

Introducing the Alaska Longitudinal Child Abuse and Neglect Linkage Project (ALCANLink)

△ Making smarter use of available data



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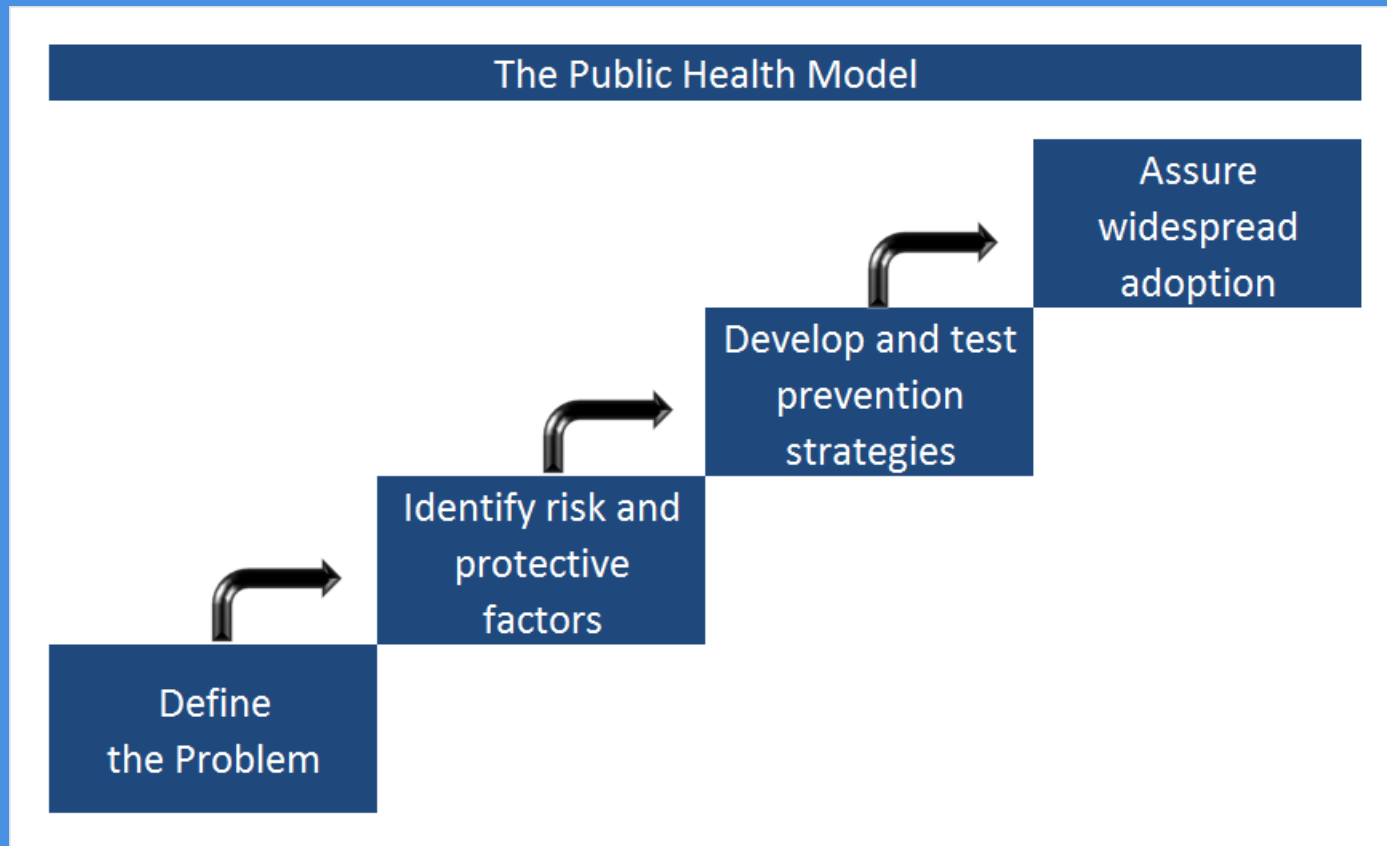
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Data _____ Cornerstone of public health



Complex public health problems require
comprehensive longitudinal data

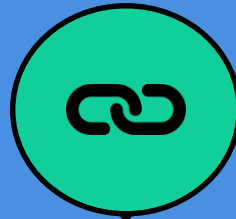
Data linkage



Much of what we
know about child
maltreatment is
based on annual
child welfare
data



