behavior
- Consequences of substance use, and particularly problematic substance use, can be severe
 - Substance use disorder
 - Impact on education, employment, social safety net programs
- Increased use (and scrutiny) when youth already have child welfare involvement

The CAREFUL Study

Context

- Child welfare
 - County-administered
 - ~2k children in custody
 - Foster care to age 21
- Healthcare
 - Foster care consultation clinic
 - Only inpatient provider
 - Primary outpatient provider for specialty care, primary care

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← HIDE FIELDS

Fill in the fields:

LAST NAME

FIRST NAME

DATE OF BIRTH MM/DD/YYYY

MEDICAL RECORD #

SELECT HOSPITALS

PCSA: COUNTY NAME

CASEWORKER NAME

SACWIS PERSON ID

SACWIS CASE ID

PROVIDER ID

PLACEMENT PROVIDER

SEARCH

RESET

Last Updated 09/30/2021 at 1:01 AM

Search results | Recently viewed

Show 10 entries

Search:

NAME	DOB (AGE)	PCSA: COUNTY NAME	SACWIS PERSON ID	SACWIS CASE ID	PLACEMENT PROVIDER	PLACEMENT TYPE
No data available in table						

Previous Next

JFS HAMILTON COUNTY JOB & FAMILY SERVICES



The CAREFul Study

Participants (N = 5574)

Foster Care (n = 2787)

- In foster care > 1 day between 2012 and 2017
- Linked medical record
 - N = 25; 0.90% excluded
- Ages 10-20, inclusive (M=15.3y, SD=2.7)
- 49% female
- 65% African American

Comparison (n = 2787)

- Never in foster care
- Seen for primary care $\geq 1x$ between 2012 and 2017
- Medicaid Insurance
- Ages 10-20, inclusive (M=15.3y, SD=2.7)
- 49% female
- 65% African American

The CAREFuL Study

Measures

Child welfare database

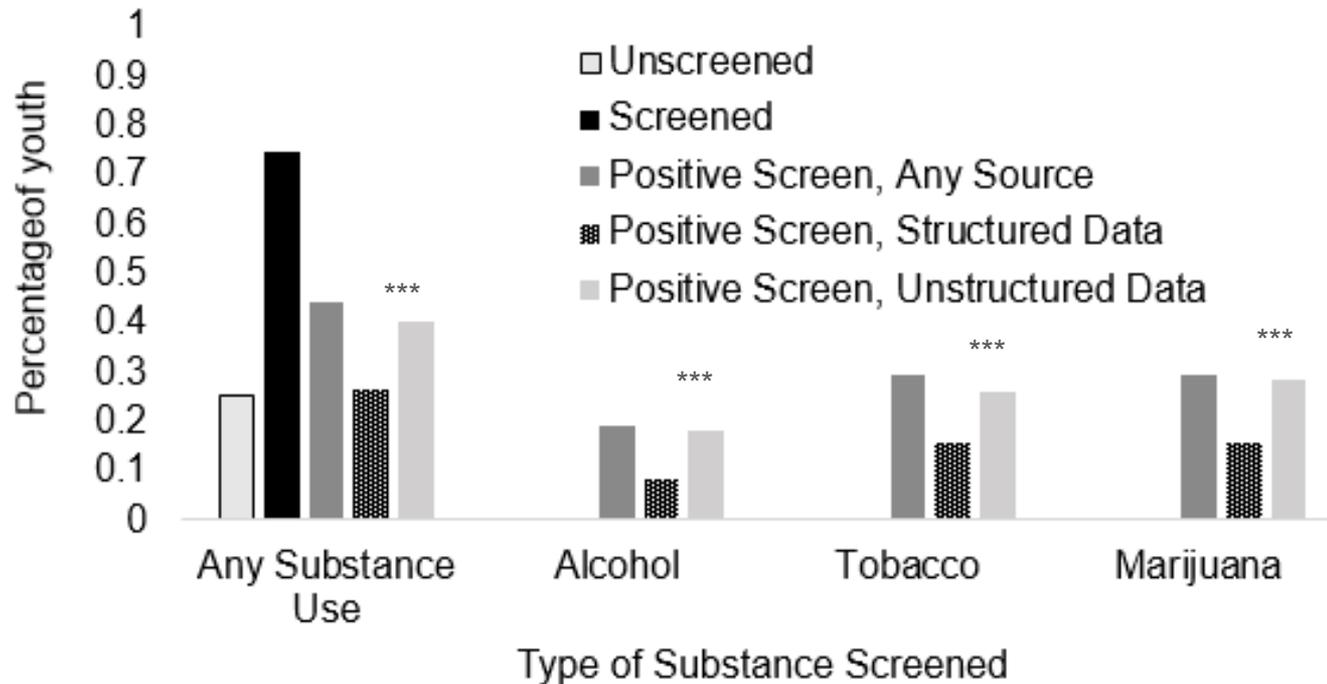
- In foster care during healthcare encounter
- Age of first entry into foster care
- Reasons for entry into foster care
- Placement type
- Placement stability

Electronic Medical Record

- Healthcare encounters
 - Type, Age
- Diagnoses
- Demographic data
- Sexual risk behavior*
- Substance use*

*Indicates unstructured and structured data were used

The CAREFUL Study: Screening for Substance Use



*** χ^2 value with $p < .001$

The CAREFUL Study: Screening for Substance Use

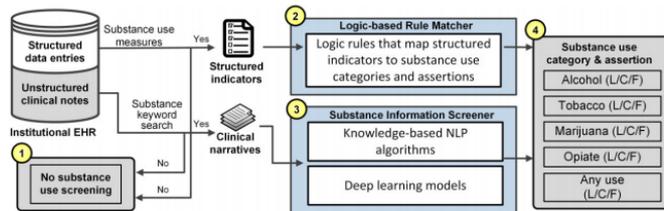


Figure 1. An overview of the automated substance use screening system. C: current; EHR: electronic health record; F: family use; L: lifetime; NLP: natural language processing.

