

A Closer Look at the Economic Argument for Disease Prevention

*The Dollars and Sense of Prevention: A
Primer for Health Policy Makers
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DISEASE PREVENTION HAS ALWAYS BEEN THE preferred option for promoting health and reducing disease rates. For many, this health argument is reason enough to invest in prevention, economics aside. Others, citing scarce resources, advocate a careful assessment of the costs and savings associated with prevention. It initially costs more to deliver preventive services; the savings the resulting health benefits will incur over time are less clear. Some reports claim that effective prevention programs would save the nation billions of dollars,¹ while others predict the reverse.² Economists and columnists have argued that prevention rarely saves money and is inherently no more cost-effective than disease care.^{3,4} For policy makers—caught between an economic crisis, pressure to defer new spending and seize control over escalating health care costs, and a promise to voters to make prevention part of health care reform—resolving whether prevention will help reduce spending is highly relevant.

The question of whether prevention saves money is incorrectly framed. Health care, like other goods, is not purchased to save money. The dollar can be stretched further—more goods can be acquired—by optimizing economic value. The proper question for a preventive (or therapeutic) intervention is how much health the investment purchases. This is typically measured in terms of cost-effectiveness or cost-utility, the ratio between the cost of a service and its benefits. Some services cost relatively little per unit of health gain and represent good buys. Some are extremely good buys because they generate net savings, but such services are uncommon. Much of the nation's enormous health care budget goes toward expensive tests and treatments that produce relatively little health gain per dollar. Services ordinarily are considered to have reasonable cost-effectiveness if they cost less than \$50 000 to \$75 000 per quality-adjusted life year (QALY), but payers routinely cover treatments that cost more than \$100 000 per QALY.

The occasional service that produces net savings is hardly a panacea for controlling spending. Through sheer volume, far more can be accomplished by curtailing lavish outlays on expensive, low-value services and investing more in high-value services that improve health at less cost (and may occasionally yield net savings). This redistribution in

spending offers the greatest opportunity to save more lives with the same dollar. Prevention stands out among the cadre of interventions that combine good health outcomes with good economic value. Although disputes exist on the margins, this much is clear:

1. A core set of preventive services is effective. Hundreds of thousands of lives would be saved annually if people stopped smoking, lost weight, exercised regularly, and consumed a healthy diet. Support is also nearly universal for a package of effective clinical preventive services (eg, screening tests, immunizations) recommended by the US Preventive Services Task Force and other reputable groups. Improved implementation of this core package could greatly reduce the nation's disease burden. By one account, increasing delivery of just 5 clinical preventive services would avert 100 000 deaths per year.⁵

2. These evidence-based clinical preventive services offer high economic value. Whereas major disease treatments (eg, angioplasty) can cost \$100 000 or more per QALY, most evidence-based preventive services offer a better value. For example, colonoscopy and other evidence-based screening tests for colorectal cancer cost less than \$25 000 per QALY.⁶ Among 25 recommended preventive services, 15 cost less than \$35 000 per QALY and 10 services cost less than \$14 000 per QALY.⁶

