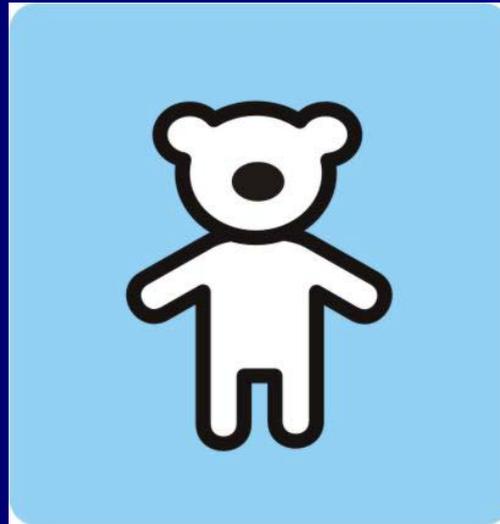


THE URBAN INSTITUTE

Declining Child Mortality & Continuing Racial Disparities in the Era of the Medicaid/SCHIP Insurance Coverage Expansions



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Presentation Outline

- Background
- Methods
- Analysis
- Discussion
- Conclusions



Background

- 1900 – Present: Declines in child mortality in nearly all countries around the world
- Declines across many major causes of death
 - Infectious disease
 - Unintentional injuries
 - Asthma
 - Childhood Cancer
- Health disparities persist: racial/ethnic, SES, access



Background, cont.

- US public insurance coverage expansions for children
 - Medicaid (OBRA 86, 87, 89, 90)
 - Decoupling of welfare + Medicaid (PRWOA 96)
 - SCHIP (BBA 97)
- 2002: majority US states expanded coverage up to 200% FPL through SCHIP
- Dearth of knowledge on child mortality during Medicaid/SCHIP expansions + disparities



Methods

Mortality Multiple Cause-of-Death Files, 1985-2004 National Center for Health Statistics

- Select all children under age 18
- Calculate number of deaths from “**natural**” (disease-related) and “**external**” (injuries, homicide, suicide) causes by:
 - state
 - year
 - race categories (black, white, other)
 - age group (1-5, 6-11, 12-17)
- Calculate **mortality rates** per 100,000 children by state, year, race and age group by using **three-year moving averages** (for 1986-2003)



Empirical Specification

- Test relationship between fraction of children simulated eligible for Medicaid/SCHIP and mortality by state (s), year (t), race (r), and age group (a)

$$\text{Log}(\text{Mortality_rate}_{s,t,r,a}) = \beta_0 +$$

$$\beta_1 \text{ Fraction Medicaid/SCHIP Eligible}_{s,t,r,a}$$

$$+ \beta_3 \text{ Age}_a + \beta_4 \text{ Race}_r + \beta_5 S_s + \beta_6 T_t + \epsilon_{s,t,r,a}$$

N = 8,262 (one observation each for 51 states, 18 years, 3 age groups, 3 race categories)