Final Performance Metrics

- AUC $\geq .95$
- Sensitivity $\geq .84$
- Specificity $\geq .87$

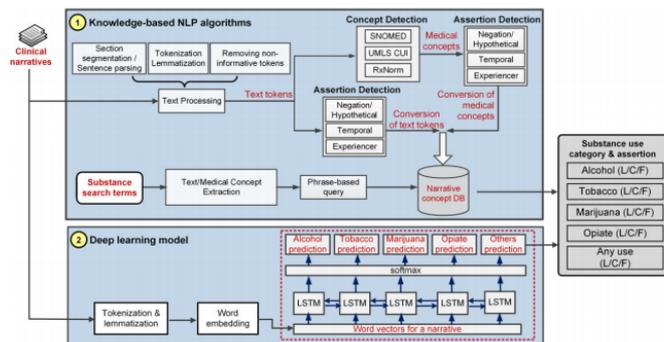


Figure 2. An overview of the substance information screener. C: current; CLI: concept unique identifier; F: family use; L: lifetime; LSTM: long-short term memory; RxNorm: normalized names for clinical drugs; SNOMED: Systematized Nomenclature of Medicine Clinical Terms; UMLS: Unified Medical Language System.

Research and Applications

Automated detection of substance use information from electronic health records for a pediatric population

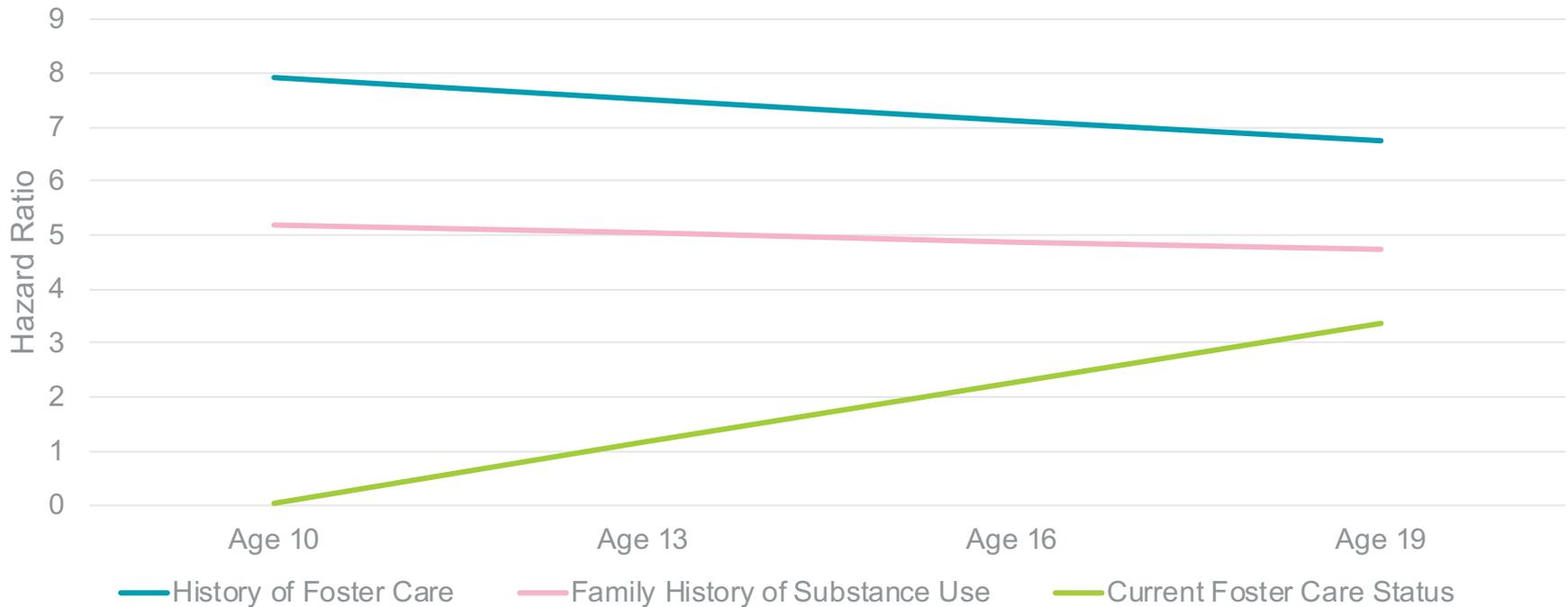
Yizhao Ni,^{1,2} Alycia Bachtel,¹ Katie Nause,³ and Sarah Beal^{2,3}

The CAREFuL Study

- Youth in the foster care cohort were 3x more likely to be screened for substance use than youth in the comparison cohort
 - Most screening occurred at mandated visits
 - No screenings at mandated visits resulted in treatment referral, diagnosis