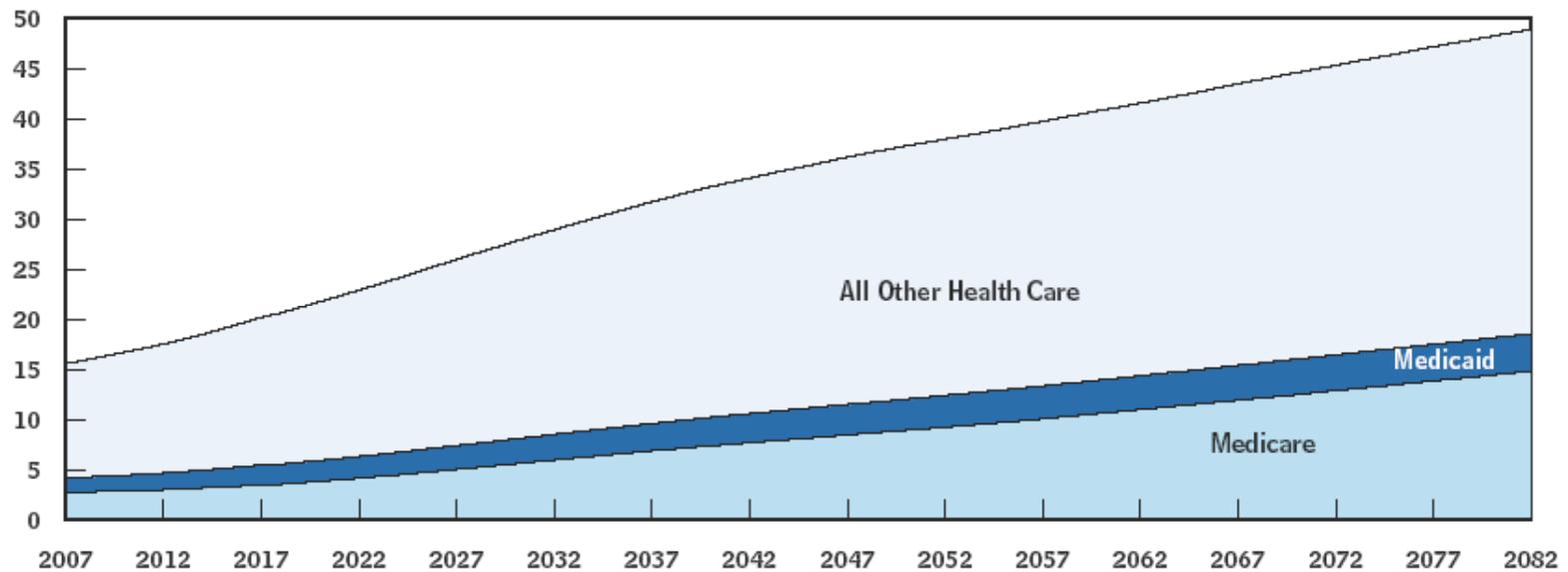
3. Among the core set of preventive services that offer high economic value, a subset yields net savings. The literature reports net savings from childhood immunizations,⁷ smoking cessation,⁸ and aspirin prophylaxis among patients at increased risk for cardiovascular disease.¹¹ Smoking cessation counseling by clinicians, if not cost saving, is highly cost-effective (less than \$5000 per QALY).¹⁰

4. Some preventive services, like many disease treatments, offer poor economic value. Cost-effectiveness is poor when effectiveness is uncertain or, as happens with some preventive services, the absolute probability of benefit is low (eg, offering services to low-risk patients, frequent rescreening, and pursuing aggressive targets [eg, reducing low-density lipoprotein cholesterol levels to <100 mg/dL]).

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Projected Spending on Health Care as a Percentage of Gross Domestic Product

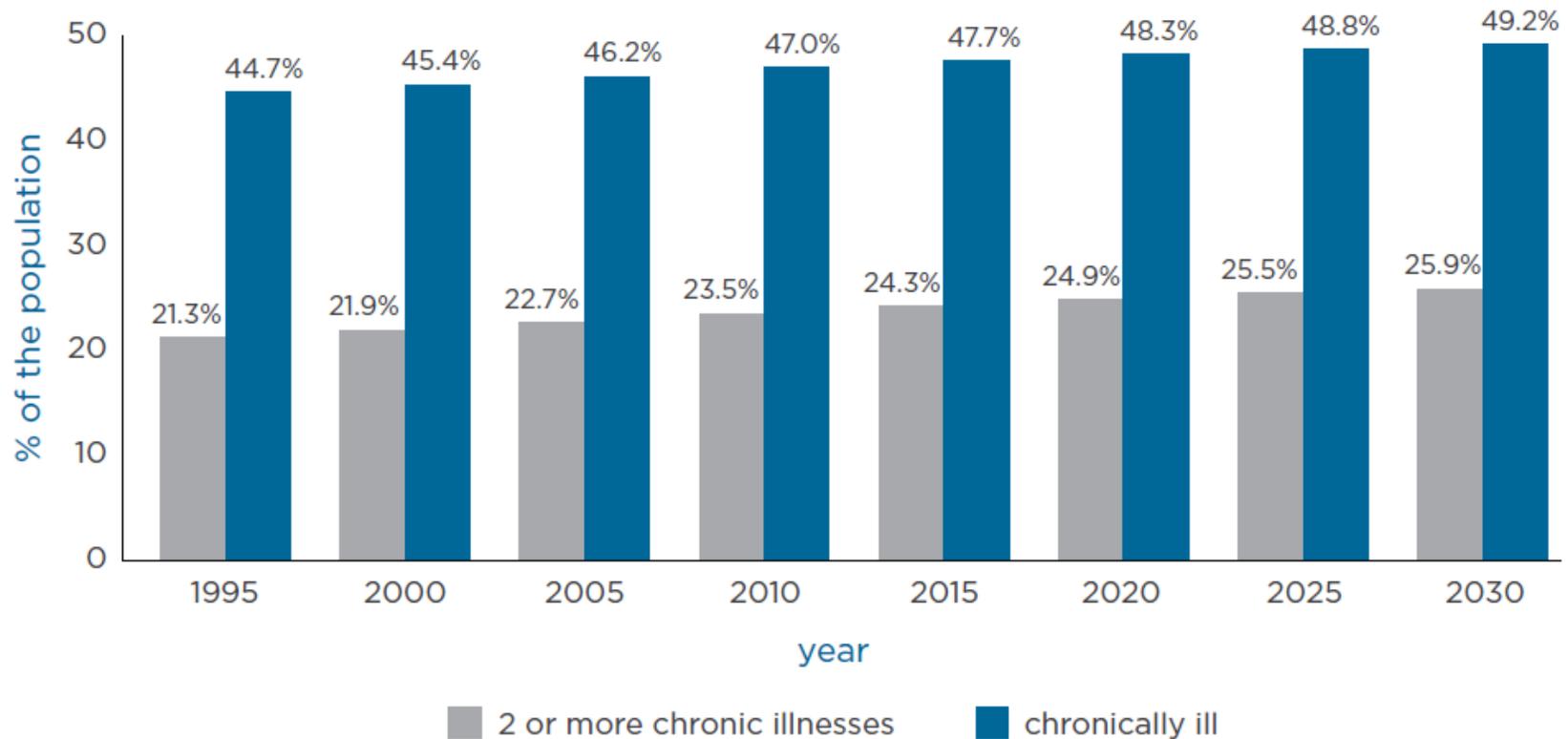
(Percent)



