

PHSSR Research-In-Progress Webinar
Wednesday, June 18, 2014

***Health Care Reform:
Colorectal Cancer Screening Expansion and
Health Disparities***

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Agenda

Welcome: Anna Hoover, PhD, National Coordinating Center for PHSSR

Presenter: Michael Preston, PhD, MPH, U. of Arkansas for Medical Sciences

Commentary:

Glen Mays, PhD, MPH, Professor, U. of Kentucky College of Public Health

Ronda Henry-Tillman, MD, Winthrop P. Rockefeller Cancer Institute, U. of Arkansas for Medical Sciences

Questions and Discussion

Presenter



Michael Preston, PhD, MPH
U. of Arkansas for Medical
Sciences

Health Care Reform: Colorectal Cancer Screening Expansion and Health Disparities

Michael Preston, Ph.D., M.P.H.
University of Arkansas for Medical Sciences

mapreston@uams.edu
@MDonP

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UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

No Financial Conflicts of Interest to Disclose

Presentation Outline

- * Background and Significance
- * Theoretical Framework
- * Objective
- * Methods
- * Results
- * Conclusions
- * Implications

Colorectal Cancer

- * Third leading cause of cancer-related deaths in men and women when counted separately
- * Second leading cause of cancer-related deaths in men and women when counted collectively
- * 142K+ new cases
- * 50K+ deaths
- * Over the past 20+ years, death rates have decreased
- * Disparities remain among medically underserved populations

