

Local Public Health Delivery of MCH services:

Which MCH Services Impact Mortality Disparities?

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Health Disparities... Progress??



- 1991's *Healthy People 2000*
- Disparities persist
 - No significant trend toward overall improvement
 - Some disparities narrowing
 - ~ ½ of 15 health status indicators narrowed over 15 years
 - Some disparities widening
 - 5 of 15 indicators widened significantly

(Orsi et al, 2010)

“...not only are we generally not eliminating disparities, but in the majority of cases we are not even [significantly] reducing them.”

(Orsi et al, 2009)



Background

- Previous & Current Research

- Among 9 LHD service domains, immunizations & **MCH services** were most associated with decreases in Black-White mortality disparities.

(Bekemeier, Grembowski, & Conrad, submitted)

- As LHD services change over time, **MCH** services are among those most consistently associated with decreases in Black mortality & White mortality

(Bekemeier, Grembowski, & Yang, under preparation)

Research Question

Which **MCH** activities are most strongly associated with reducing Black-White mortality disparities?



Methods

- Time-trend ecologic study design
- Data Sources
 - LHD Services (NACCHO *Profile* 1993, 2005)
 - U.S. Census
 - Area Resource File
 - Rural/Urban Commuting Codes (RUCA) from Dept. of Agriculture



Outcome Variables



- Absolute, age-adjusted mortality change (2005-1993)
 - Black, White, & Black-White “Gap” for:
 - Total population
 - Age 15-44
 - Females
 - Infants (‘03-’05 and ‘92-’94)
- Regression analyses

Independent Variables

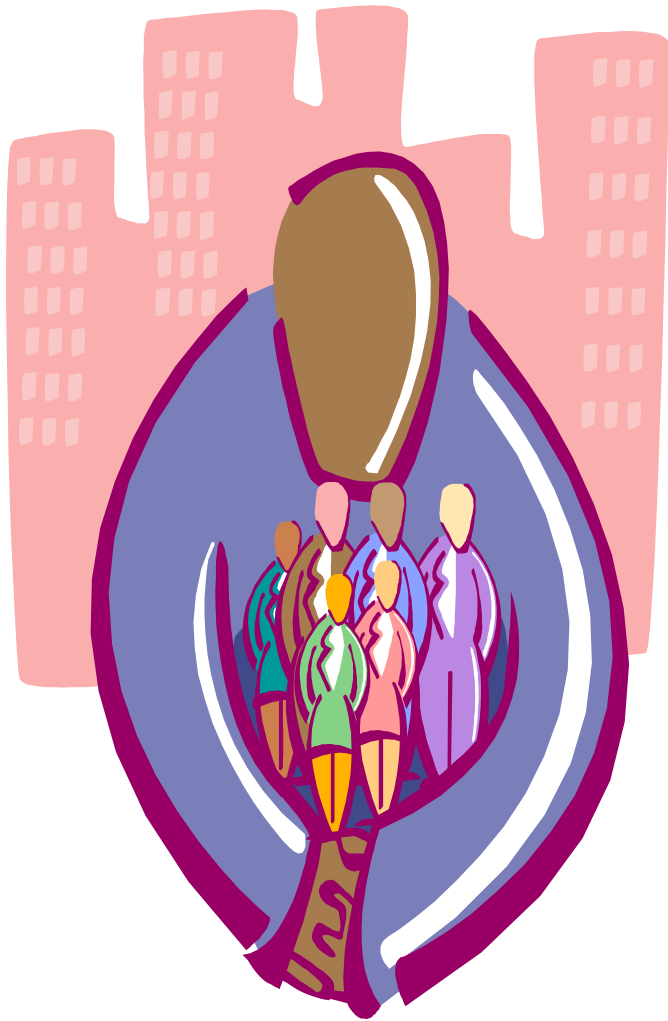
- 6 MCH Activities in 1993 & 2005 *Profiles*
- Comparable across years
- Services “ever” provided
 - Directly or contracted out
 - Family Planning
 - Obstetrical Care
 - Prenatal Care
 - EPSDT
 - WIC
 - *Immunizations*



Public Health
Prevent. Promote. Protect.

