

# **How Innovative Technologies Influence Medical Practice, Health Benefits, and the Health Care System: Cancer Screening**

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# Exciting Time in Cancer Prevention

- Payment reforms
- Robust and sophisticated advocacy efforts
- Emerging screening technologies
- Big data and predictive analytics

# Value-Based Insurance Design

“The Secretary may develop guidelines to permit a group health plan and a health insurance issuer . . . to utilize **value-based insurance designs.**”

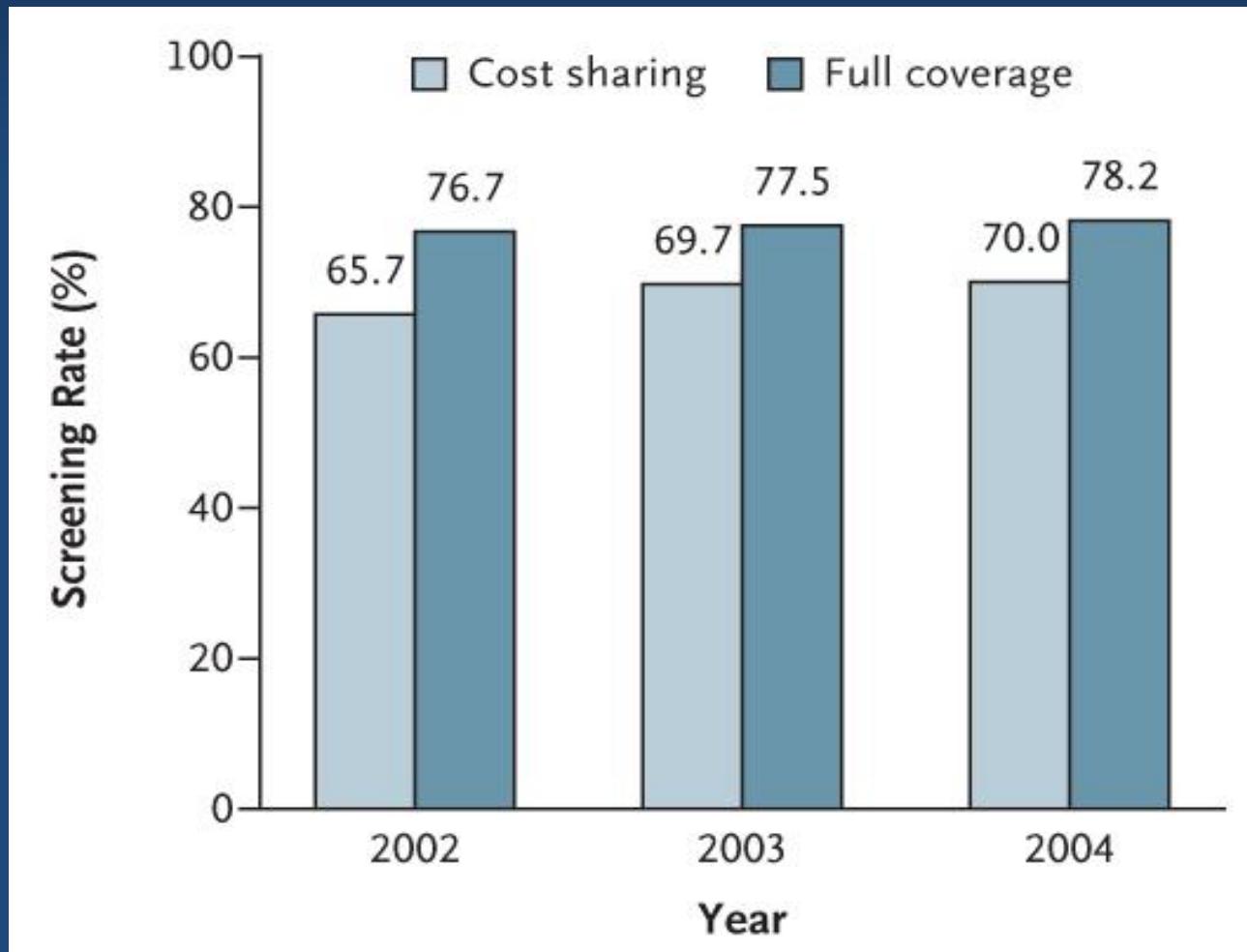
Section 2713(c) of the Affordable Care Act



# Value-Based Insurance Design

- Cost-sharing is commonly utilized by insurance plans (“skin in the game”).
- Cost-sharing is typically fixed across services or is based on the cost of the service.
- The effect of cost-sharing is to reduce utilization of services *regardless of the value of the service for the patient.*

# Effect of Cost-Sharing on Mammography Utilization



# Value-Based Insurance Design

- Copayments have a powerful (and clinically important) effect on utilization of care.
- If you charge more for something, fewer people will buy it.
- How can we apply this basic economic principle to **promote health** (rather than simply limit utilization)?