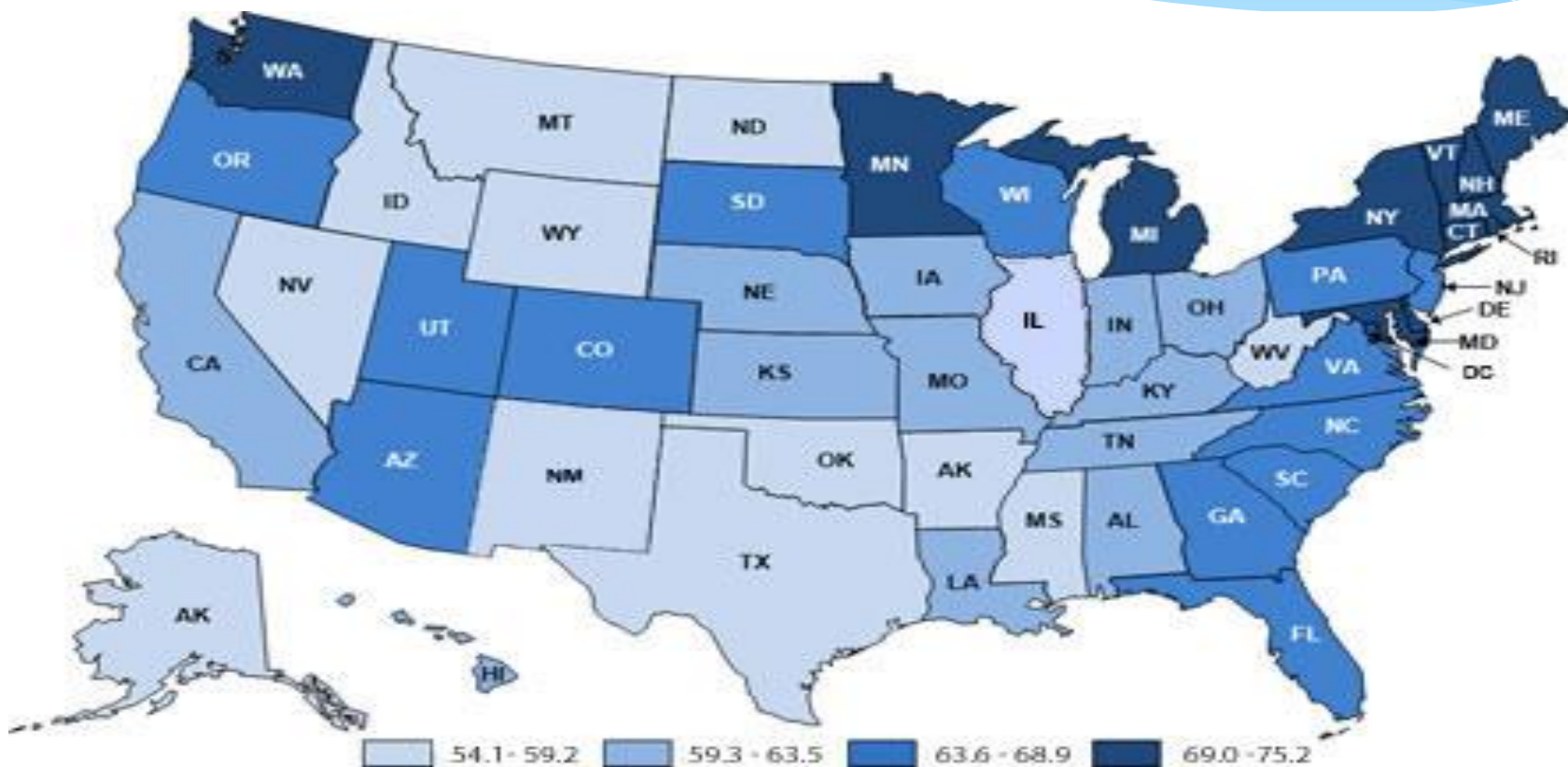
Colorectal Cancer Screening

- * Early detection has been a major contributor to the overall decline in new cases and deaths from CRC
- * Screening allows for detection and removal of precancerous polyps before they progress to cancer (Cancer Facts & Figures 2012)
- * Screening allows for earlier detection when disease is easier to cure
- * Improvement in treatment over the years
- * Healthy People 2020 screening goal 70.5%

Colorectal Cancer Screening Disparities

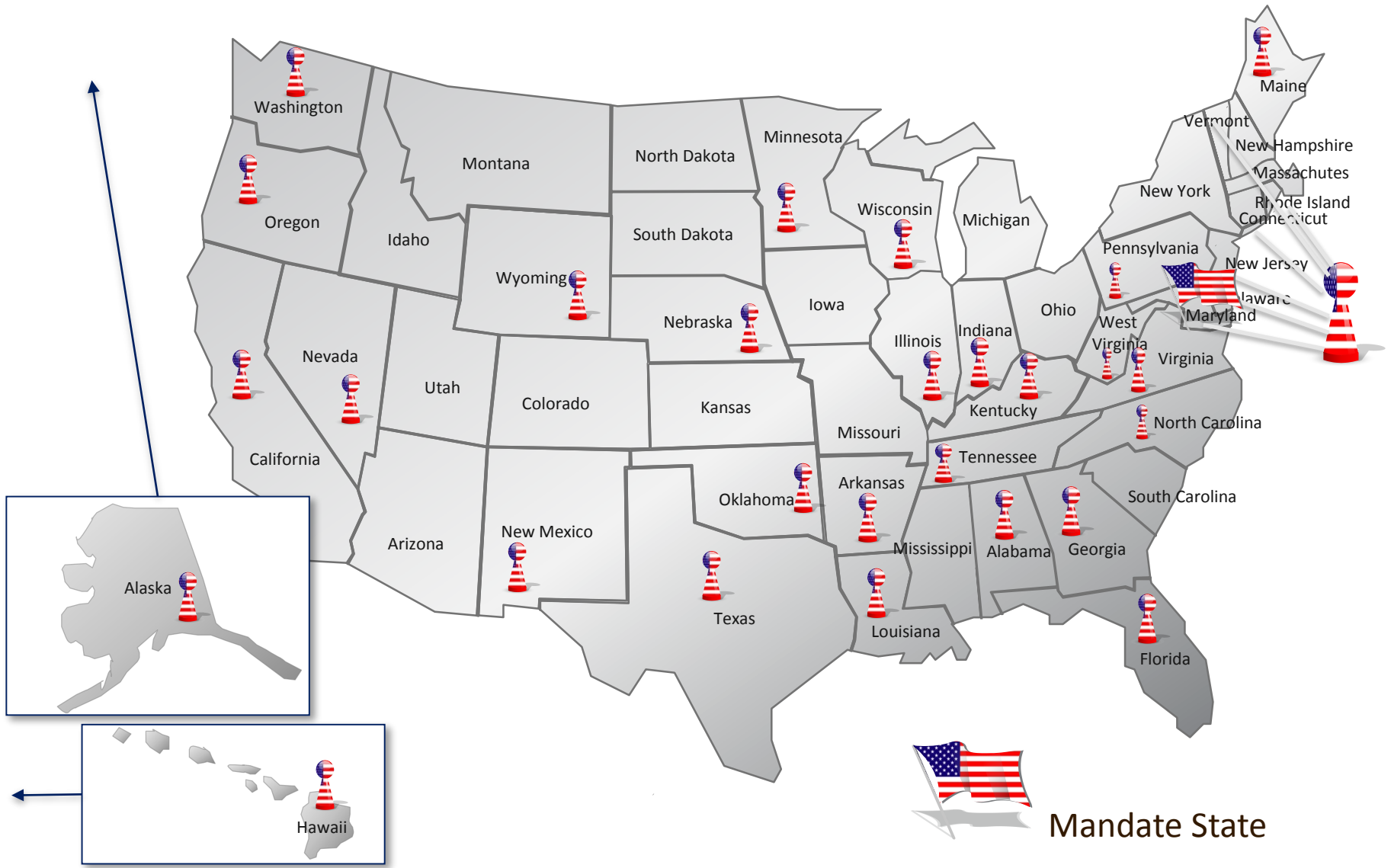
- * Compliance or adherence to screening guidelines reduces disparities
- * Higher mortality rates remain among disadvantaged and underserved that are part of racial and ethnic minorities and rural populations which tend to be low-income, under-insured, and uninsured
- * Racial and ethnic minorities such as AA are less likely to be screened and more likely to die
- * 5-year survival rate in AA was 53% compared to 63% in Whites from 1992 to 1999 (Agrawal et al., 2005)