Source: Congressional Budget Office.

Source: Congressional Budget Office, *The Long-Term Outlook for Health Care Spending, 2007*

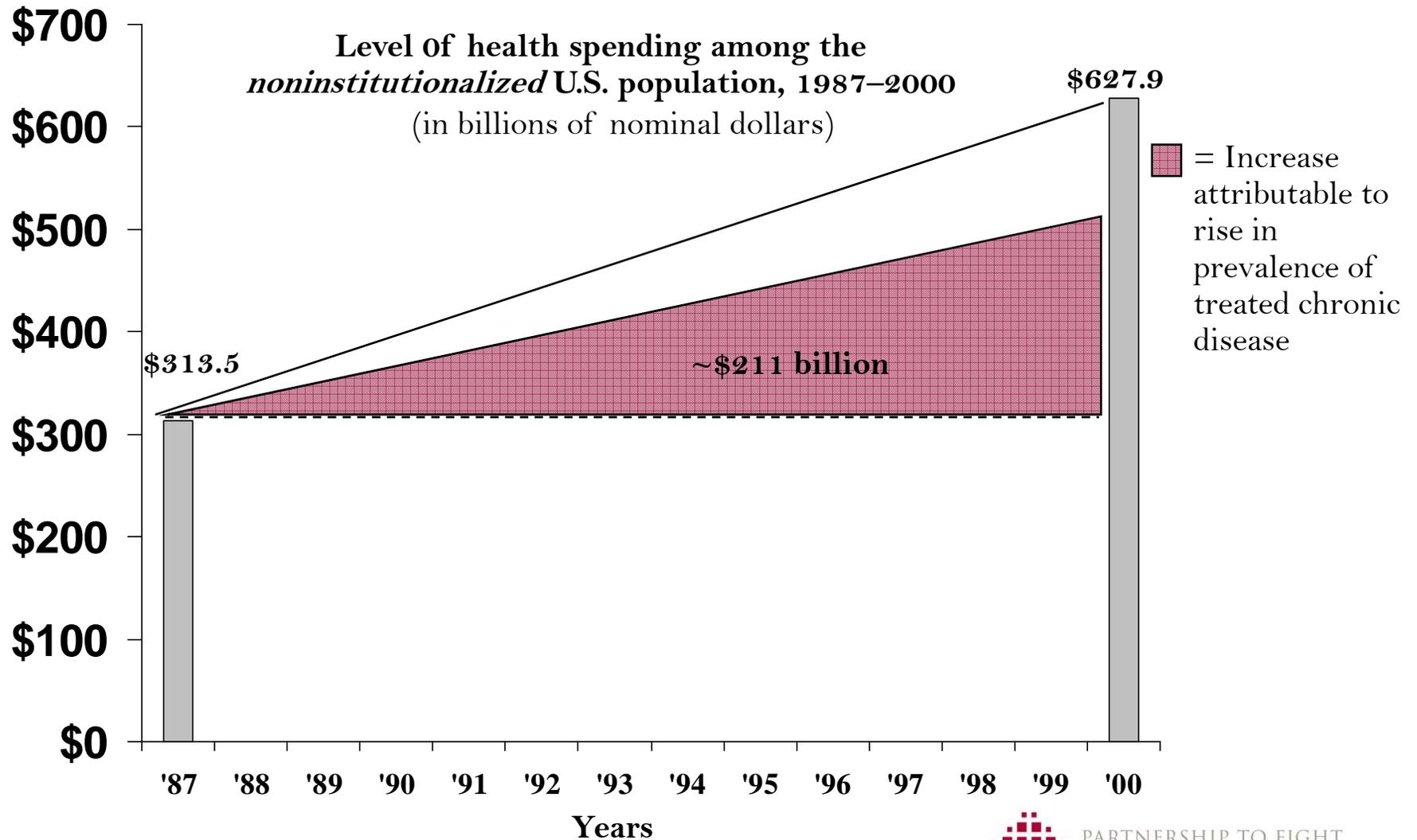
Figure 1 Percentage of the Population With Chronic Diseases, 1995-2030