# Value-Based Insurance Design

- What if we link the amount of the copayment to the **value** of the service?
- Under VBID, **high-value** services cost the patient less than **low-value** services.
- Use of **high-value** services is **encouraged** (improving health) while use of **low-value** services is **discouraged** (reducing costs).

# Value-Based Insurance Design

- Under the PPACA, **USPSTF-recommended** preventive services require **\$0** copayment.
- This provision will substantially improve the **affordability** of costly screening tests, such as colonoscopy.

# Emerging Technologies

# The New England Journal of Medicine



# Emerging Technologies

- CT colonography
- Colon capsule
- Stool, blood, and urine tests
- Genetic tests



# Emerging Technologies

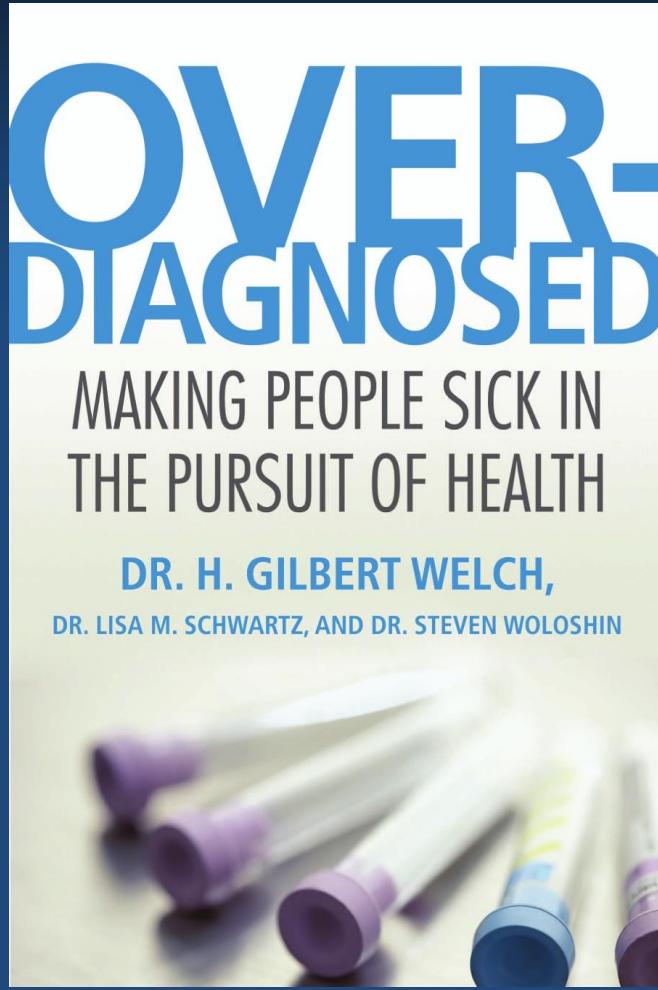
Payment Reform



Increased  
Utilization!

Technology

Advocacy



## Overdiagnosis of Cancer Spurs Questions About Early Detection

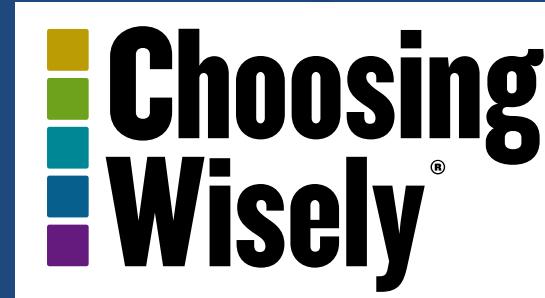
Some of the nation's top cancer experts say zealous screening are turning up ever-smaller abnormalities, many of which are being labeled cancer and treated...