Colorectal Cancer Screening Rates (BRFSS, 2010)



Source: CDC, 2010

Insurance Coverage Mandate States in the U.S.



Source: SCLD, 2012

Insurance Coverage Mandate for CRC

- * Policy that requires insurers to cover the cost of medical services they would not otherwise if a mandate is not in place
- * Not all states passed mandates related to CRC
- * Variation in the types of mandates that were passed
 - * Differences in the amount of cost-sharing
- * Mandates reduced out-of-pocket expenses
 - * Increase CRC screenings

AR Example: Act 2236

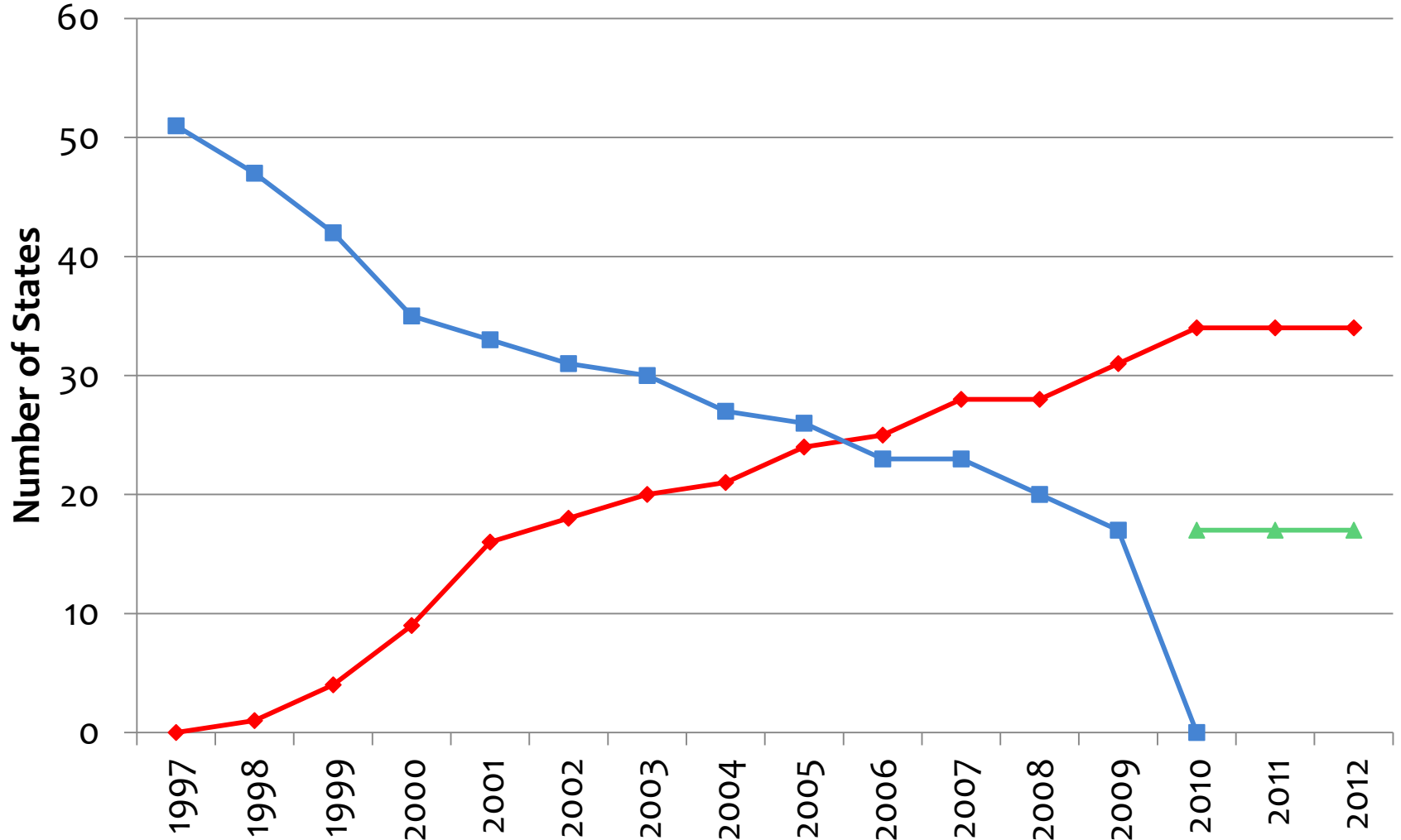
- * The Colorectal Cancer Act of 2005
 - * Rep Elliot; Sen Steele, Sen Critcher, Sen Whitaker
- * Established:
 - * CRC Control and Research Demonstration Project
 - * UAMS Cancer Control (PI: Henry-Tillman)
 - * Policy that requires insurers to cover CRC screenings
 - * 2 main exemptions
 - * Employer self-funded benefit plans (mainly large employers)
 - * No restrictions on cost-sharing