Source: Projections of Chronic Illness Prevalence and Cost Inflation. Wu, Shin-Yi and Anthony Green, RAND, October 2000.

Source: O'Grady MJ, Capretta JC. Health-Care Cost Projections for Diabetes and other Chronic Diseases: The Current Context and Potential Enhancements. Washington, DC: Partnership to Fight Chronic Disease, 2009.

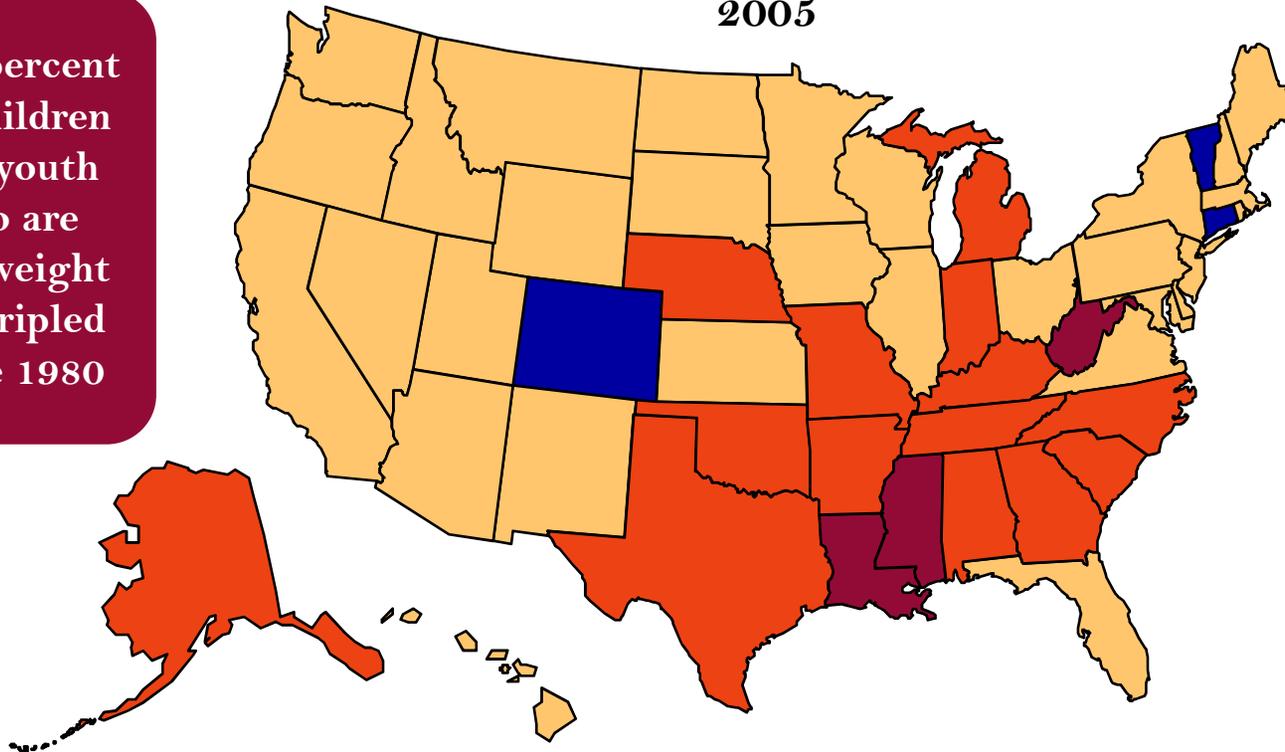
Two-thirds of the increase in health care spending is due to increased prevalence of treated chronic disease