ONLINE.WSJ.COM | BY MELINDA BECK

## Age-Based Quality Measure Is Associated with Overuse of Colorectal Cancer Screening in Unhealthy Elders

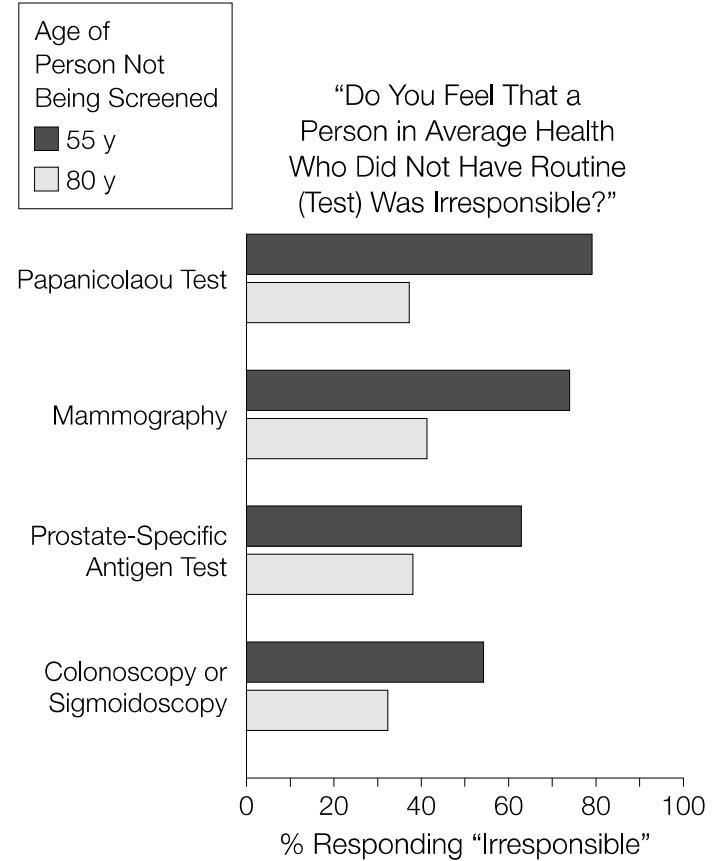
*Paul S. Mueller, MD, MPH, FACP* reviewing Saini SD et al. BMJ 2014 Feb 26.

A 75-year-old with limited life expectancy was more likely to be screened than a healthy 76-year-old with 10-year life expectancy.



# Screening as an Obligation

**Figure 2.** Screening as an Obligation



Schwartz, et al. JAMA. 2004; 291 (1): 71-8.

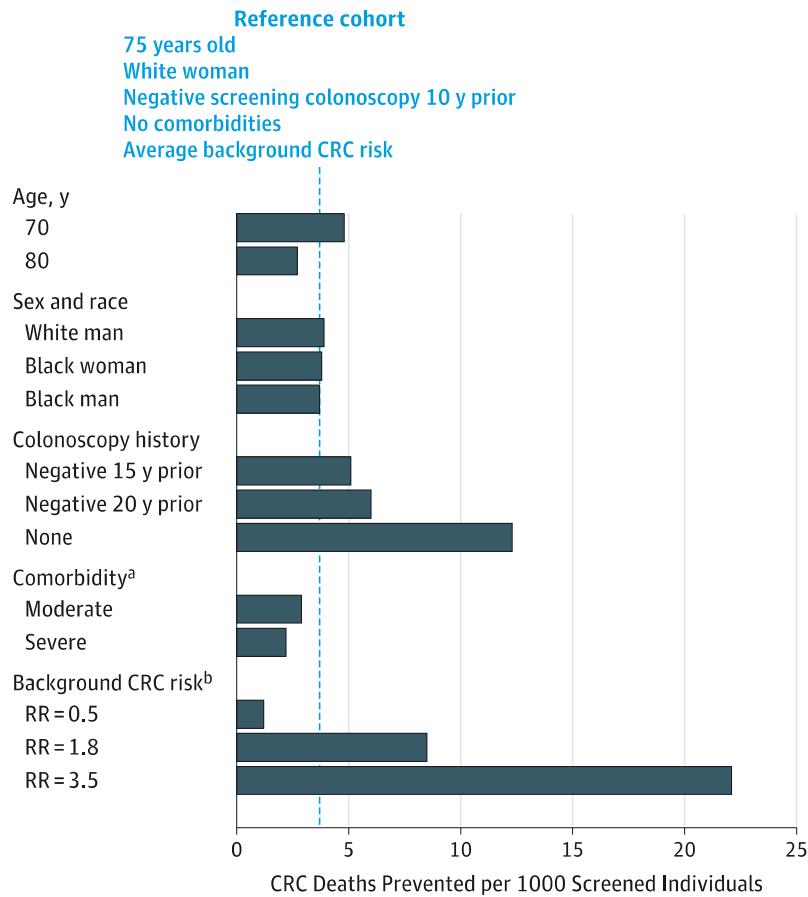


# Big Data and Predictive Analytics

- Predictive analytics will disrupt our current approach to prevention by...
  - Identifying not only high-risk but also low-risk individuals.
  - Raising uncertainty where there previously was none.
  - Forcing us to shift our focus from populations to patients.

# Smarter Screening for Cancer Possibilities and Challenges of Personalization

Figure. Example of Relationship of Risk Factors With Lifetime Benefit of Colorectal Cancer Screening With Colonoscopy



# Summary

- VBID, new technologies, and ongoing advocacy and public health efforts will decrease underuse.
- But decreases in underuse will almost certainly be accompanied by overuse of care.
- Big data and predictive models will fundamentally change the way we approach cancer prevention.

# Thank you for your attention!