Health Care Reform

- * 2010, Patient Protection and Affordable Care Act (ACA)
 - * Decrease the number of uninsured Americans
 - * Reduce the overall cost of health care
 - * Insurance coverage mandates for preventive health services
 - * Closed loop-holes in state mandates
 - * Employer self-funded benefit plans
 - * No restrictions on cost-sharing

Policy Adoption Over Time

◆ Mandate ■ Non-Mandate ▲ Reform



Law of Demand



As out-of-pocket
costs decrease...



... the quantity of
colorectal
screenings increase

Goal of Research Study

- * To estimate the effects of health insurance coverage expansions on overall CRC screening rates and CRC screening disparities.



The facts are coming! The facts are coming!

Methods

- * Difference-in-differences (DID)
 - * Measures the difference in CRC screening before and after policy
 - * Measures the difference in CRC screening b/w the treatment and control groups
- * Treatment group: non-mandate states
- * Control group: mandate states
- * DID allows us to identify causal effects of ACA on CRC screening

Data

- * Behavioral Risk Factor Surveillance System (BRFSS)
 - * Study population is a sample of U.S. adults age 50 or greater
- * National Cancer Institute State Cancer Legislative Database
 - * Used to determine provisions, exemptions, and enforcements of state mandates
- * The dataset was used to assess state-level estimates of health behaviors and health care utilization by building a state-year longitudinal data file
- * This data file provided information on types of CRC screening, date latest test was performed, insurance status, race/ethnicity and SES for years studied
- * Analytical sample 34,017 (M:25,729; NM:8,288)
 - * Person-years

Analysis

- * *Model Specification:*

- * Difference-in-differences (DD)

$$= (\text{CRCscreening}_{\text{reform, post}} - \text{CRCscreening}_{\text{reform, pre}}) - (\text{CRCscreening}_{\text{non-reform, post}} - \text{CRCscreening}_{\text{non-reform, pre}})$$

- * $Y_{c,s,t} = \alpha + \beta_0 + \beta_1 * \text{REFORM}_t + \beta_2 * \text{POST}_s + \beta_3 * \text{REFORM}_t * \text{POST}_s + X\beta_4 + \delta_s + \varepsilon_{s,t}$

Analysis

- * *Model Specification:*

- * Difference-in-difference-in-differences (DDD)

