

# Reducing Child Maltreatment: The Role of Mandatory Reporting Laws

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AEA

# Motivation

- Every year referrals to child protective services involve 6.6M children.
- Around 3.2M of those children are subject to an investigated report.
- In 2017 there were 674,000 victims of child maltreatment.
- Five children die every day from child abuse and neglect.
- By age 18, 30 percent of all children will have been victims of child maltreatment (Wildeman et al. 2014, Finkelhor et al. 2013).

# Motivation

Correlation evidence shows that children who experience child abuse and neglect are:

- Three times more likely to die in childhood (Sabotta, E. and Davis, R. 1992)
- 9 times more likely to become involved in criminal activity (DOJ, 1999 and Currie and Tekin, 2012).
- More likely to experience mental health problems (Mills et al. 2013, Kisely et al. 2018)
- More likely to abuse alcohol and drugs (Jaudes et al. 1995).

Early detection is key in stopping maltreatment and in helping children recover from its negative effects

- Yet factors that drive early detection remain understudied

# This Paper

- Studies the first policy attempt to reduce domestic child abuse
  - ▶ In 1962, Kempe identified the so-called “Battered-Child Syndrome”
  - ▶ Rapid change in legislation: between 1962 and 1973 all states passed some mandatory reporting law
- Identification strategy
  - ▶ Exploit staggered introduction of child maltreatment reporting laws
  - ▶ Event-study research design
- Data
  - ▶ State-level data on mortality by age
  - ▶ Individual-level data on height and mental health outcomes

# The Battered Child Syndrome: a “medical discovery”

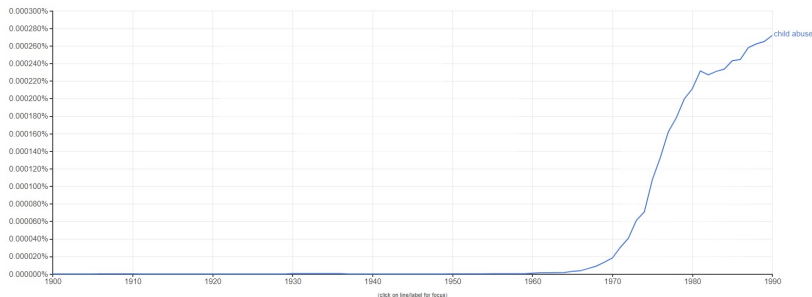
- Published in 1962 by Kempe and Silverman in JAMA.
  - Study a seemingly-inexplicable pattern of injuries in young children
  - Coin the term “battered child” to describe a clinical condition in young children who had been victims of serious physical abuse
- Prior to this publication, medical schools provided little training on child abuse (Fontana, V. J., 1972)
- After this medical “discovery” child abuse was recognized as a regular and recurring aspect of family life

# The history of child maltreatment awareness

## Google Books Ngram Viewer

Graph these comma-separated phrases:   case-insensitive

between  and  from the corpus  with smoothing of  [Search lots of books](#)



# Increase awareness of child abuse and need of action

CONCERN IS RISING OVER CHILD ABUSE  
By MARTIN TOLCHIN  
New York Times (1923-Current file), Mar 21, 1964; ProQuest  
pg. 54

## CONCERN IS RISING OVER CHILD ABUSE

Until recently, physicians took parental accounts of such accidents at face value. Now they are more suspicious. Advances in X-ray interpretation have advanced medical detective work, and such investigations led the parents of the children in the three above cases to confess to child-beating.

### Legal Steps Urged

A sharp increase in the reported number of victims of what pediatricians term "the battered-child syndrome" has led to the introduction of 13 bills in the current session of the Legislature. The measures would compel physicians to report cases of child abuse to police departments and welfare agencies and exempt the physicians from charges of defamation of character.

## LAW TO STOP ABUSE OF CHILDREN URGED

The Legislature was urged yesterday to enact a law aimed at ending abuse of children.