The CAREFuL Study

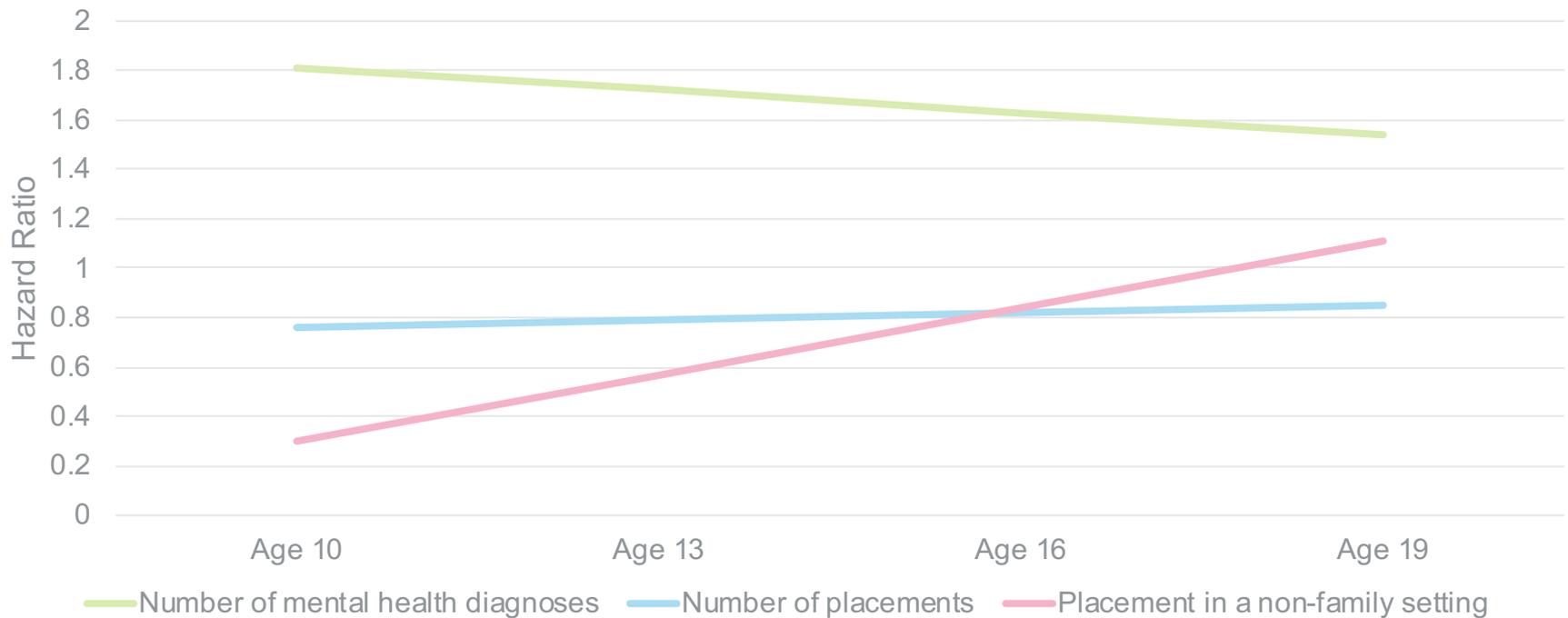
Significant Changes in Hazard Ratios Predicting Initiation of Substance Use Among All Adolescents



Model included other demographic, health, and mental health covariates

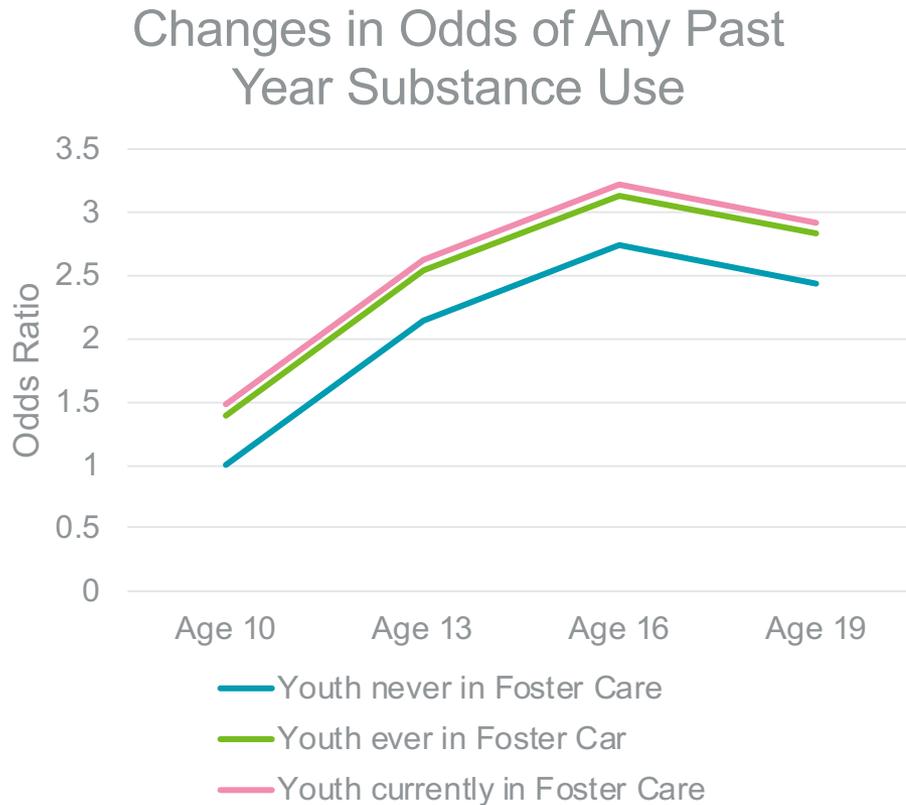
The CAREFuL Study

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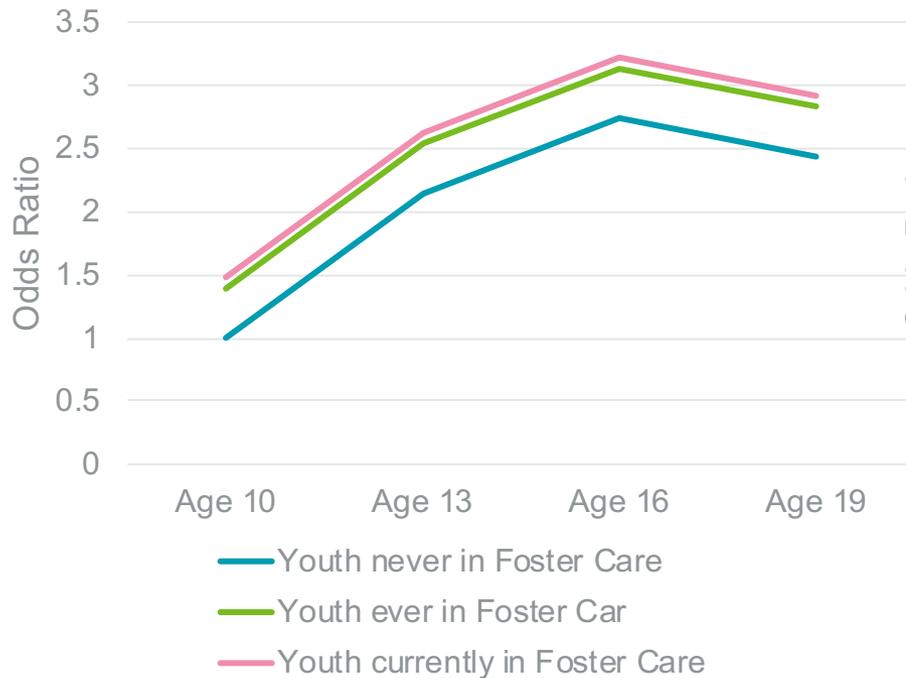