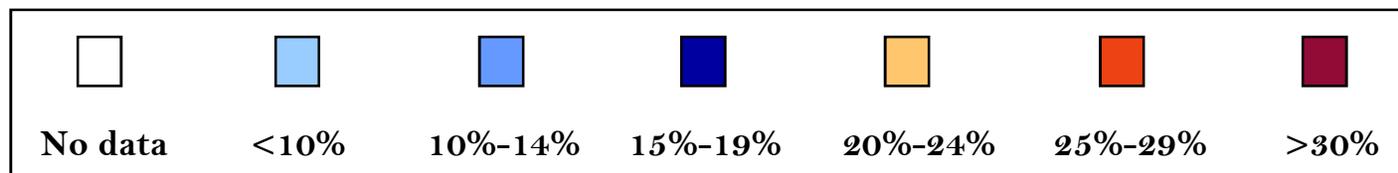
The doubling of obesity between 1987 and today accounts for nearly 30% of the rise in health care spending

Percent of U.S. Adults Who are Obese*
2005

The percent of children and youth who are overweight has tripled since 1980



If the prevalence of obesity was the same today as 1987, health care spending in the US would be 10 percent lower per person—about \$200 billion less



*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" person

The Logic of Prevention

- 38% of all U.S. deaths attributable to 4 behaviors*:
 - Tobacco use
 - Diet
 - Physical inactivity
 - Alcohol misuse
- For some, health argument is reason enough to invest in prevention



*Mokdad et al., 2001

The Price Paid for Not Preventing Diseases

■ Health outcomes

- Illness: Morbidity, frequency/severity of illness, functional status, quality of life
- Lives lost: Mortality, life expectancy, healthy years of life lost

The Full Price of Not Preventing Diseases

■ Health outcomes

- Illness: Morbidity, frequency/severity of illness, functional status, quality of life
- Lives lost: Mortality, life expectancy, healthy years of life lost

■ Resource consumption

- Costs of avertable disease
 - Excess medical care
 - Stresses on broader economy, societal costs
- Getting less for the dollar