The appeal was made by the Brooklyn Society for the Prevention of Cruelty to Children, the Citizens Committee for Children of New York, the Liberal party of New York State and the New York Council on Child Psychiatry.

The appeal said it was not enough to pass legislation requiring physicians to report suspected cases of child abuse because the doctors would be justifiably reluctant to bring in the police unless they could be assured of further investigation.

The groups suggested that the legislation be passed on the following principals:

¶Protection of the child must be the prime concern.

¶Suspected cases of child abuse should be required to be reported to public welfare officials.

¶The public welfare official or an appropriate child protective agency should make an investigation.

¶A central register of all cases of suspected child abuse should be kept.

The group also urged that the physician or hospital that makes the report should be granted immunity from civil or criminal suits in reporting suspected child abuse.

Laws Needed in Child Beatings: You and Your Child  
Beck, Joan  
Chicago Tribune (1963-1996); Nov 5, 1964; ProQuest Historical Newspapers: Chicago Tribune  
pg. D2

## Laws Needed in Child Beatings

BY JOAN BECK

**T**HERE'S A murderer in my waiting room," wrote the doctor. "Six months ago she succeeded in murdering her 16-month-old son

**What Doctor Saw**

"What I saw in that hospital crib not only jolted me emotionally, it benumbed my diag-

at least two ribs. Three of his baby incisors were broken; a fourth had been knocked out entirely." He had two tremen-



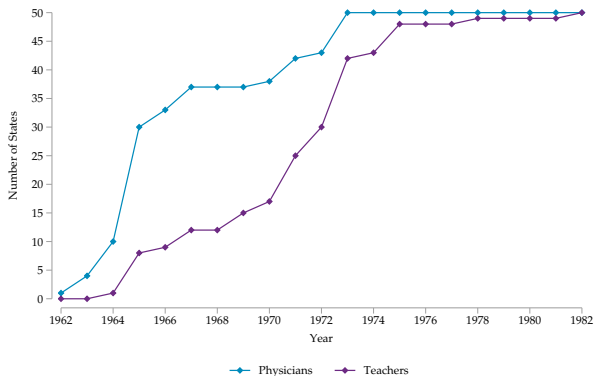


# Child Abuse Reporting Laws

First policy attempt to identify and stop child maltreatment

- Mandatory reporting of child maltreatment
- Define the reporting duty of professionals: physicians, teachers, police officers
- Focus primarily on physical abuse
- Provide immunity for criminal and/or civil liability
- Abrogate physical-patient privilege and spouse privilege
- Impose penalties for failure to report
- Between 1962 and 1973 all states passed *some* mandatory reporting law

# Child Abuse Reporting Laws



*Notes:* This figure shows the number of states with an enacted reporting law that mandates: (i) physicians to report (blue) and (ii) teachers to report (violet).

- Early-adopters are more likely to only mandate physicians to report
- Late-adopters are more likely to enact “comprehensive” reporting laws

# Data

## Regulatory aspects:

- Self-collected from States Session laws.
- Dates, who reports, immunity, waivers, penalty
- *Abuse definitions and central registry formation*

## Short-term outcomes:

- Mortality by age of death: infants, 1 to 9 years old
  - Multiple Cause-of-Death Mortality Data from the National Vital Statistics System (NCHS)
  - NBER tabulations for 1959 - 1990
  - Digitalized the period 1951 - 1959: *by race*

# Data

- Individual data from the National Health Examination Survey (NHES)
  - Socio-demographic variables, participation in food programs
  - Physical health: height, weight, weight at birth
  - Mental health
- Individual data from National Survey on Drug Use and Health (NSDUH)
  - Mental health, family relationships, risky behaviors, and drug and alcohol use for the cohorts born from 1959 to 1990.
- Archival individual level data for Maryland.