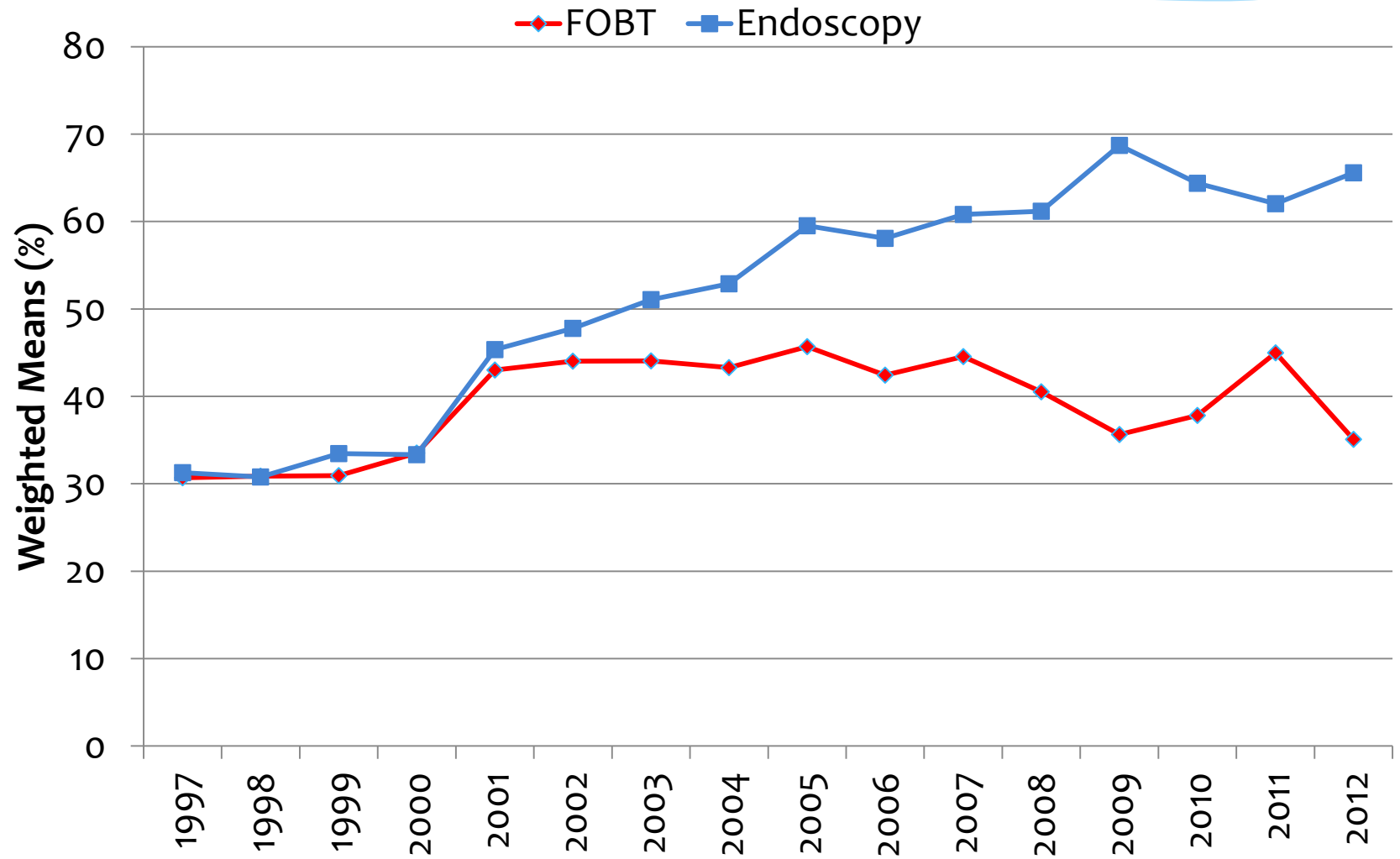
- *
$$Y_{c,s,t} = \alpha + \beta_0 + \beta_1 * REFORM_t + \beta_2 * POST_s + \beta_3 RACE_{i,y} + \beta_4 * REFORM_t * POST_s + \beta_5 * REFORM_t * RACE_{i,y} + \beta_6 * POST_s * RACE_{i,y} + \beta_7 * REFORM_t * POST_s * RACE_{i,y} + X\beta_8 + \delta_s + \epsilon_{s,t}$$

- *

- *
$$Y_{c,s,t} = \alpha + \beta_0 + \beta_1 * REFORM_t + \beta_2 * POST_s + \beta_3 UNINS_{i,y} + \beta_4 * REFORM_t * POST_s + \beta_5 * REFORM_t * UNINS_{i,y} + \beta_6 * POST_s * UNINS_{i,y} + \beta_7 * REFORM_t * POST_s * UNINS_{i,y} + X\beta_8$$