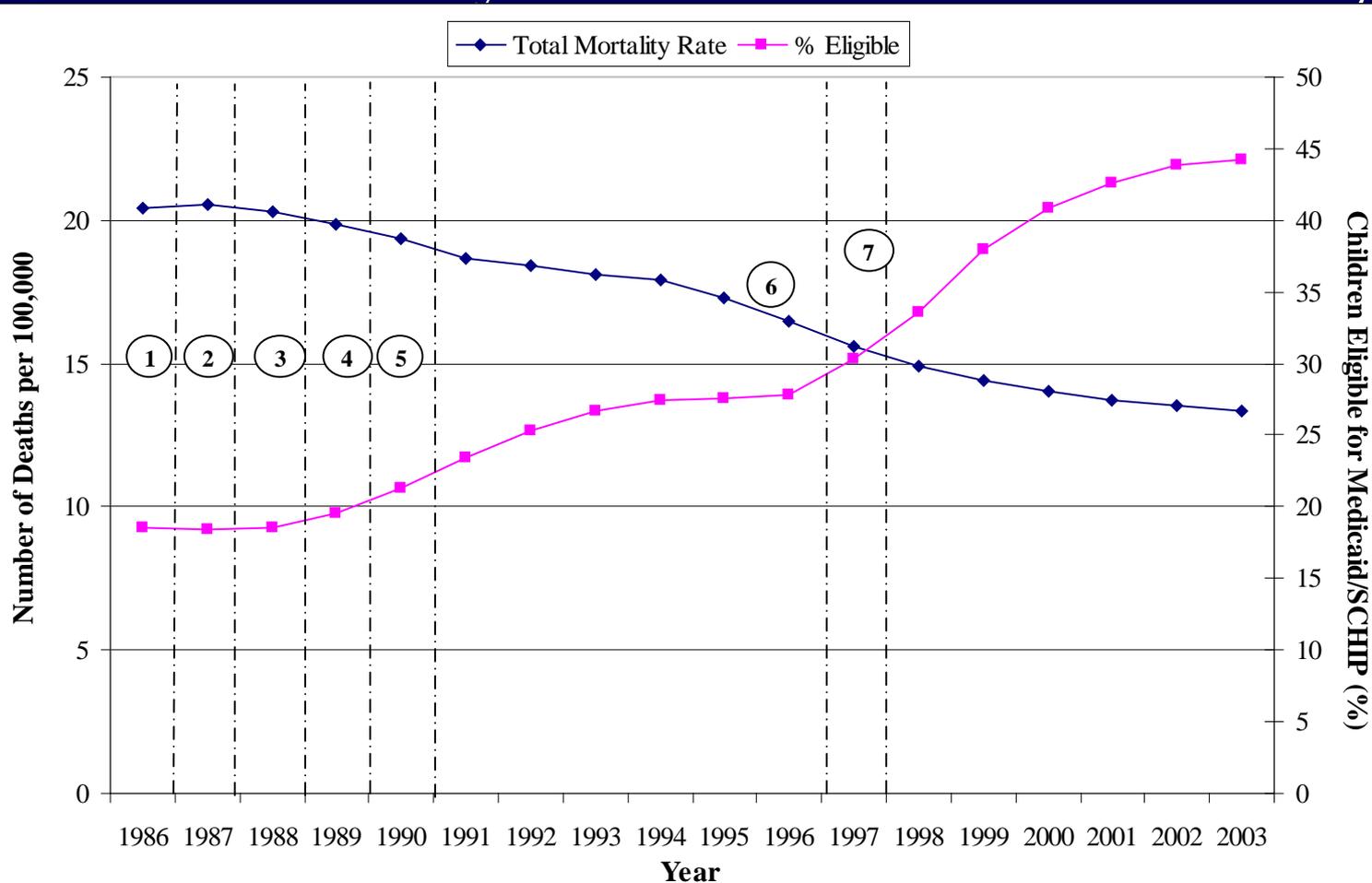


Fraction Medicaid/SCHIP Eligible

- Used fraction of children simulated eligible for Medicaid/SCHIP by state, year + age
 - Currie J, Decker SL, Lin W. 2008. “Has Public Health Insurance for Older Children Reduced Disparities in Access to Care and Health Outcomes?” Journal of Health Economics 27 (6): 1567-1581.
- Fraction obtained by sampling children by age + calendar year from the Current Population Survey, then calculating fraction of this fixed group of children who would be eligible for Medicaid/SCHIP in each state.



US Child Mortality + Medicaid/SCHIP Child Eligibility



- (1) Omnibus Budget Reconciliation Act of 1986
- (2) Omnibus Budget Reconciliation Act of 1987
- (3) Medicare Catastrophic Coverage Act of 1988
- (4) Omnibus Budget Reconciliation Act 1989
- (5) Omnibus Budget Reconciliation Act 1990
- (6) Personal Responsibility and Work Opportunity Act of 1996
- (7) Balanced Budget Act of 1997



Mortality Rate for U.S. Children: Year, Age + Race (Deaths per 100,000)