Through data integration,
population based data can be
derived



Birth Cohorts linked to Child
Protection



Challenges

ALCANLink

Mixed design approach

Alaska Pregnancy Risk Assessment Monitoring System (Alaska PRAMS)

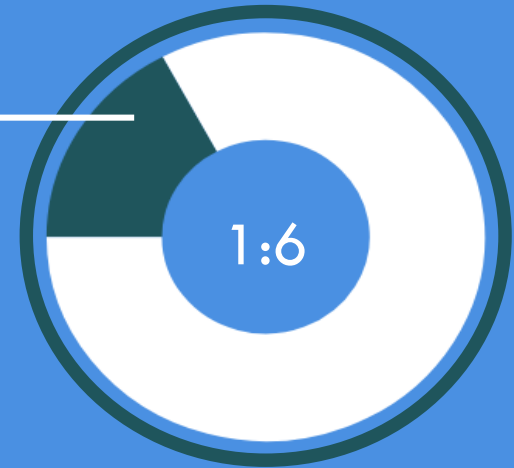
Follow-up



Administration
and response

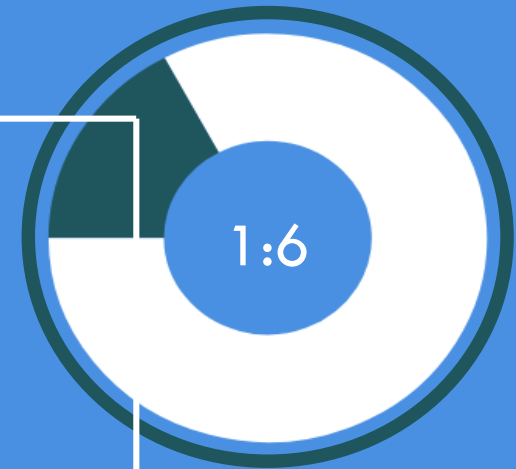


Maternal
experiences

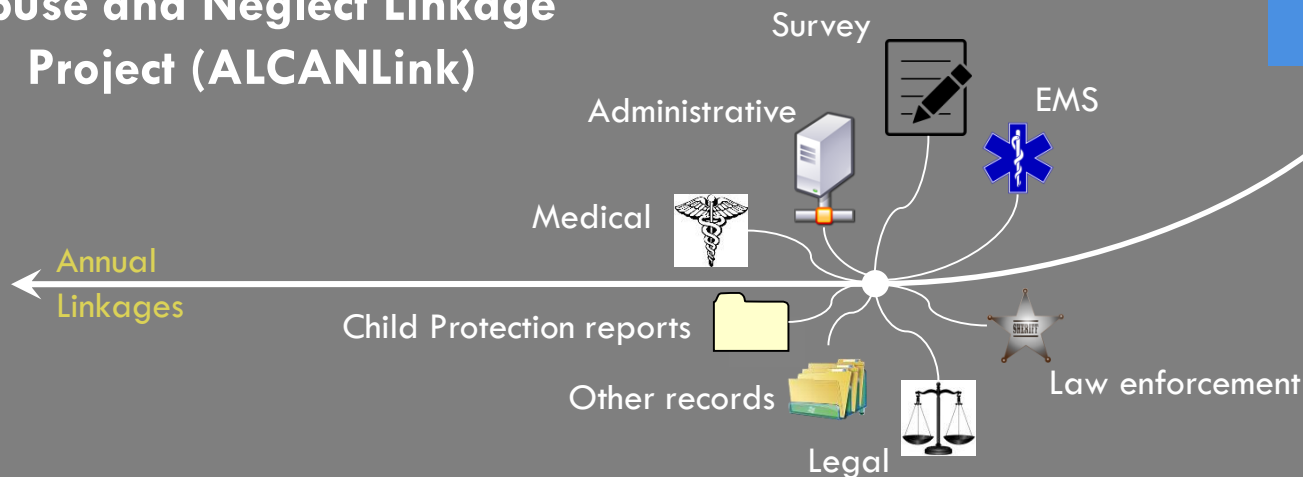


ALCANLink Mixed design approach

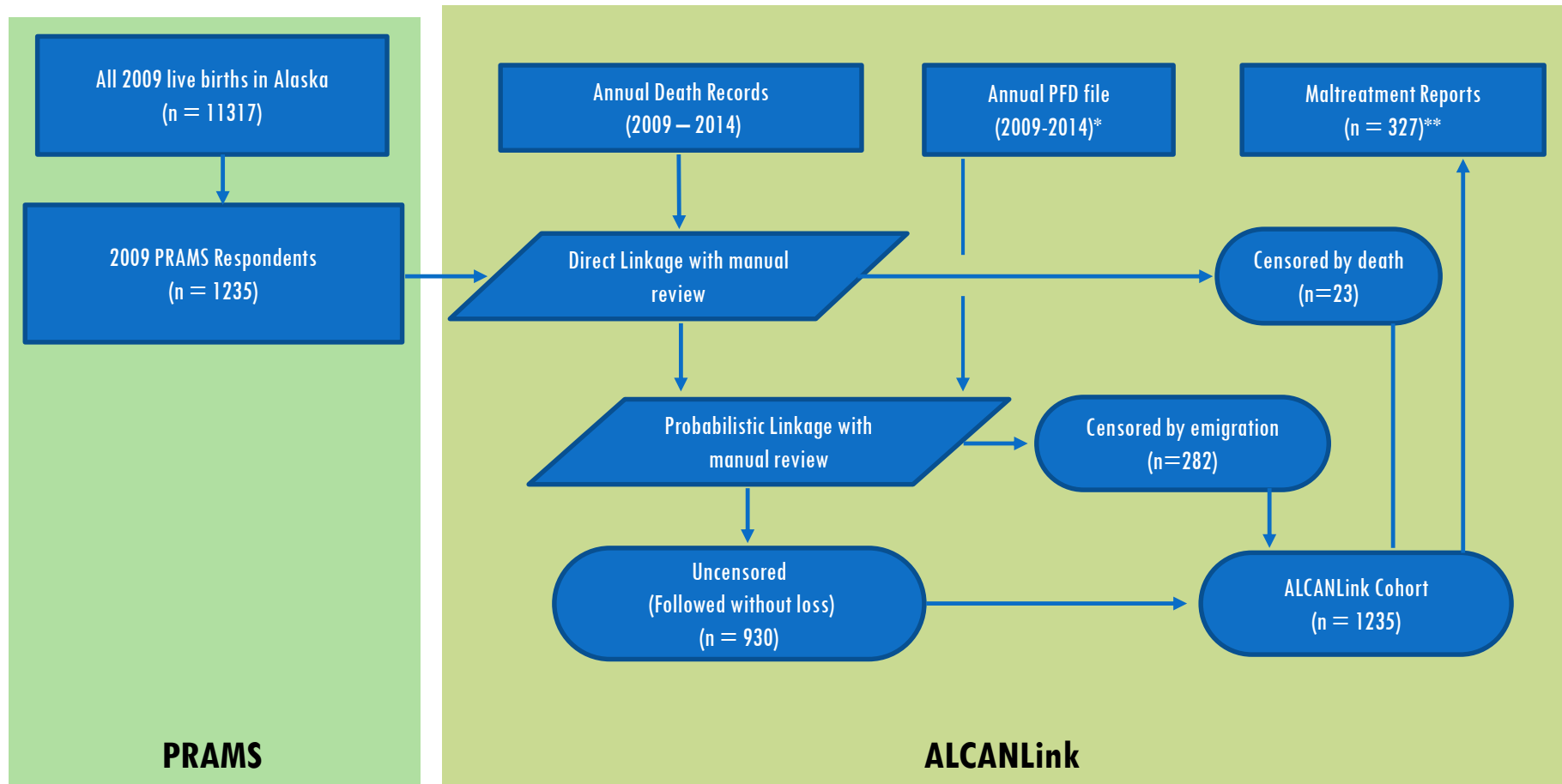
Alaska Pregnancy Risk Assessment Monitoring System (Alaska PRAMS)



Alaska Longitudinal Child Abuse and Neglect Linkage Project (ALCANLink)