Control Variables

- **Change in Community Characteristics**
 - Social Disadvantage (Robert, 2004)
 - % Black population; % HS Diploma or >
- **Change in Local Health Resources**
 - MD's per capita
 - RN's per capita
- **LHD Characteristics**
 - Ever had a BOH
 - Change in # of FTEs
- **Region, State, Rural-Urban**



RESULTS

Sample Characteristics

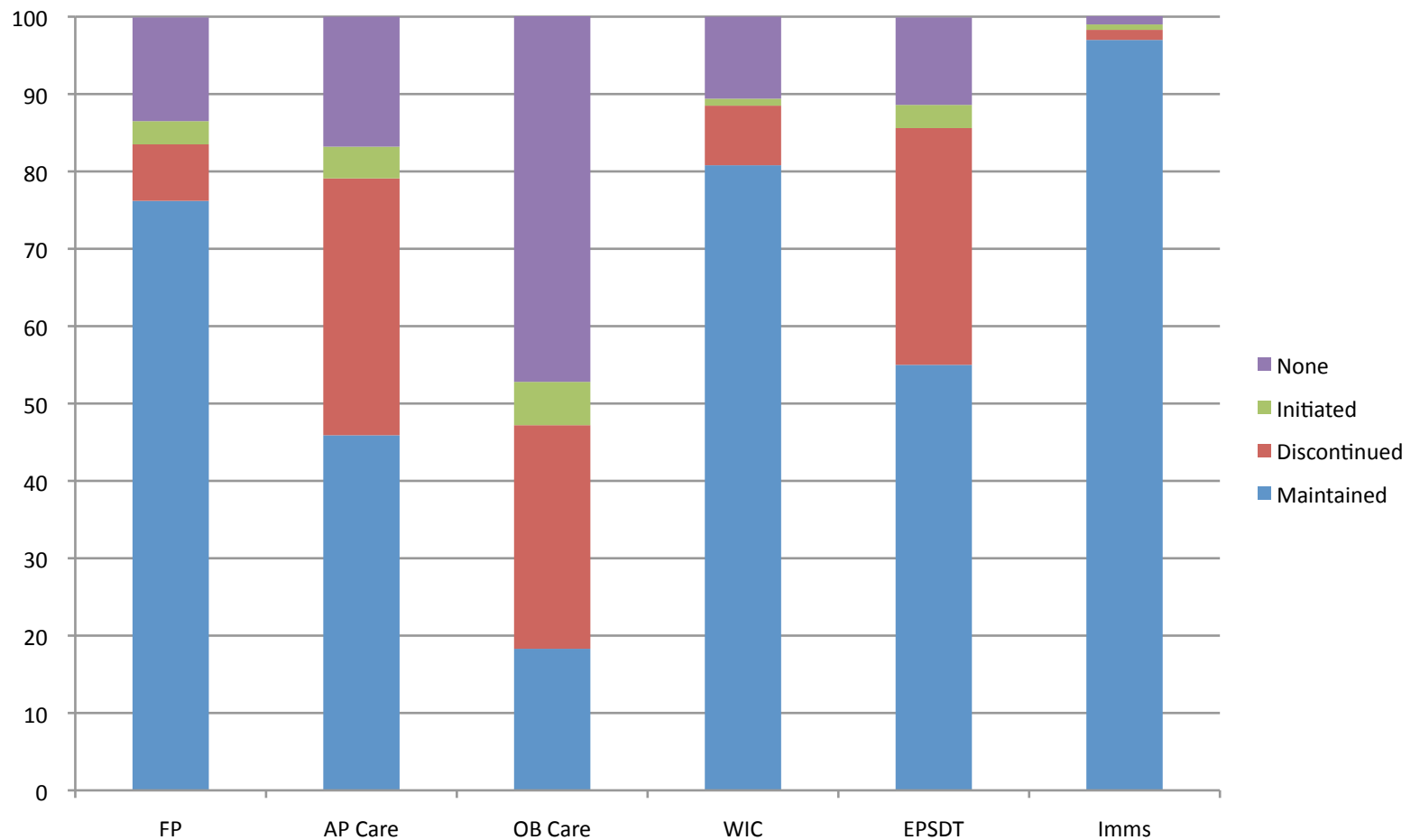
- 558 “Common Local Areas”
 - **66% Urban**
 - **Disadvantaged(1993)**
 - Ave. % Black=18.3
 - Ave. % HS diploma or >=69.1
 - Ave. % Families on Public Assistance=9.1
- Mostly South**
- **South East = 46%** (258)
 - Midwest=12% (69)
 - South West=12% (68)
 - North East=9% (52)
 - NJ, NY=6.5% (36)
 - Other (New Eng., West, etc)=13% (75)

Average Age-adjusted Mortality Rates...& the “Gap” for Sample

Total Black Mortality	1993 = 1,286		
Total White Mortality	1993 = 942	294	Gap '05-'93
Total Black Mortality	2005 = 1,075		
Total White Mortality	2005 = 863	212	-82

The diagram illustrates the change in age-adjusted mortality rates for Black and White populations from 1993 to 2005. For 1993, the Black mortality rate is 1,286 and the White rate is 942, with a gap of 294. For 2005, the Black rate is 1,075 and the White rate is 863, with a gap of 212. The gap between the two groups narrowed from 294 in 1993 to 212 in 2005. A red arrow labeled 'Gap '05-'93' points to the difference of -82 between the 2005 rates (1,075 - 863 = 212).