- *
$$+ \delta_s + \epsilon_{s,t}$$

Colorectal Screening Over Time



Colorectal Screening (Up-to-date) Over Time

Overall Compliance

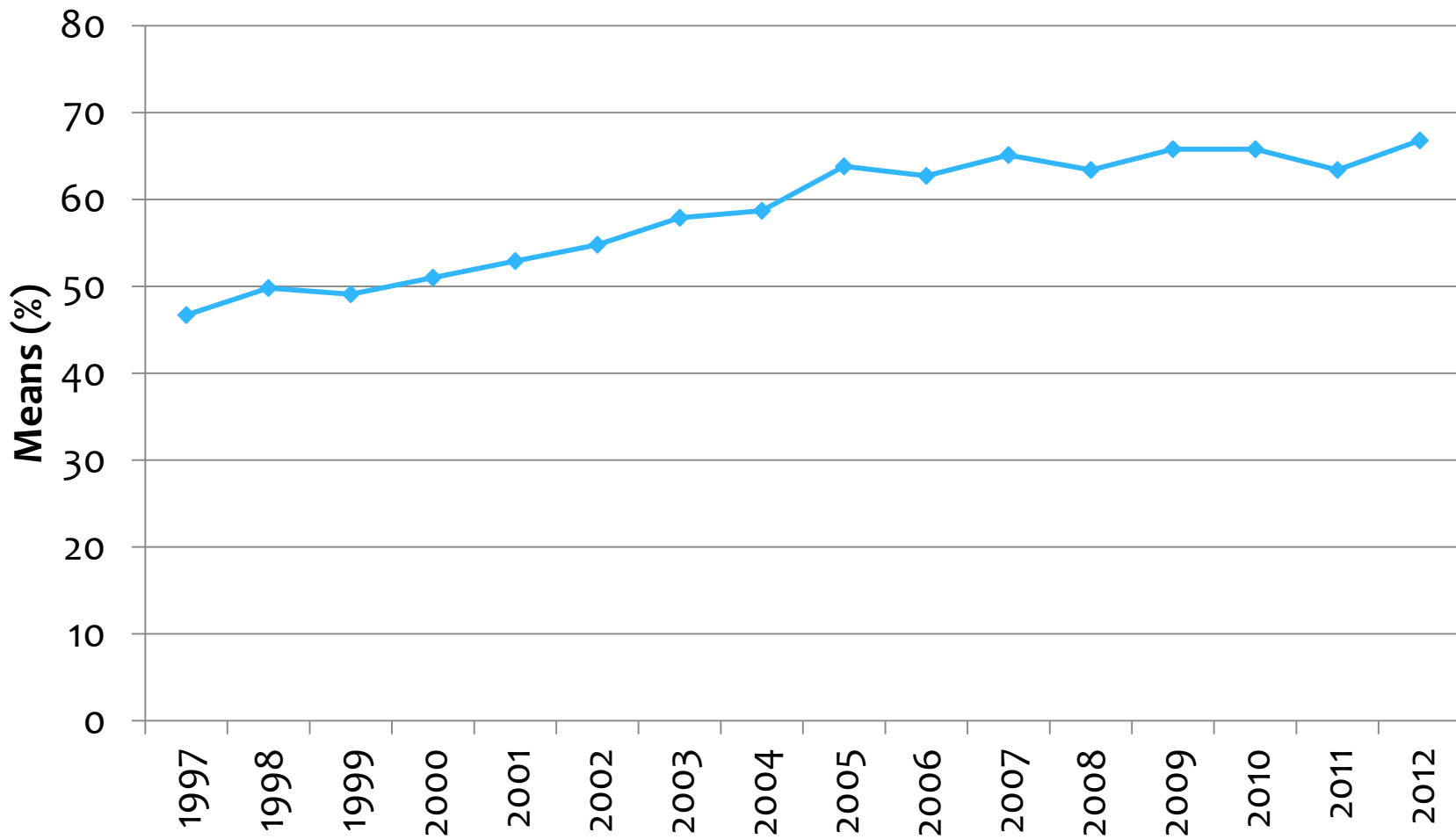


Table 1. Descriptive statistics of the study population receiving any colorectal screening, individual characteristics only