ALCANLink Mixed design approach

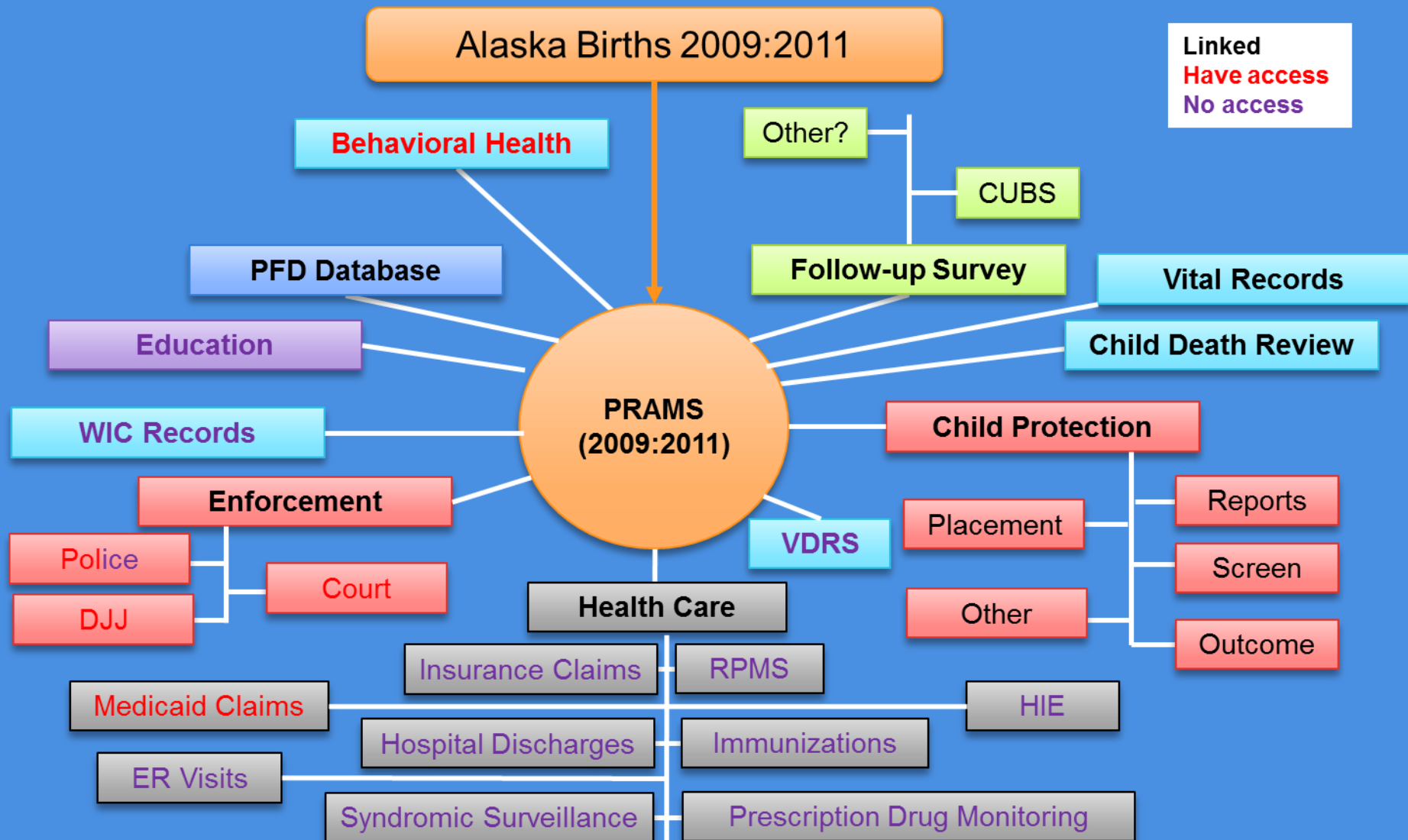


* Permeant Fund Dividend

**Report of maltreatment to either child protective services, child advocacy center, Anchorage Police Department, or the Child Death Review team

ALCANLink

Mixed design approach



Descriptive Epidemiology

2009-2011 PRAMS respondents

N = 3,549 (represents **49,634 births**)