Similar patterns
observed for alcohol
and tobacco use

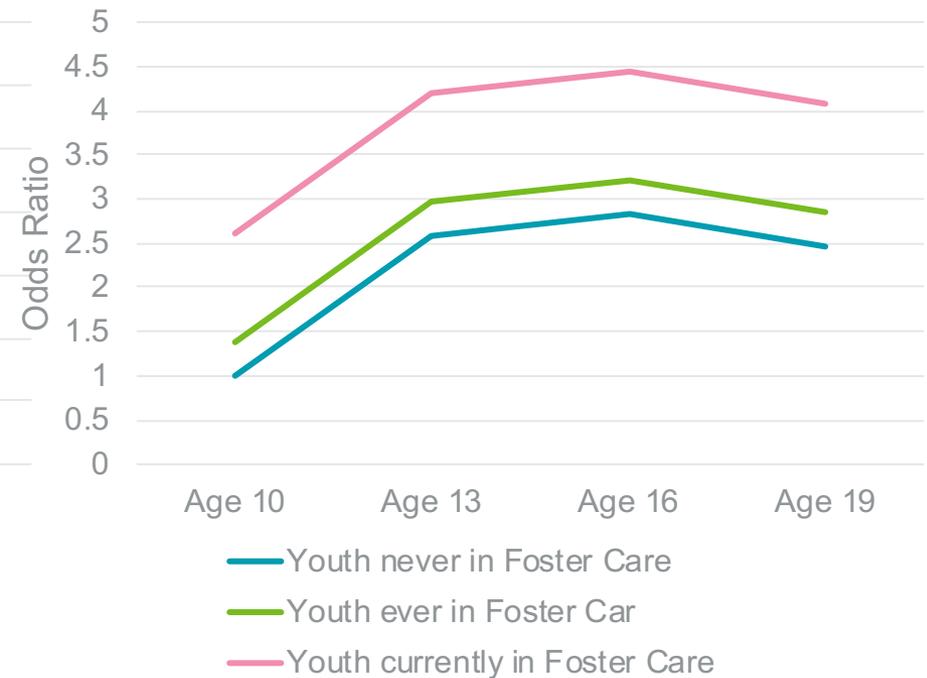
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The CAREFul Study

Changes in Odds of Any Past Year Substance Use



Changes in Odds of Past Year Marijuana Use



Model included other demographic, health, and mental health covariates

The CAREFUL Study

For youth ever in foster care:

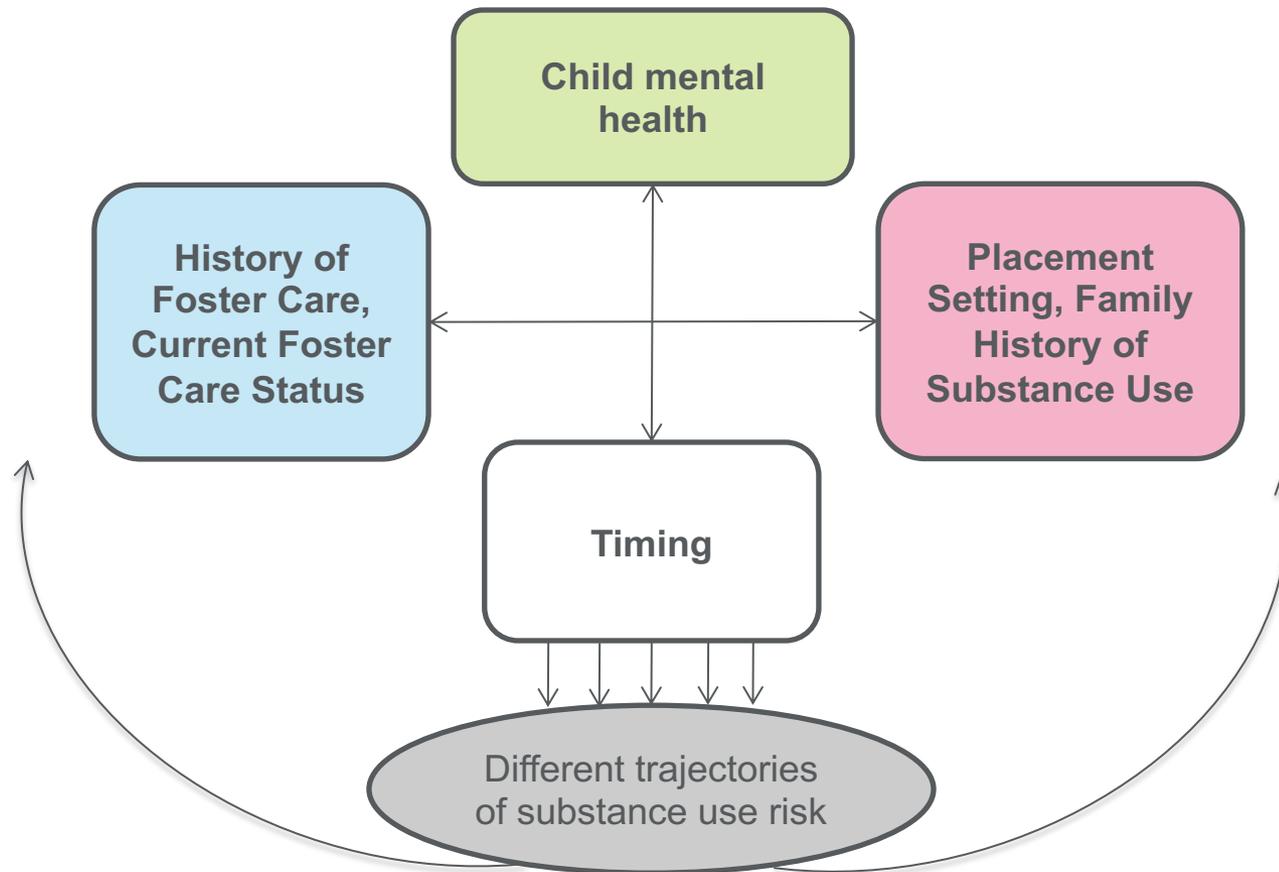
- Number of placements increased risk for any past year substance use (OR = 1.04, $p < .01$) and past year marijuana use (OR = 1.05, $p < .01$)
- Placement in nonfamily settings increased risk for any past year substance use (OR = 1.12, $p < .01$) and marijuana use (OR = 1.14, $p < .01$)

