

# State Infrastructure and Child Welfare Surveillance

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- The experience of child abuse or neglect has a significant impact on life chances: mental and physical health, criminal/juvenile justice involvement.
- Intervention (or lack of intervention) to address child abuse or neglect likewise has a significant impact on life chances: family separation, continued exposure to maltreatment.

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- Organization of surveillance and services: increasing breadth and penetration of public bureaucracies increases probability of detection, likelihood of report
- Cultural definitions of maltreatment: normative beliefs about family structure and parenting coupled with salient group-specific stereotypes predict likelihood of report



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- **Predictions:** (1) Per capita full-time police officers positively related to frequency of reports filed by law enforcement. (2) Per capita public welfare staff positively related to frequency of reports filed by social welfare workers.

# Data

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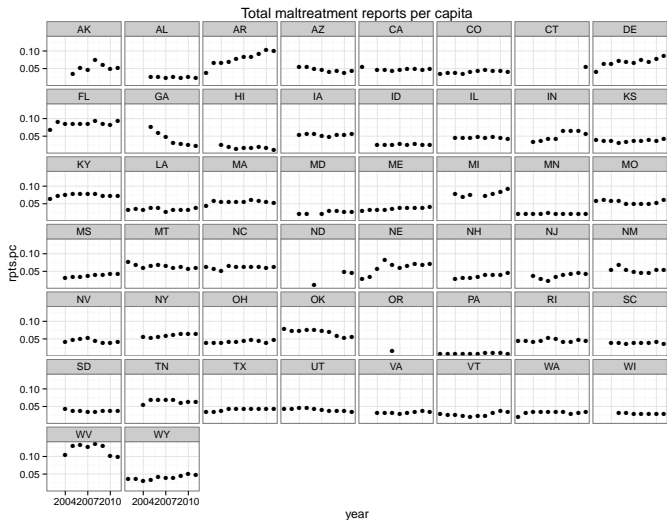
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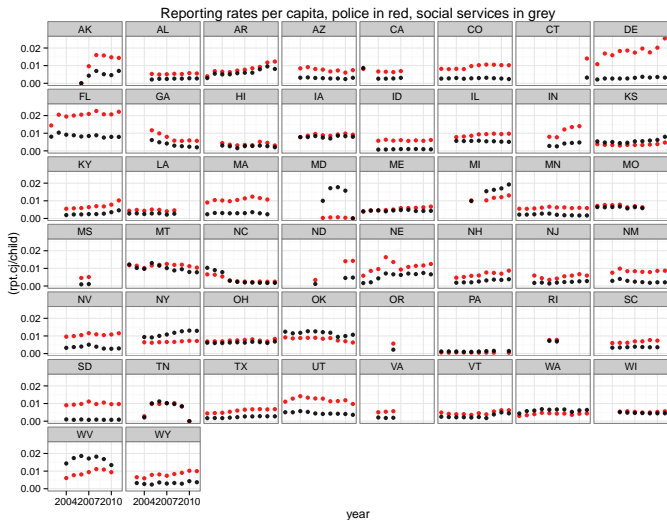
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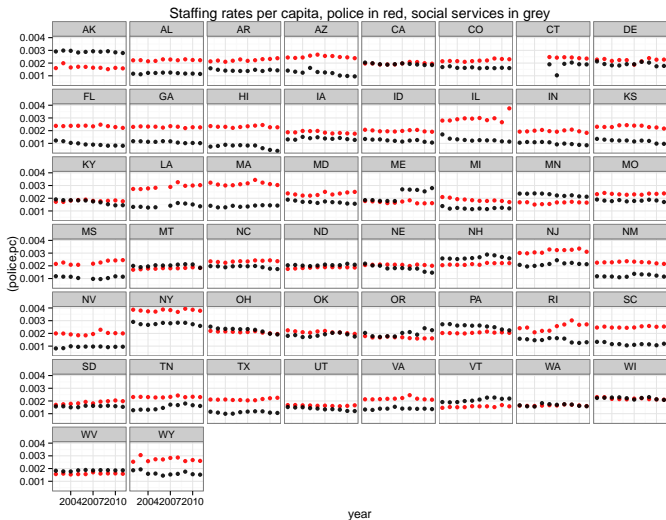
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# Missing data imputation

- 24% of observations missing NCANDS report source measure
- Reporting to NCANDS is voluntary, completeness of data reports when submitted varies between and within states. No state completely missing, two have only one observation (OR, CT). Assume data are missing at random.