Characteristics	Received colorectal cancer screening (%)	
	Yes	No
Overall colorectal screening test (n=1,571,267)	61.55	38.45
Endoscopic test (n=930,547)	95.61	4.39
FOBT test (n=660,167)	35.92	64.08
Mean age +/- s.d. (in years)	66.2 +/-10	63.8+/-11
Mandate state coverage		
Yes	61.78	38.22
No	61.13	38.87
Health care reform		
Post	64.24	35.76
Pre	58.79	41.21

Table 2. Summary statistics

Characteristics	Pre-health care reform		Post-health care reform	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
Mean age +/- s.d. (in years)	64.93	10.199	64.76	10.274
Self-reported health status (Fair/poor)	26.99	0.444	28.41	0.451
Covered by health insurance	92.92	0.256	92.02	0.271
Did not see doctor due to medical costs	9.06	0.287	12.53	0.331
Doctor visit	1.29	0.649	1.36	0.691
Presence of a personal physician	93.97	0.238	89.37	0.308
Race/ethnicity				
Whites	81.99	0.384	76.67	0.425
Hispanics	3.74	0.190	8.92	0.285
Marital status	51.46	0.500	48.17	0.500
Male	38.42	0.486	39.20	0.488

Table 3. Marginal Effects of Health Care Reform on Colorectal Cancer Screening

Variable	Coefficient	SE	Marginal Effects
Mandate state coverage	-0.376	0.278	-0.080
Health care reform	0.0113	0.0931	0.00241
Health care reform effect	0.161*	0.100	0.0344

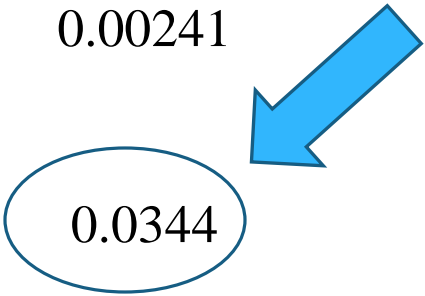
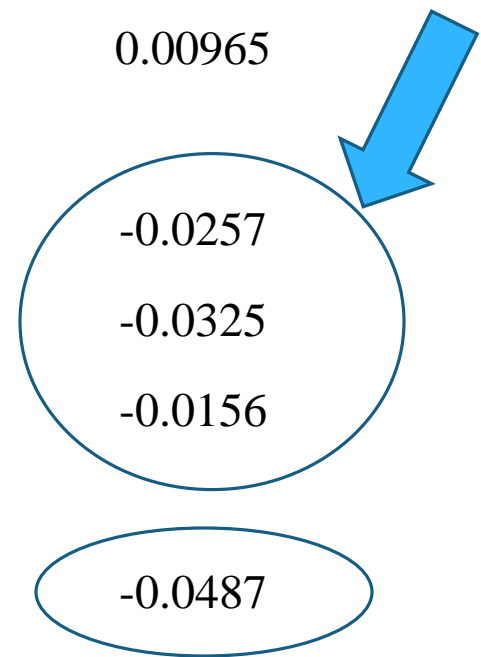


Table 4. Marginal Effects of Health Care Reform on Screening Disparities by Race and Insurance Status

Variable	Coefficient	SE	Marginal Effects
Mandate state coverage	-0.291	0.260	-0.0621
Health care reform	0.0452	0.0685	0.00965
Health care reform effect			
<i>Nonwhites vs whites/Caucasians</i>	-0.120**	0.0594	-0.0257
<i>African Americans vs whites</i>	-0.153*	0.0911	-0.0325
<i>Hispanics vs whites</i>	-0.0735	0.449	-0.0156
Health care reform effect			
<i>Uninsured vs insured</i>	-0.228**	0.0963	-0.0487



Conclusions

- * Health care reform increased the probability of having a CRC screening by 3.4 percentage points on average
- * Estimated 2.87 million additional age-eligible persons will receive a colorectal cancer screening as a result of health care reform
- * Increased screening among whites
- * Decreased screening among AA and Hispanics
- * Increased screening among insured
- * Clearly found evidence that ACA influences CRC screening
- * Our analysis supports the implementation of health care reform and stronger policies that increase colorectal cancer screenings overall

Policy Implications

- * This research demonstrates that insurance mandates increased colorectal cancer screenings by reducing out-of-pocket costs
- * Future health care reforms that increase access to preventive services, such as CRC screening, are likely with low out-of-pocket costs and will increase the number of people who are “up-to-date”
- * Starting 2014, all US citizens are required to have health coverage
 - * Expect demand to increase for CRC screening