Model included other demographic, health, and mental health covariates

The CAREFuL Study

- Substance use emerges earlier in adolescence, at higher frequency, more substances used for youth in foster care
 - For younger adolescents, placement in foster care is protective in delaying substance use initiation
 - For older adolescents, current foster care status is no longer relevant
 - Placement stability and non-family settings are also differentially associated with risk for initiation of substance use, current substance use

The CAREFuL Study





 Cincinnati
Children's
Research Foundation

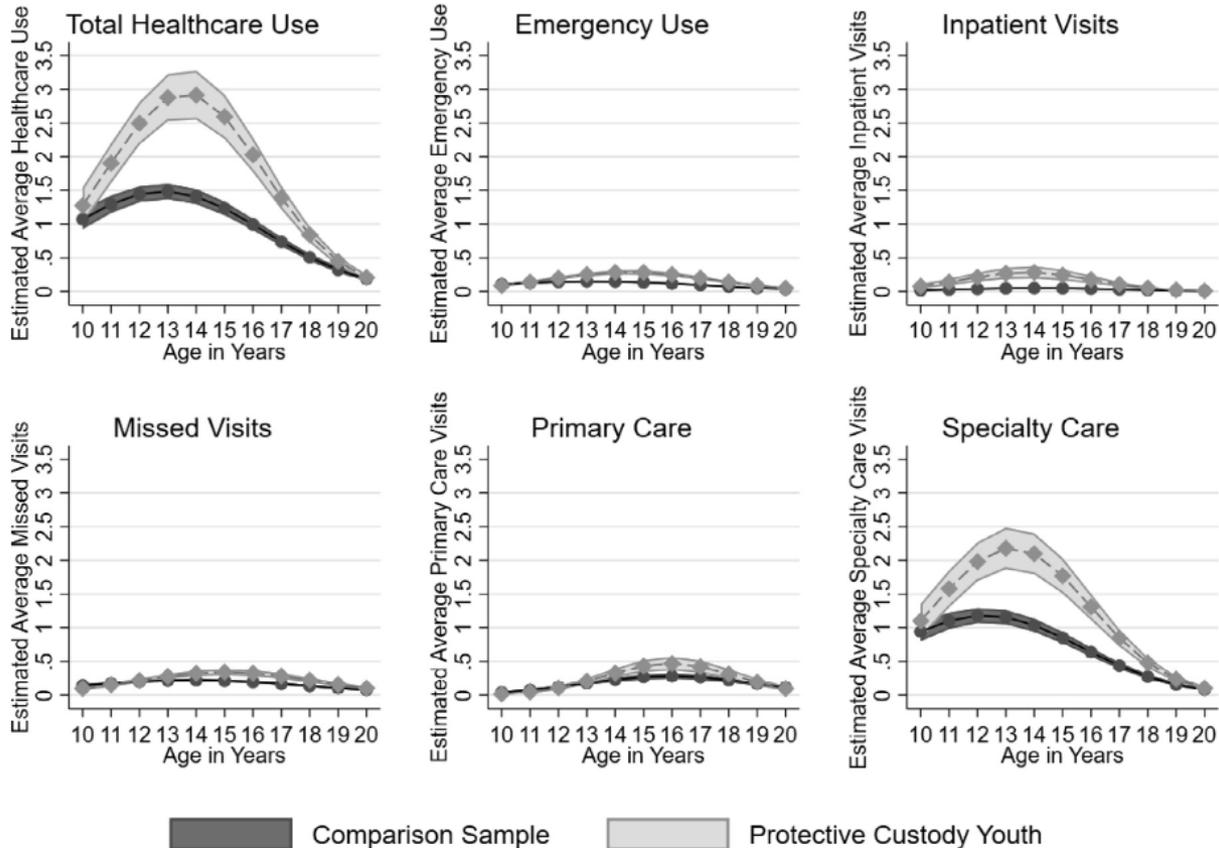
 Cincinnati
Children's
changing the outcome together

 University of
CINCINNATI

The CAREFuL Study

- Healthcare access and opportunities for prevention, intervention
 - Increase in screening among foster youth, primarily at mandated foster care clinic visits