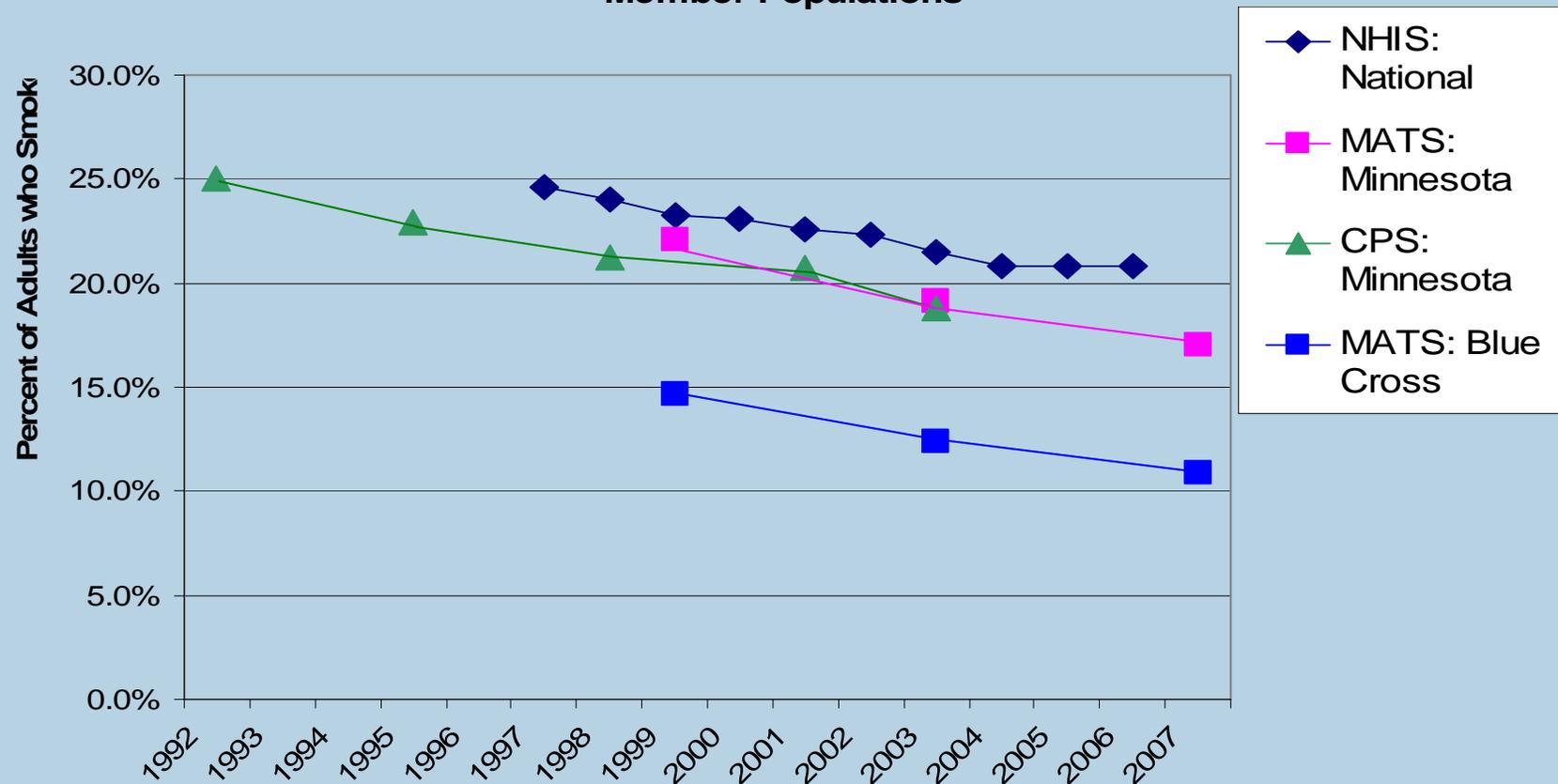
“In 2001...spending for health care per person of normal weight was \$2,783, compared with \$3,737 per obese person and \$4,725 per morbidly obese person...A rise in the prevalence of obesity is therefore a likely contributor to the growth of health care spending.”

Statement of Peter R. Orszag, Director, CBO, Growth in Health Care Costs, before the Committee on the Budget, United States Senate, January 31, 2008



Tobacco: Results

Prevalence of Smoking among National, Minnesota, and Blue Cross Member Populations





Blue Cross savings

- > The decrease in smoking rates among our members results in:
 - At least \$25 million less in health care costs each year
 - Average annual savings per additional nonsmoker = \$1,067

The Politics of Prevention

Cancer screening and other measures for heading off disease don't always reduce health-care costs.

Preventing Chronic Disease: An Important Investment, But Don't Count On Cost Savings

An overwhelming percentage of preventive interventions add more to medical costs than they save.

by Louise B. Russell

Do Prevention Or Treatment Services Save Money? The Wrong Debate

Instead of debating whether prevention or treatment saves money, we should determine the most cost-effective ways to improve population health.

by Ron Z. Goetzel

PREVENTION'S POTENTIAL FOR SLOWING THE GROWTH OF MEDICAL SPENDING

LOUISE B. RUSSELL, Ph.D.
RESEARCH PROFESSOR
INSTITUTE FOR
RUTGERS UN

OCTOBER



Collaborating to Conquer Cancer

Making the Business Case for Cancer Prevention and Early Detection
Key Messages

ISSUE REPORT

Prevention for a Healthier America:

INVESTMENTS IN DISEASE PREVENTION
YIELD SIGNIFICANT SAVINGS,
STRONGER COMMUNITIES



JULY 2008

PREVENTING EPIDEMICS.
PROTECTING PEOPLE.