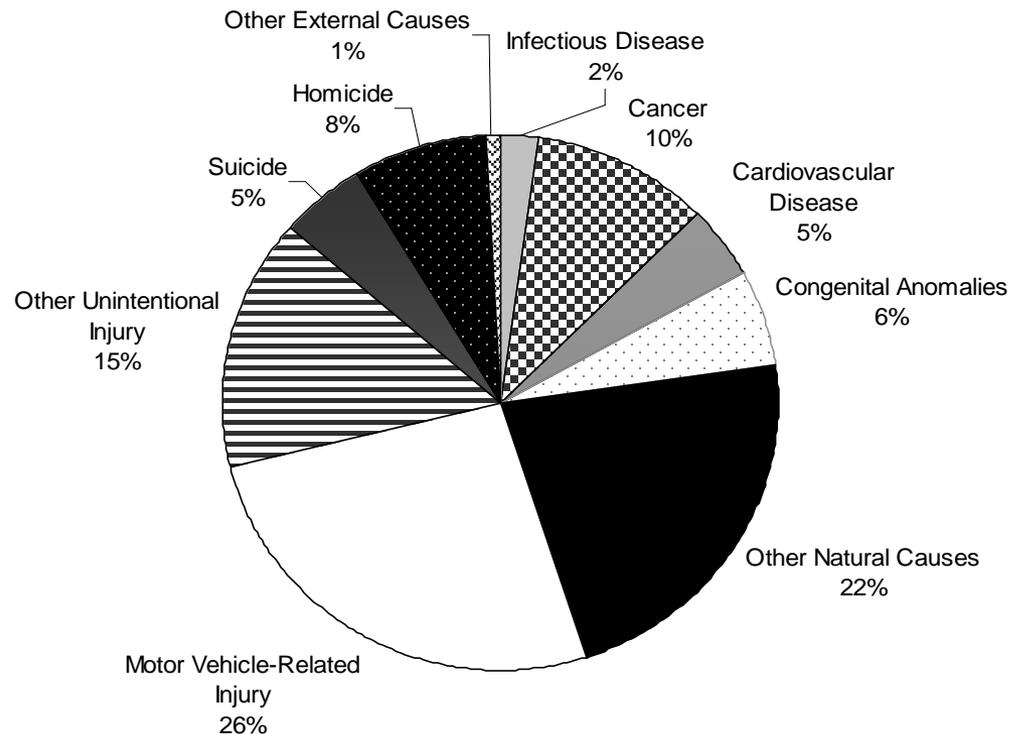
	1986				2003				1986 - 2003
	White	Black	B/W Disparity	B/W Ratio	White	Black	B/W Disparity	B/W Ratio	Absolute B/W Disparity
Natural Cause Mortality	15.4	23.8	8.3	1.54	10.7	16.6	6.0	1.56	-2.4
Ages 1-5	23.3	39.6	16.3	1.70	14.3	23.6	9.2	1.65	-7.1
Ages 6-11	10.5	14.3	3.7	1.36	7.7	11.2	3.5	1.46	-0.2
Ages 12-17	13.5	19.6	6.1	1.45	10.8	16.6	5.9	1.54	-0.3
External Cause Mortality	23.1	30.4	7.2	1.31	14.3	18.8	4.5	1.31	-2.8
Ages 1-5	19.2	34.8	15.7	1.82	11.2	18.9	7.7	1.69	-7.9
Ages 6-11	10.9	18.9	8.0	1.74	5.7	10.1	4.4	1.76	-3.6
Ages 12-17	38.0	37.6	-0.4	0.99	25.0	27.1	2.1	1.08	2.5

Note: Natural cause mortality includes ICD-9 codes 001-799 and ICD-10 codes A00-R99; external cause mortality includes ICD-9 codes E800-E999 and ICD-10 codes V00-Y89.



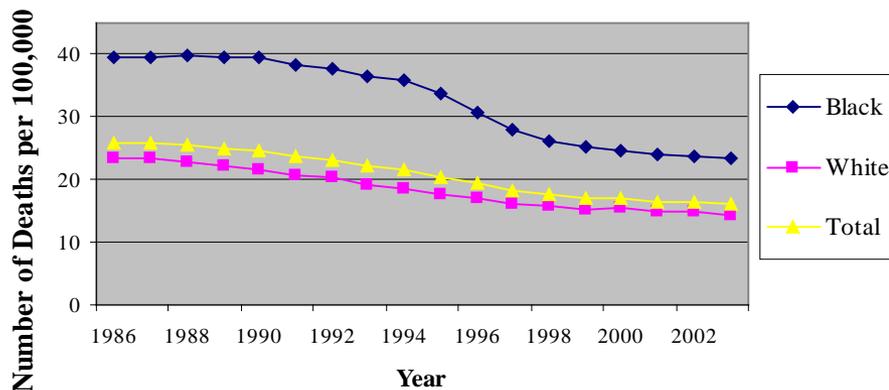
Causes of Death: Children Aged 1 - 17 in 2003