Policy Implications (continued)

- * Identify best ways to design health systems for preventive services that target medically underserved populations
- * Disparities continue to increase with health policies that reduce out-of-pocket expenses. Additional measures are required to reduce disparities in screenings among nonwhites and Hispanics
- * Important to know if health coverage expansions decrease disparities

For More Information

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Michael A. Preston, Ph.D., M.P.H.
mapreston@uams.edu
@MDonP

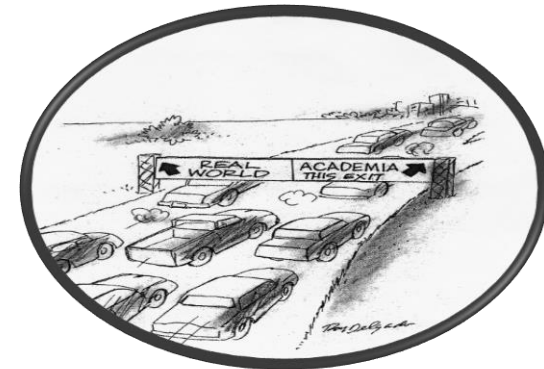
Archive: http://works.bepress.com/michael_preston

University of Arkansas for Medical Sciences
Cancer Control
Little Rock, AR

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Commentary

Glen Mays, PhD, MPH, Professor, U. of Kentucky College of Public Health



Ronda Henry-Tillman, MD, Winthrop P. Rockefeller Cancer Institute, U. of Arkansas for Medical Sciences



Questions and Discussion

Future Webinars – PHSSR Research in Progress

All webinars from 12-1 pm, ET

Aug 13 – Quantifying the Value of Public Health Intervention

Theresa Green, PhD, MBA, MS, Center for Community Health, Public Health Sciences, University of Rochester Medical Center

Commentary: Michael Stoto, PhD, Health Systems Administration and Population Health, Georgetown University

Aug 27 – Priorities in rural health: Cost-effectiveness analysis of fungal meningitis outbreak in New River Health District

Kaja Abbas, PhD, MPH, Dep't. of Population Health Sciences, Virginia Polytechnic Institute and State University

Commentary: Kerry Redican, PhD, MPH, Virginia Tech Carilion School of Medicine and Research Institute and

Molly O'Dell, MD, MFA, Director, New River Health District, Virginia Department of Health

Future Webinars – PHSSR Research in Progress

All webinars from 12-1 pm, ET

Sept 10 – Improving HIV/STD Partner Services Performance in New York State: A Performance Management Approach

Britney Johnson, MPH, AIDS Institute/Office of Public Health Practice, New York State Department of Health

*Commentary: Sylvia Pirani, MPH, Office of Local Health Services, NYS Dept. of Health
James Tesoriero, PhD, HIV Prevention Director, NYS Dept. of Health*

Sept 24 - State Health Department Foodborne Disease Outbreak Reporting

Fanta Purayidathil, PhD, Health Economics and Outcomes Research, Boehringer Ingleheim

Commentary: Jennifer Ibrahim, PhD, MPH, Dept. of Public Health, Temple University

Oct 8 – Variations in the costs of delivering public health services: An analysis of local health departments in Florida

Simone Singh, PhD, University of Michigan School of Public Health

Commentary: Patrick Bernet, PhD, Florida Atlantic University

Future Webinars – PHSSR Research in Progress

All webinars from 12-1 pm, ET

Oct 22 – Relationship Between Public Health Workforce Competency, Provision of Services, and Health Outcomes in Tennessee

Robin Pendley, DrPH, Health Services Management and Policy, College of Public Health, East Tennessee State University

Nov 12 – Trends and Characteristics of the State and Local Public Health Workforce

Angela J. Beck, PhD, MPH, Associate Director, Center of Excellence in Public Health Workforce Studies, University of Michigan

Dec 10 – Integrating Public Health and Healthcare: Lessons from One Urban County

Erik L. Carlton, DrPH, Health Systems Management and Policy, School of Public Health, University of Memphis

Commentary: Paul Erwin, MD, DrPH, Dept. of Public Health, University of Tennessee

For more information contact:

Ann V. Kelly, Project Manager

Ann.Kelly@uky.edu

111 Washington Avenue #212 | Lexington, KY 40536

859.218.2317

[**www.publichealthsystems.org**](http://www.publichealthsystems.org)