## Empirical Strategy: Event study estimation

$$y_{st} = \sum_{\tau=-5}^{10} \delta_{\tau} 1(\text{Years after law} = \tau) + \text{BIN}_{low} + \text{BIN}_{high} + \beta' X_{st} + \alpha_s + \alpha_t + \varepsilon_{st}$$

$\delta_{\tau}$  captures the effect of the mandatory reporting law  $\tau$  years since (until) the law's adoption

- $y_{st}$  outcome of interest, e.g. infant mortality rate
- *Years after law*: difference between calendar year ( $t$ ) and year of implementation of the law  $t^0$
- $X_{st}$  state  $\times$  time controls: population/number of births, unemployment rate, share of white people, share of black people, share of low-birth born babies.
- $\alpha_s$  state fixed effects
- $\alpha_t$  time fixed effects
- $\text{BIN}_{low}$  takes the value of one if *Time to treatment*  $\in [-10, -6]$
- $\text{BIN}_{high}$  takes the value of one if *Time to treatment*  $\in [11, 15]$

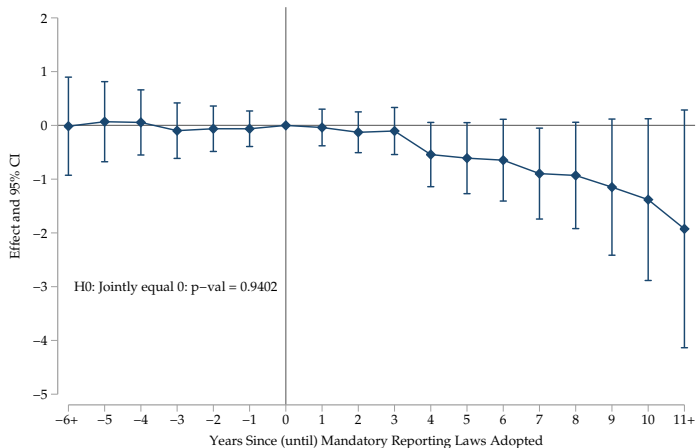
# Empirical Strategy: Semi-parametric event study estimation

$$y_{st} = \text{BIN}_{low} + \sum_{\tau=-5}^0 \delta_{\tau} 1(\text{Years after law} = \tau) + \delta_{+3} 1(\tau \in [1, 3]) + \delta_{+6} 1(\tau \in [4, 6]) \\ + \delta_{+9} 1(\tau \in [7, 9]) + \delta_{+12} 1(\tau \in [10, 12]) + \delta_{+15} 1(\tau \in [13, 15]) + \alpha_s + \alpha_t + \varepsilon_{st}$$

$\delta_{\tau}$  captures the effect of the mandatory reporting law  $\tau$  years since (until) the law's adoption

- $y_{st}$  outcome of interest, e.g. infant mortality rate
- $\alpha_s$  state fixed effects
- $\alpha_t$  time fixed effects

# Event-study estimates for Infant (<1 year old) Mortality Rate



**Notes:** The figure shows event-study estimates. Dependent variable is the infant mortality rate (per 1,000) by year. 6+ states for 6 to 10 years until the law was adopted. 11+ states for 11 to 15 years since the law was adopted. The specification includes time and state fixed effects but not other state-time varying control variables.

## Declines in infant mortality rate starting after 3 years of adoption

	Infant Mortality Rate (1)	Effect size (2)
1 - 3 years later	-0.0799 (0.161)	-0.350
4 - 6 years later	-0.584* (0.307)	-2.556
7 - 9 years later	-0.967** (0.469)	-4.232
10 - 12 years later	-1.576* (0.894)	-6.897
13 - 15 years later	-2.022 (1.336)	-8.849
Mean IMR (at base)	22.85 deaths per 1,000 infants	
Adj R-squared	0.9497	
Sample size	1,274	
State and time FE: Yes	State x time controls: No	
$H_0$ : All post-policy coefficients jointly = 0 p-val = 0.1777		

Notes: Dependent variable is the infant mortality rate (per 1,000) by year. Coefficients are reported as the change in the infant mortality rate due to the adoption of mandatory reporting law the stated number of years ago. Column (2) presents the ratio between the estimated coefficient and the mean IMR in the base year. Standard errors are clustered at the state level.