Causes of Deaths Among Children Aged 1 through 17 in 2003
(N = 18,204 Deaths)

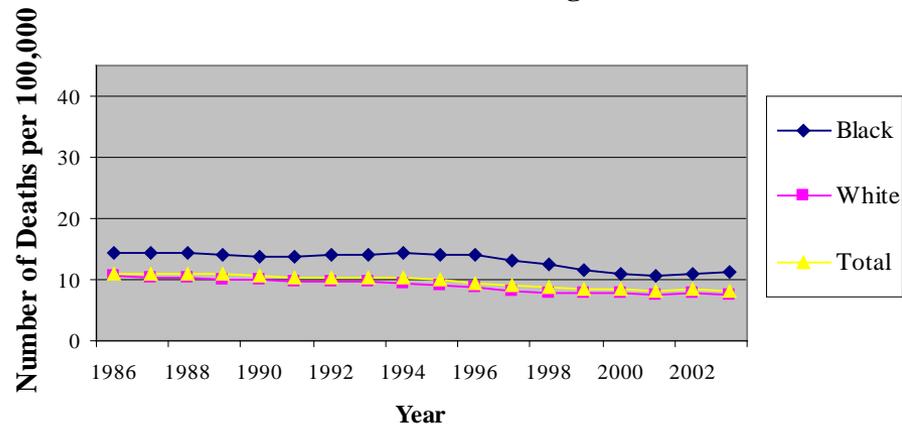


Mortality for Natural Causes of Death: Age + Year

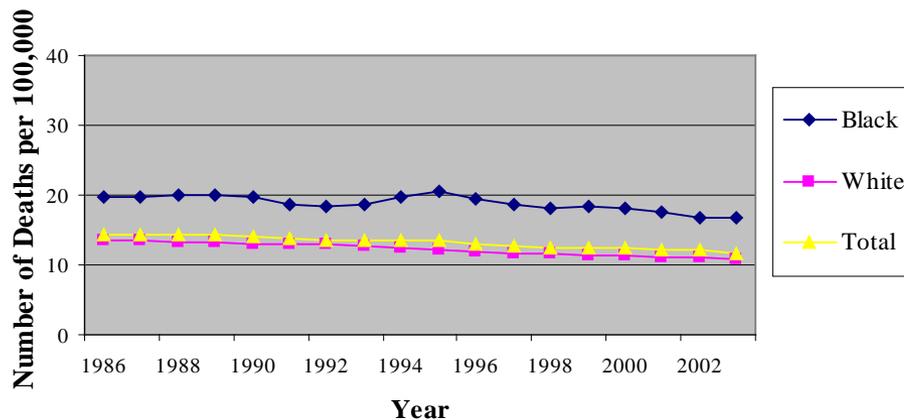
Natural Causes of Death Ages 1-5



Natural Causes of Death Ages 6-11

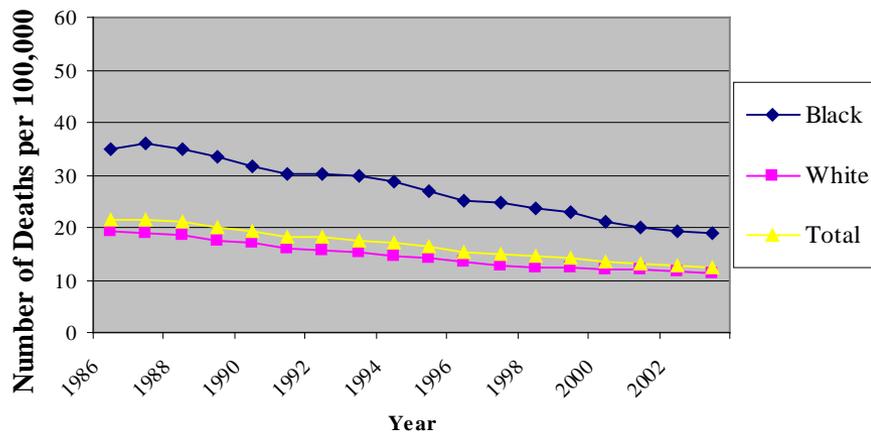


Natural Causes of Death for Children Ages 12-17

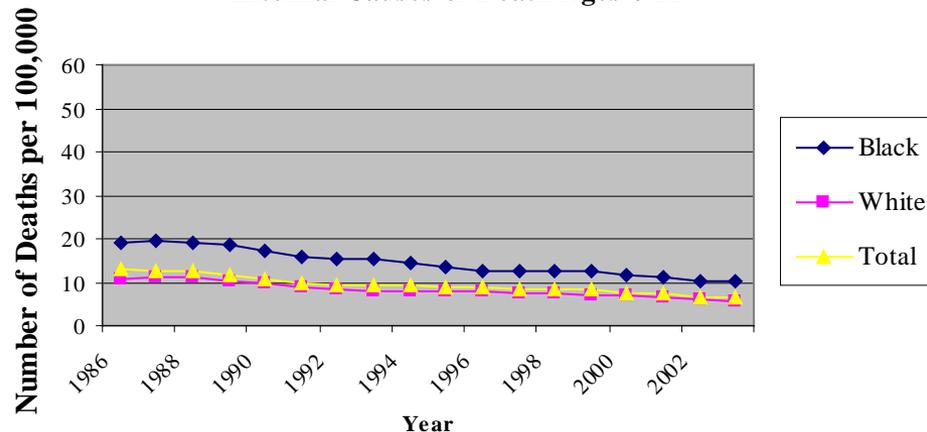


Mortality for External Causes of Death: Age + Year

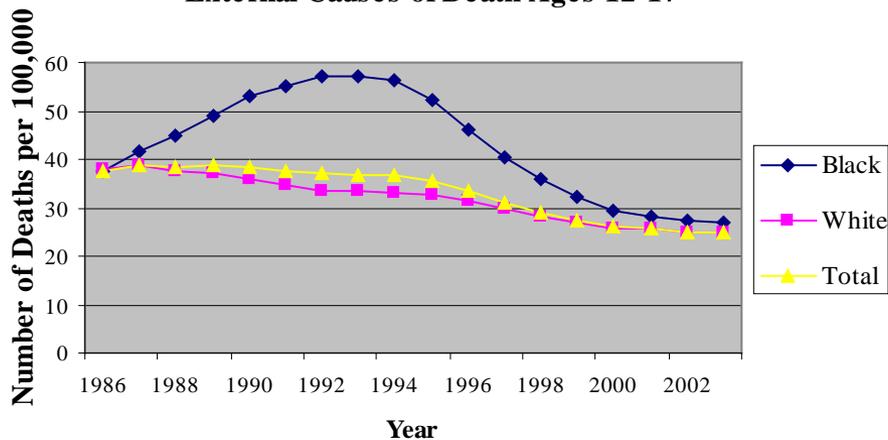
External Causes of Death Ages 1-5



External Causes of Death Ages 6-11



External Causes of Death Ages 12-17



Multivariate Analysis of U.S. Mortality Rate Among Children Ages 1-17, 1987-2003

Selected Independent Variables	Alternative Models: Coefficient on Medicaid Eligibility (Significance Level)			
	Model 1: Natural Cause Mortality— Linear time trend	Model 2: Natural Cause Mortality—Year Dummy Variables	Model 3: External Cause Mortality— Linear Time Trend	Model 4: External Cause Mortality—Year Dummy Variables
Medicaid/SCHIP Eligibility Expansion Level (Linear)	-.373 (p<.001)	-.030 (Not significant)	-.260 (p<.001)	-.198 (p<.001)
Race: Black (compared to white)	.168 (p<.001)	.167 (p<.001)	.451 (p<.001)	.451 (p<.001)
Ages: 6-11 (compared to 1-5)	-.870 (p<.001)	-.842 (p<.001)	-.605 (p<.001)	-.600 (p<.001)
Ages: 12-17 (compared to 1-5)	-.593 (p<.001)	-.541 (p<.001)	.608 (p<.001)	.689 (p<.001)
Year (linear) R-squared	-.030 (p<.001) .347	Not applicable (year dummies) .351	-.031 (p<.001) .845	Not applicable (year dummies) .845



Conclusions

- Child mortality (natural and external) **declined on average of 3% per year** during study period
- **Decline** in difference **between black and white** child mortality
- **Relative racial disparity** at end of study period remains **unchanged**



Conclusions

- Medicaid/SCHIP eligibility expansions related to **improved survival**, especially for **external** causes of death
- Mandates and state-optional eligibility **did not differentially affect** black and white children
- Other targeted strategies needed to reduce racial disparities in child health



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