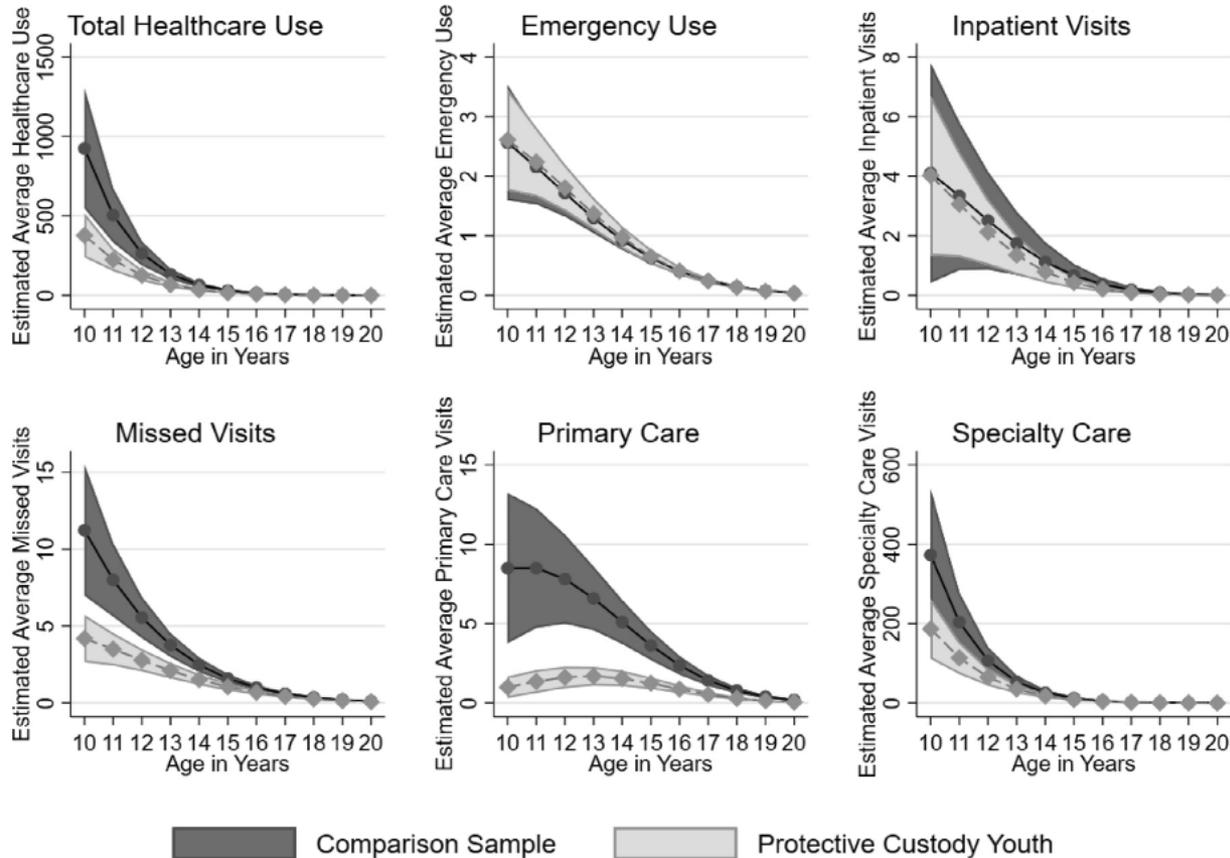
The CAREFuL Study



Effects of Child Protective Custody Status and Health Risk Behaviors on Health Care Use Among Adolescents

Sarah J. Beal, PhD; Constance A. Mara, PhD; Katie Nause; Robert T. Ammerman, MD, ABPP; Rebecca Seltzer, MD, MHS; Melissa Jonson-Reid, PhD; Mary V. Greiner, MD, MS