51.5%_w Male, 48.5%_w Female

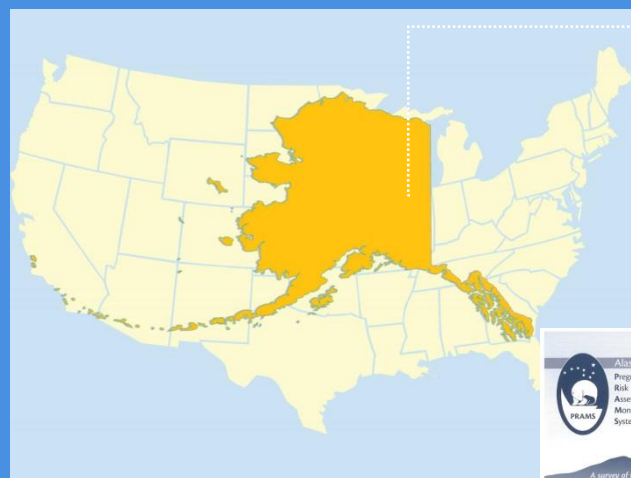
930 reported to OCS by 2015

- 404 reported only once,
- 178 only twice, and
- 348 three or more times

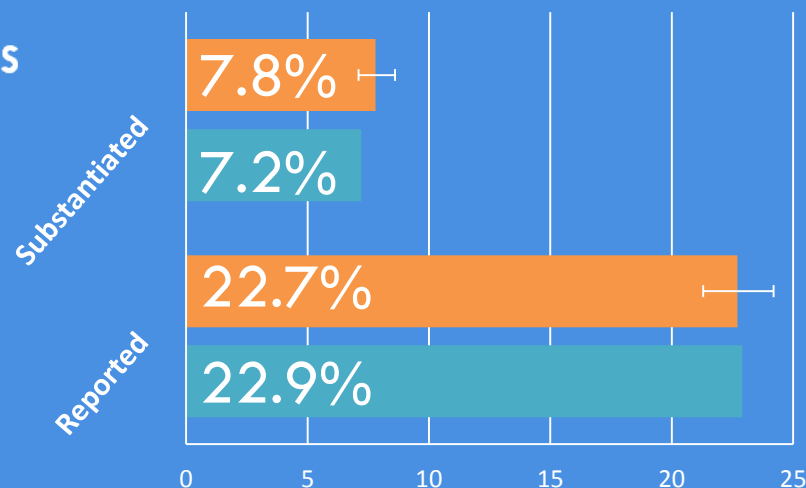
Comparison

Before age 5

Proportion of 2009 Alaska birth cohort



■ All Births
■ PRAMS



Weighted PRAMS estimates are nearly equivalent to full birth cohort linkage observation

Maltreatment occurrence



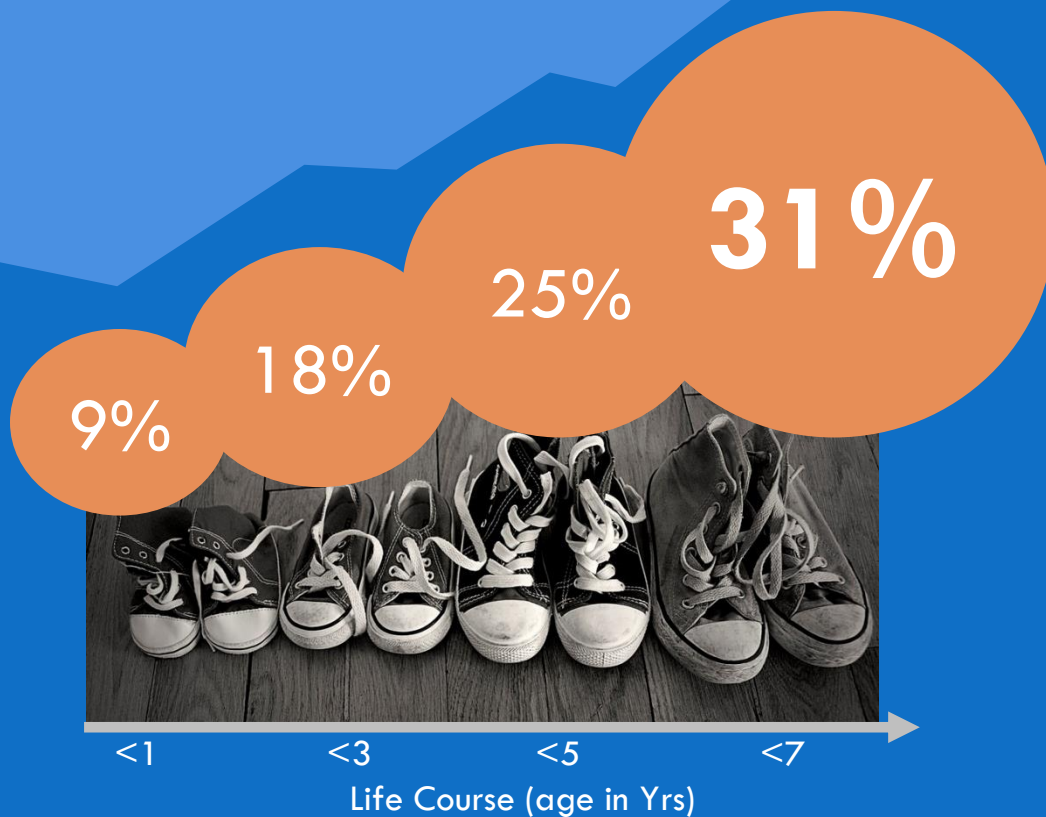
During 2015 in Alaska, ~ **10%** of children ages 0-6 years experienced a report for maltreatment