## Adding control variables in the semi-parametric specification

	IMR (1)	Effect size (2)	IMR (3)	Effect size (4)
1 - 3 years later	-0.0799 (0.161)	-0.35	-0.091 (0.185)	-0.398
4 - 6 years later	-0.584* (0.307)	-2.556	-0.678** (0.334)	-2.625
7 - 9 years later	-0.967** (0.469)	-4.232	-0.897* (0.467)	-3.5
10 - 12 years later	-1.576* (0.894)	-6.897	-1.481* (0.814)	-6.126
13 - 15 years later	-2.022 (1.336)	-8.849	-1.970* (1.111)	-8.313
Mean IMR (at base)	22.85			
Adj R-squared	0.9415		0.9497	
Sample size	1274			
State and time FE: Yes			State and time FE: Yes	
State x time controls: No			State x time controls: Yes	

*Notes:* Dependent variable is the infant mortality rate (per 1,000) by year. Coefficients are reported as the change in the infant mortality rate due to the adoption of mandatory reporting law the stated number of years ago. Columns (2) and (4) present the ratio between the estimated coefficient and the mean IMR in the base year. Standard errors are clustered at the state level.

# Effects by penalty for not reporting



**Notes:** The figure shows event-study estimates. Dependent variable is the infant mortality rate (per 1,000) by year. 6+ states for 6 to 10 years until the law was adopted. 11+ states for 11 to 15 years since the law was adopted.

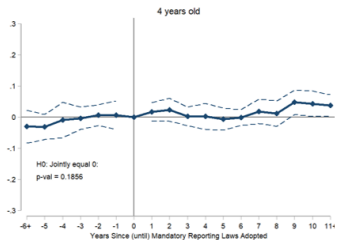
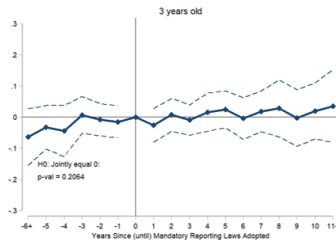
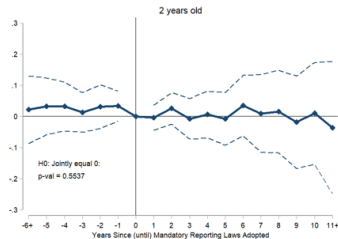
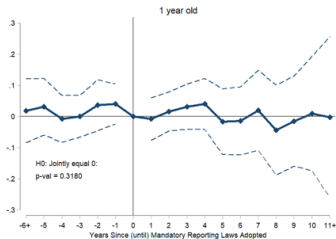
## States that impose penalties for not reporting drive the aggregate effect

	Penalty (1)	Effect size (2)	No Penalty (3)	Effect size (4)
1 - 3 years later	0.0645 (0.238)	0.30	-0.364 (0.308)	-1.69
4 - 6 years later	-0.903* (0.483)	-4.17	-0.6 (0.614)	-2.78
7 - 9 years later	-1.728** (0.794)	-7.98	-0.704 (0.759)	-3.25
10 - 12 years later	-2.958** (1.338)	-13.68	-0.682 (1.224)	-3.15
13 - 15 years later	-4.304** (1.923)	-19.94	-0.386 (1.613)	-1.76
Mean IMR (at base)	21.56		24.26	
Adj R-squared	0.947		0.937	
Sample size	675		595	
State and time FE: Yes				
State x time controls: No				

*Notes:* Dependent variable is the infant mortality rate (per 1,000) by year. Coefficients are reported as the change in the infant mortality rate due to the adoption of mandatory reporting law the stated number of years ago. Column (2) presents the ratio between the estimated coefficient and the mean IMR in the base year. Standard errors are clustered at the state level.