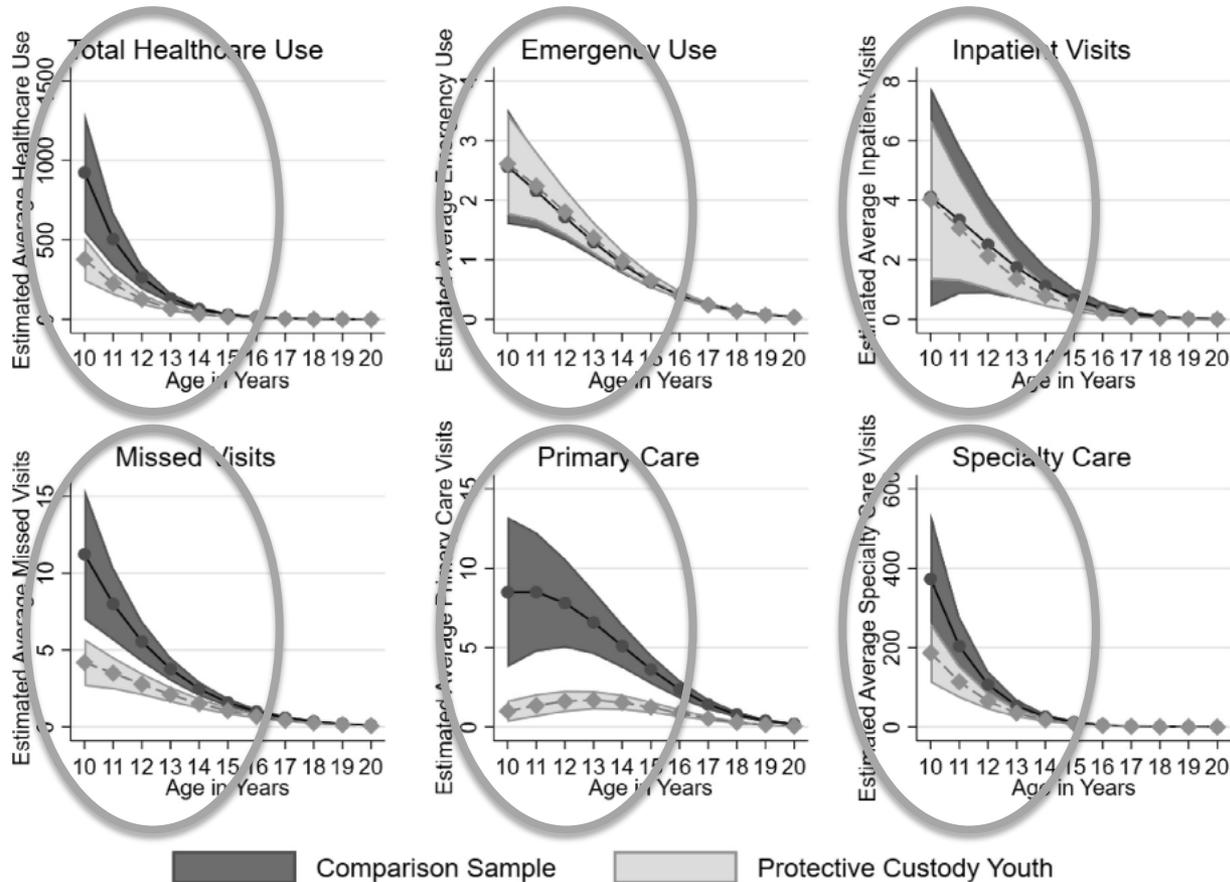
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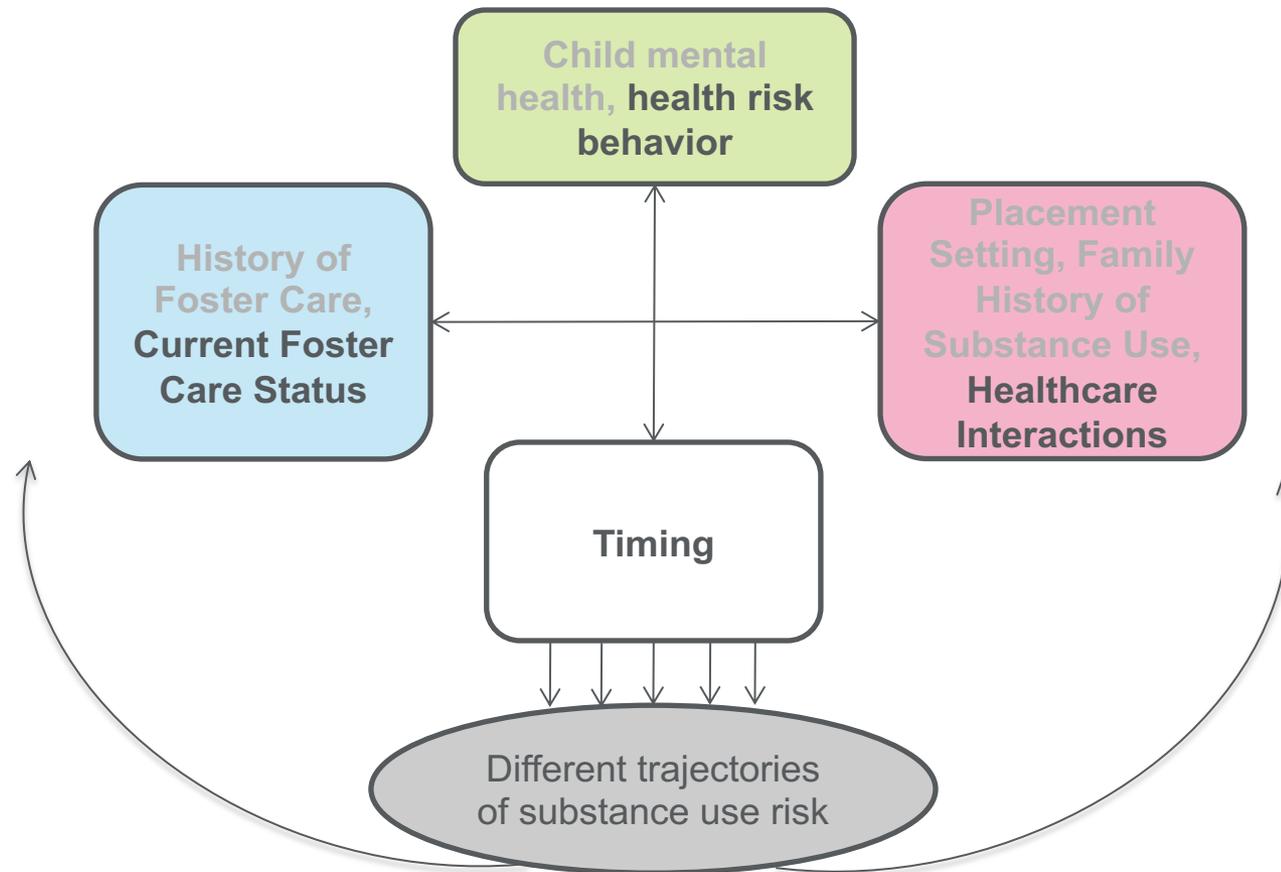
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The CAREFuL Study

- Healthcare access and opportunities for prevention, intervention
 - Increase in screening among foster youth, primarily at mandated foster care clinic visits
 - Increased overall contact with the healthcare system while youth are in foster care
 - Particularly during early adolescence
 - Potential advantages to addressing health risks in order to reduce costly healthcare use

The CAREFul Study



What about older adolescents?



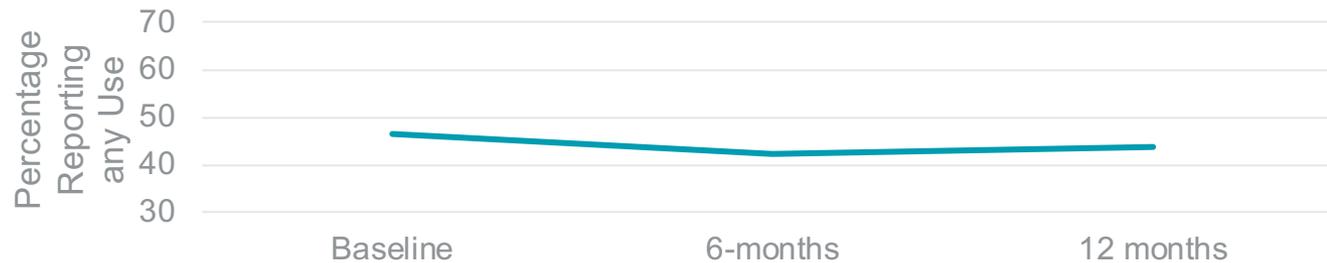
Participants

- 151 Adolescents
 - Ages 16-20
 - In custody > 12 months, expected to emancipate in the next 18 months
 - Emancipation was observed for 30% of participants
- Surveys 3x over 1 year to assess health risk behaviors, transition to adulthood
 - Timing of emancipation, placement experiences from child welfare record data

What about older adolescents?