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- Multiple imputation with Amelia 2
- $m = \frac{\text{missing cases}}{n}$

Multilevel model of rate of maltreatment reporting  $y$  for state  $s$  in year  $t$  with random intercepts  $\zeta_{0s}$  to allow for unit-level variation in initial reporting rates and random slopes  $\zeta_{1s}$  to allow for unit-level variation in the linear relationship between time and reporting rates.  $\mathbf{x}$  is a matrix of state-year level linear predictors of  $\mathbf{y}$  and  $\beta$  is a vector of fixed effect parameters.

$$y_{st} = \pi_{0s} + \pi_{1s} \text{Year}_{st} + \beta \mathbf{x}_s + \varepsilon_{st}$$

$$\pi_{0s} = \gamma_{00} + \zeta_{0s}$$

$$\pi_{1s} = \gamma_{10} + \zeta_{1s}$$

$$\varepsilon_{st} \sim N(0, \sigma_\varepsilon^2) \left[ \begin{array}{c} \zeta_{0i} \\ \zeta_{1i} \end{array} \right] \sim N \left( \left[ \begin{array}{c} 0 \\ 0 \end{array} \right], \left[ \begin{array}{cc} \sigma_0^2 & \sigma_{01} \\ \sigma_{01} & \sigma_1^2 \end{array} \right] \right)$$



# Models

I specify the following series of models, with year centered at 2002, and all other measures scaled as mean-centered z-scores:

- Unconditional growth:

$$\frac{\text{Police reports}_{st}}{\text{Child pop}_{st}} = \pi_{0s} + \pi_{1s}(\text{Year} - 2002) + \varepsilon_{st}$$

$$\frac{\text{Social Service reports}_{st}}{\text{Child pop}_{st}} = \pi_{0s} + \pi_{1s}(\text{Year} - 2002) + \varepsilon_{st}$$

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- With state-year predictors:
  - For police reporting: police officers per capita, crime per capita, incarceration per capita, % Black population, child poverty per capita, unemployment rate, single parent families per capita
  - For social services reporting: social service workers per capita, TANF enrollment per children in poverty, WIC enrollment per children in poverty, % Black population, child poverty per capita, unemployment rate, single parent families per capita

# Model Results

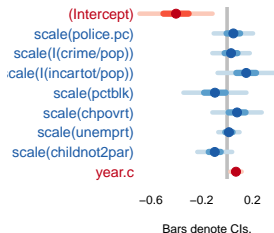
**Table:** Unconditional Growth of Police Maltreatment Reports per capita (1) and Social Services reports per capita (2)

	scale(l(rpt.cj/child)) (1)	scale(l(rpt.socserv/child)) (2)
year.c	-0.011	-0.053*
Constant	0.049	0.236
<i>N</i>	496	496
BIC	1,224.093	1,264.133

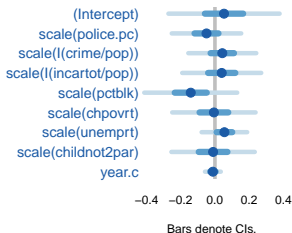
\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

# With Employment and Demographic Predictors

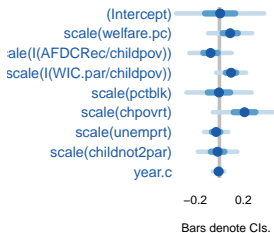
### Police Reporting w/o MI



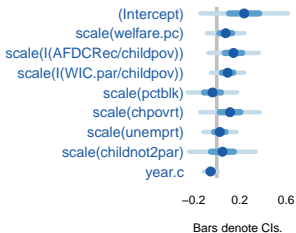
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### Social Services w/o MI



### Social Services w/ MI



**Table:** Predictors of Police Maltreatment Reports per capita

	scale(l(rpt.cj/child))
scale(police.pc)	-0.049
scale(l(crime/pop))	0.043
scale(l(incartot/pop))	0.040
scale(pctblk)	-0.142
scale(chpovrt)	-0.006
scale(unemprt)	0.055
scale(childnot2par)	-0.011
year.c	-0.012
Constant	0.053
<i>N</i>	496
BIC	1,283.481

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table:** Predictors of Social Services reports per capita

	scale(I(rpt.socserv/child))
scale(welfare.pc)	0.077
scale(I(AFDCRec/childpov))	0.144
scale(I(WIC.par/childpov))	0.094
scale(pctblk)	-0.036
scale(chpovrt)	0.115
scale(unemprt)	0.026
scale(childnot2par)	0.049
year.c	-0.053
Constant	0.237
<i>N</i>	496
BIC	1,314.728

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## Revisiting predictions

- No evidence that policing infrastructure explains variation in reporting rates.

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- Mechanism of infrastructure → reporting likely sub-state level. County-level analysis (huge measurement issues)
- Alternative measures for infrastructure of surveillance, services
- Variation in effects between groups of families (class, race, family structure, etc)
- Potential measurement problem: within-state missingness of reports, imputation / diagnosis of missingness likely needed before aggregation - only counting reports where reporter is known

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- NCANDS only includes children subject to reports, lack information on selection into reporting.
- Policy is likely an endogenous cause of maltreatment.



The analyses presented in this publication were based on data from the National Child Abuse and Neglect Data System (NCANDS) Child File. These data were provided by the National Data Archive on Child Abuse and Neglect at Cornell University, and have been used with permission. The data were originally collected under the auspices of the Children's Bureau. Funding was provided by the Children's Bureau, Administration on Children, Youth and Families, Administration for Children and Families, U.S. Department of Health and Human Services. The collector of the original data, the funding agency, NDACAN, Cornell University, and the agents or employees of these institutions bear no responsibility for the analyses or interpretations presented here. The information and opinions expressed reflect solely the opinions of the authors.