Changes in MCH Activities 1993 to 2005



Summary Findings

- Across individual MCH services provided by LHDs
 - LHDs ever providing **FP, Prenatal Care, & WIC**
 - Most consistently related to *decreases* in mortality (esp. WIC)
 - Most related to *significant* mortality “Gap” *decreases*
 - Most strongly significant in terms of improving *White* mortality (except infants)
 - Infant mortality, however, tends to be more associated with *increases* in mortality
 - *LHD delivery of certain MCH services appears related to reductions in Black mortality, White mortality, & Black-White mortality disparities*



Change in Mortality for Blacks

Favorable

- **FP (Females)** (-46.36, $p < 0.10$)
- **Prenatal Care (All-ages)** (-71.71, $p < 0.10$)
- **WIC (Females)** (-46.36, $p < 0.10$)



Change in Mortality for Whites

Favorable

- **FP** (Age 15-44) (-12.88, $p < 0.01$)
- **Prenatal Care** (Age 15-44) (-8.95, $p < 0.10$)
- **OB Care** (All-ages, Age 15-44)
- **WIC** (All-ages, Age 15-44, Females)



Unfavorable

- **FP** (Infants) (35.29, $p < 0.10$)
- **Prenatal Care** (Infants) (57.36, $p < 0.01$)
- **OB Care** (Infants) (33.15, $p < 0.10$)



Change in the Mortality “Gap”

Favorable

- **FP (Females)** (-36.75, $p < 0.10$)
- **Prenatal Care (All-ages)** (-107.01, $p < 0.01$)



Unfavorable

- **OB Care (Females)** (36.71, $p < 0.10$)



Discussion

- FP, Prenatal Care, WIC
 - Most related to *decreases* in mortality (esp. WIC)
 - Most related to significant mortality Gap *decreases*
- OB Care
 - Least strongly & least consistently r/t *decreases* in mortality or a *decreasing* gap
- FP, Prenatal Care, WIC, OB
 - Particularly r/t benefits for Whites
 - Not *seemingly* r/t benefits for infants



Discussion

- Supports other findings for WIC & improving disparities (Khanani, et al., 2010)
- Comprehensive preventive services as “markers” for broader community focus on early childhood development
- Importance of intensive *preventive* services for vulnerable populations
- Prevention in very early childhood is closer to outcomes in the causal pathway

Conclusions & Implications

- Certain MCH direct services appear to particularly impact Black-White mortality disparities in a positive way
 - Make shifts in direct service with caution
 - Determine the mechanisms in these LHD services that appear to impact disparities
- Sweeping changes (cuts?) to services could heavily impact disparities
 - Longitudinal monitoring of changes to services & relationships to disparities needs to occur

A functional LHD...



Public Health
Prevent. Promote. Protect.

- “....addresses health disparities”
- “uses and contributes to”...the evidence
-base for PH practice
- “provides expertise” in communities
regarding PH issues

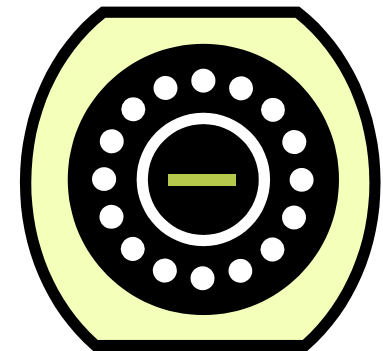
NACCHO, 2005

Effects of Family Planning

Having FP



- Tends to be related to *decreases* in mortality for both Blacks & Whites
- Very significantly *decreases* Age 15-44 **White** mortality
- Significantly *r/t decreases* in the **Gap** in female Black-White mortality



Effects of Prenatal & OB Care

Having Prenatal Care

- Very significantly *r/t decreasing* **Gap** in all-age Black-White mortality
- Very significantly *r/t increasing* mortality for **White** Infants

Having OB Care

- Significantly *r/t decreasing* all-age **White** mortality
- Significantly *r/t increasing* **Gap** in female Black-White mortality

Effects of WIC

Having WIC



- Tends to be related to *decreases* in mortality for both Blacks & Whites
- Significantly r/t *decreases* in mortality Whites—all-ages, age 15-44, females
- Significantly r/t *decreases* in mortality for both Black & White females

Effects of EPSDT

Having EPSDT

- Tends to be related to *decreases* in mortality for both Blacks & Whites
- No significant findings