Past month substance use



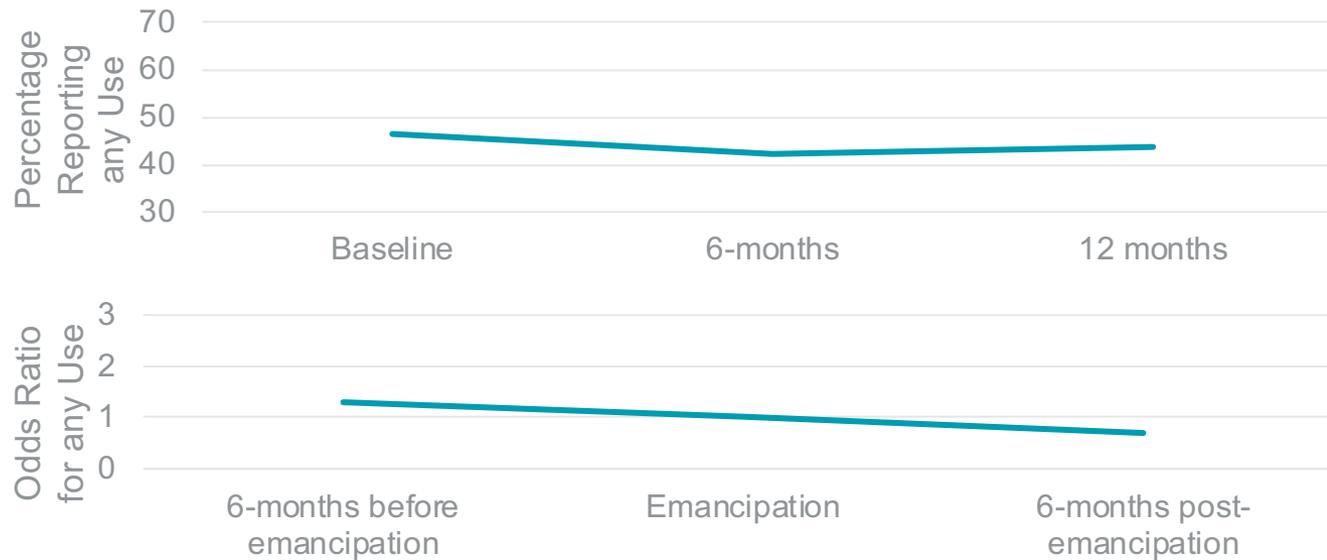
No significant variation
Models controlled for child welfare factors, demographics



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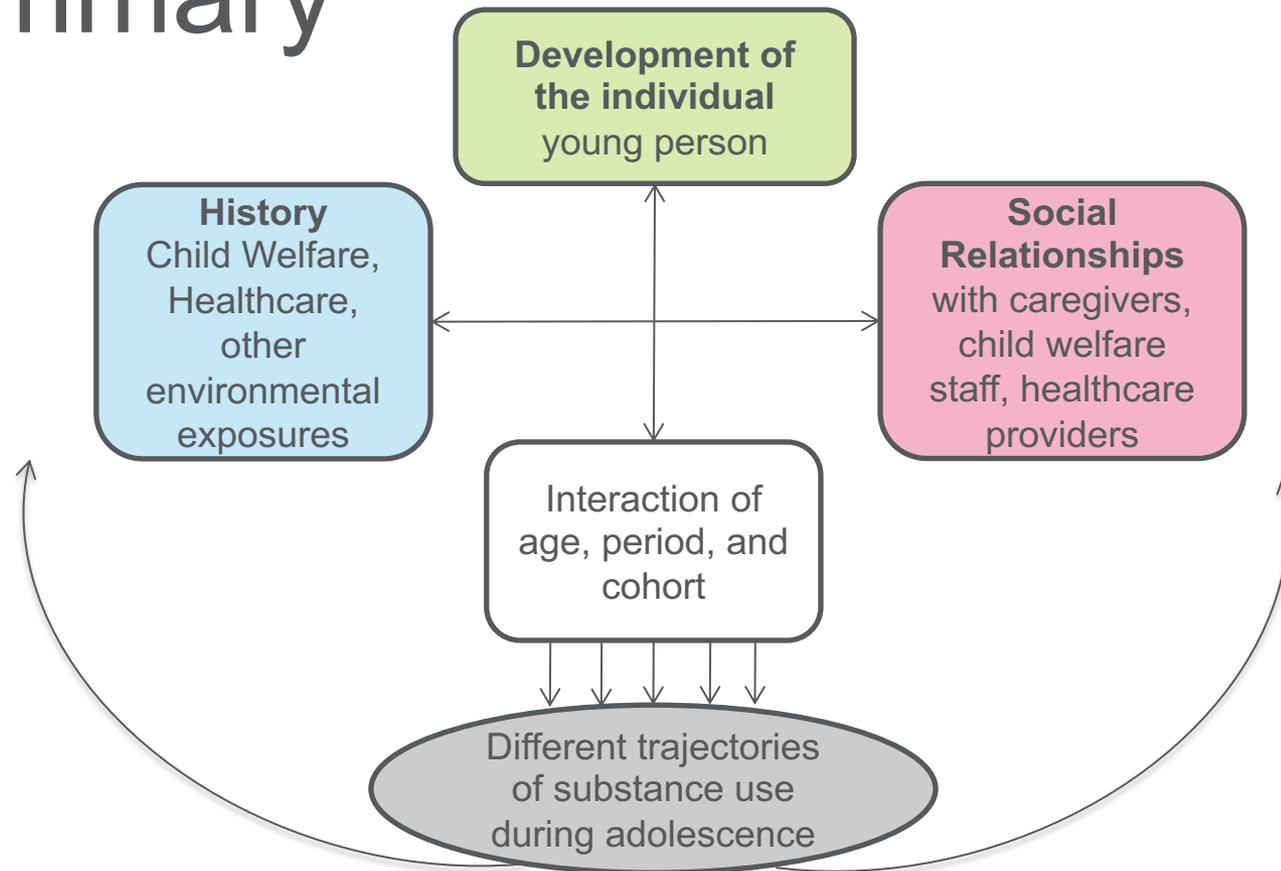
Past month substance use



No significant variation
Models controlled for child welfare factors, demographics



Summary



Qualitative differences
in substance use by
late adolescence

Implications for healthcare delivery, child welfare

- Healthcare systems have repeated opportunities to detect and intervene
 - Need evidence-based prevention and early intervention for adolescents in, at risk of, or with a history of foster care

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 - Critical when considering how substance use and SUD may impact education, employment, social support and resources for this population

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Integrated systems can generate evidence to transform child health and welfare