Maltreatment occurrence

During 2015 in Alaska, ~ **10%** of children ages 0-6 years experienced a report for maltreatment

**Incidence Proportion
(cumulative incidence)**

Among children born in 2009:2011, nearly 10,241 were reported for maltreatment before age 7



Maternal Stressors

21 % of children are born to mothers reporting 4 or more of these stressors

- Homeless
- Partner went to jail
- Being in a fight
- Lost job
- Partner lost job
- Argued with partner more
- Close family member very sick
- Separated/divorced
- Moved
- Someone close died
- Lot of bills couldn't pay
- Partner didn't want pregnancy
- Someone close had problem with drugs/drinking

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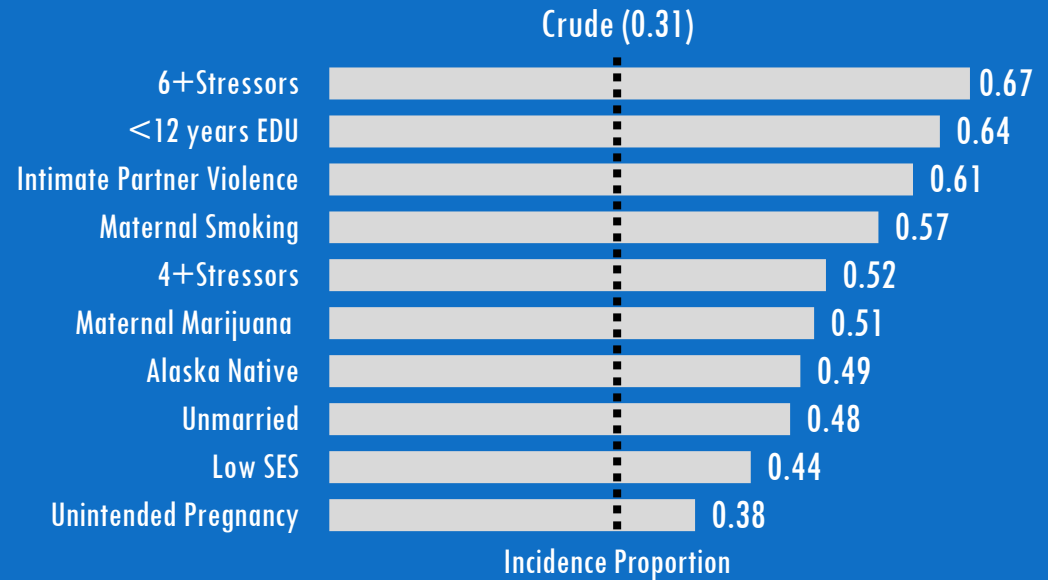
1 in 2