# Older Ages

## Mortality Rate by Age (1 to 4 years old) and Adoption of Mandatory Reporting Laws



**Effects of Mandatory Reporting on Mortality. Children aged 1 to 4 years old**

Mortality rate	1 year old (1)	2 years old (2)	3 years old (3)	4 years old (4)
1 year later	-0.008 (0.034)	-0.004 (0.020)	-0.026 (0.027)	0.018 (0.015)
2 years later	0.016 (0.031)	0.026 (0.025)	0.008 (0.026)	0.024 (0.018)
3 years later	0.032 (0.036)	-0.008 (0.033)	-0.009 (0.024)	0.003 (0.015)
4 years later	0.040 (0.041)	0.006 (0.037)	0.016 (0.031)	0.002 (0.021)
5 years later	-0.016 (0.052)	-0.007 (0.042)	0.025 (0.029)	-0.006 (0.018)
6 years later	-0.014 (0.054)	0.035 (0.048)	-0.004 (0.033)	-0.001 (0.013)
7 years later	0.020 (0.064)	0.010 (0.062)	0.019 (0.033)	0.019 (0.019)
8 years later	-0.044 (0.072)	0.016 (0.066)	0.028 (0.045)	0.011 (0.020)
9 years later	-0.015 (0.072)	-0.018 (0.074)	-0.002 (0.045)	0.0477** (0.020)
10 years later	0.010 (0.091)	0.010 (0.081)	0.020 (0.045)	0.0434** (0.020)
> 10 years later	-0.002 (0.128)	-0.036 (0.105)	0.036 (0.058)	0.0379** (0.017)
N	1,273	1,222	1,171	1,122
Mean MR	1.4927	0.9582	0.7719	0.6102
SD mean MR	0.4688	0.2364	0.2519	0.1801
F-test of joint significance (p-val)				
Pre-policy period	0.318	0.5537	0.2064	0.1856
Post-policy period	0.0187	0.1094	0.2012	0.0119
State FE	Yes	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes	Yes
Other covariates	No	No	No	No

# School age children and reporting of teachers

**Effects of Mandatory Reporting on Mortality. Children aged 5 to 9 years old**

Mortality rate	5 years old (1)	6 years old (2)	7 to 9 years old (3)
1 year later	0.003 (0.015)	0.002 (0.015)	0.007 (0.018)
2 years later	-0.006 (0.018)	-0.001 (0.022)	0.021 (0.019)
3 years later	-0.029 (0.022)	-0.010 (0.023)	0.022 (0.022)
4 years later	-0.012 (0.029)	0.032 (0.028)	0.011 (0.024)
5 years later	-0.013 (0.028)	0.015 (0.025)	-0.004 (0.025)
6 years later	-0.031 (0.037)	-0.008 (0.029)	-0.007 (0.026)
7 years later	-0.024 (0.039)	0.020 (0.036)	0.025 (0.029)
8 years later	0.003 (0.048)	0.015 (0.033)	0.031 (0.035)
9 years later	-0.008 (0.049)	0.037 (0.036)	0.029 (0.036)
10 years later	-0.016 (0.057)	0.042 (0.043)	0.021 (0.040)
> 10 years later	-0.018 (0.071)	0.032 (0.048)	0.045 (0.043)
N	1,113	1,110	1,059
Mean MR	0.4955	0.4392	0.4103
SD mean MR	0.1686	0.1671	0.1254
F-test of joint significance (p-val)			
Pre-policy period	0.7681	0.3230	0.5608
Post-policy period	0.2224	0.3431	0.3084
State FE	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes
Other covariates	No	No	No

## Conclusions and next steps

- Preliminary evidence of a reduction on infant mortality rate
- Preliminary evidence of no effects on infant mortality rates of children aged 1 to 8 years
- Next steps:
  - ▶ Other outcomes: Use individual level data from NSDUH and NHES.
  - ▶ Provide evidence on reporting.

Thank you