reported for maltreatment
before age 7 years



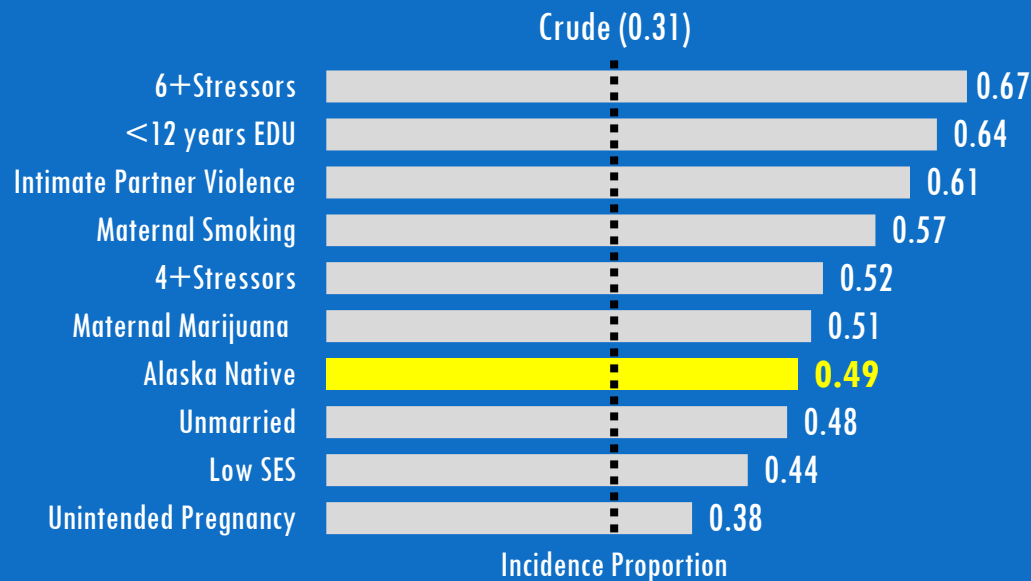
Variable risk

Children born with
different life
trajectories for
maltreatment



Variable risk

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Compared to
White Children,
Alaska Native
Children:

~3.0x the risk

Substance use
Income
Military
Maternal stressors

~1.5x the risk

Race doesn't define
risk, rather the
disproportionate load
of factors that are
modifiable and
preventable.

Predictive analytics

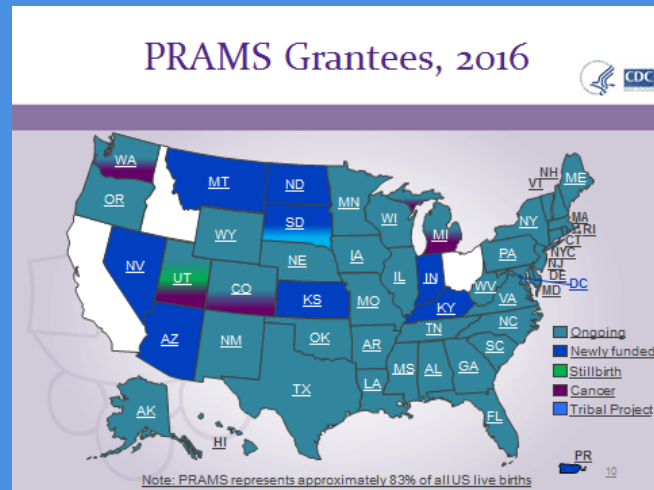


- Low income families (Mothers/births on Medicaid)
- Maternal substance use before/during pregnancy
- 6 or more of 13 maternal stressors reported
- Military families
- Unmarried mothers
- Low maternal age/education

- Multiple children
- History of maternal IPV
- Delayed/absent prenatal care
- Prior history with OCS or DJJ
- History of poor mental health

Replication

Developing implementation package



UNC
INJURY PREVENTION
RESEARCH CENTER

Partnership



Searching for funder to support the development of a flexible data platform



←..... STATUS ←.....

Small multi-state collaboration pilot (partners welcomed)



Goal to have majority of the package ready by mid 2018...



- Standardized methods
- Data sharing agreement templates
- Data platform for integration and linkage
- Linkage support and technical assistance
- Analysis support
- Tips for overcoming challenges (accessing CPS records)

Summary

If you don't know where you're at, it doesn't matter where you're going



- ☒ Linkage of entire birth cohorts with state child protection records is beneficial but may be challenging to standardize between states and resource prohibitive
- ☒ ALCANLink methodology can measure cumulative incidence, develop predictive models, and conduct comprehensive etiologic assessment
- ☒ Working to package and standardize ALCANLink methodology for multi-state collaboration and potentially nationally

Thank you

$$F_{(t)} = \int_0^t f_{(t)} dt = f_{(t)} \frac{dF_{(t)}}{dt} = 1 - e^{-H_t} = 1 - e^{-\sum_{k=1}^K \lambda_k t_k} \approx \frac{I * \bar{D}}{(I * \bar{D} + 1)} = R$$



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- Parrish JW, Lanier P, Newby-Kew A, Arvidson J, Shanahan M. Maternal Intimate Partner Violence Victimization Before and During Pregnancy and Postbirth Child Welfare Contact: A Population-Based Assessment. *Child Maltreat* 2016 Feb;21(1):26-36
- Parrish JW, Shanahan ME, Schnitzer PG, Lanier P, Daniels JL, Marshall SW. Quantifying Sources of Bias in Longitudinal Data Linkage Studies of Child Abuse and Neglect: Measuring the impact of outcome specification, linkage error, and partial cohort follow-up. (Accepted for publication in *Injury Epidemiology*)