The Importance of Value

- Health is a *good*
- *Goods* are not purchased to save money; there is no free lunch









The Importance of Value

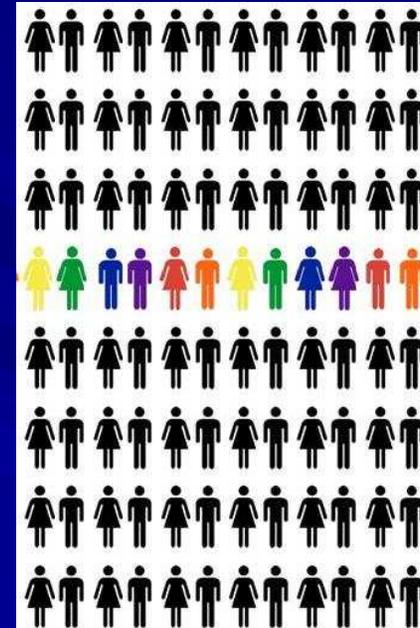
- Health is a *good*
- *Goods* are not purchased to save money; there is no free lunch
- The priority is optimizing *value*: making the dollar go farther
- Money is saved relative to competing options
- *Return on investment* is what matters; whether a service is preventive or otherwise is not the point

Will it Save Money?

The Wrong Question

Controlling Costs by Optimizing Value

Return on Investment



Return on Investment

- Cost-benefit
- Cost-effectiveness
- Cost-utility

Cost-effectiveness ratio:

$$\frac{\text{Cost (\$)}}{\text{Health Benefit}}$$

Health Care Expenditures

Cost Saving
(CE ratio ≤ 0)

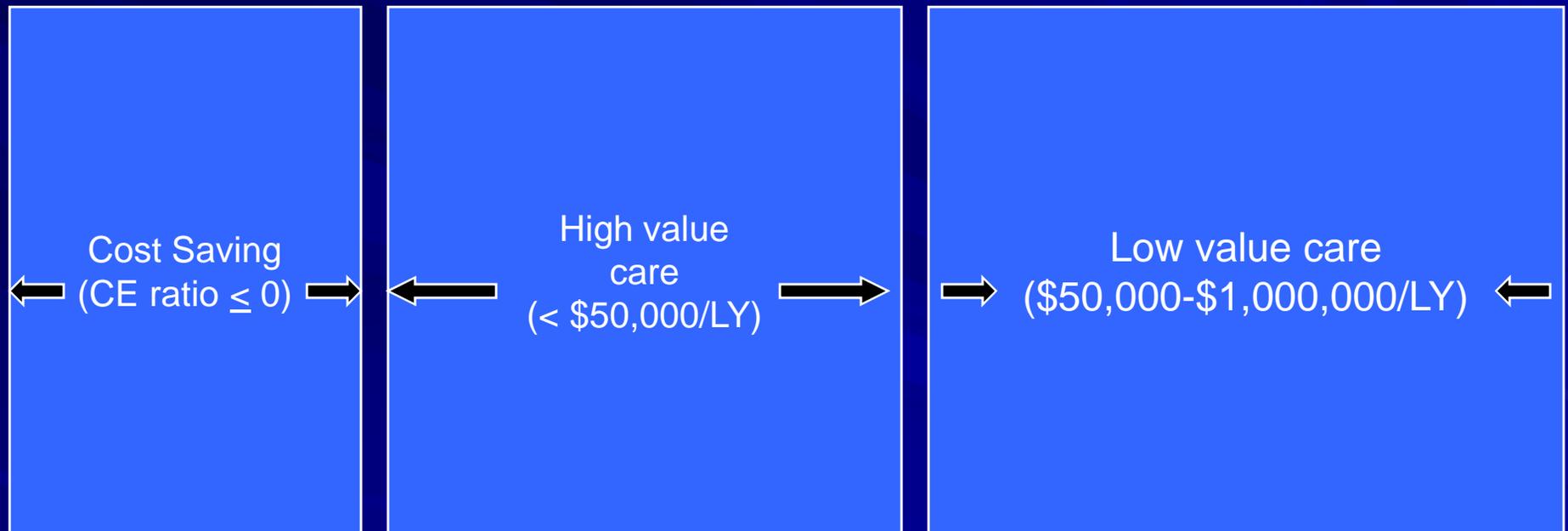
High value
care
($< \$50,000/\text{LY}$)

Low value care
($\$50,000-\$1,000,000/\text{LY}$)

Health Care Expenditures



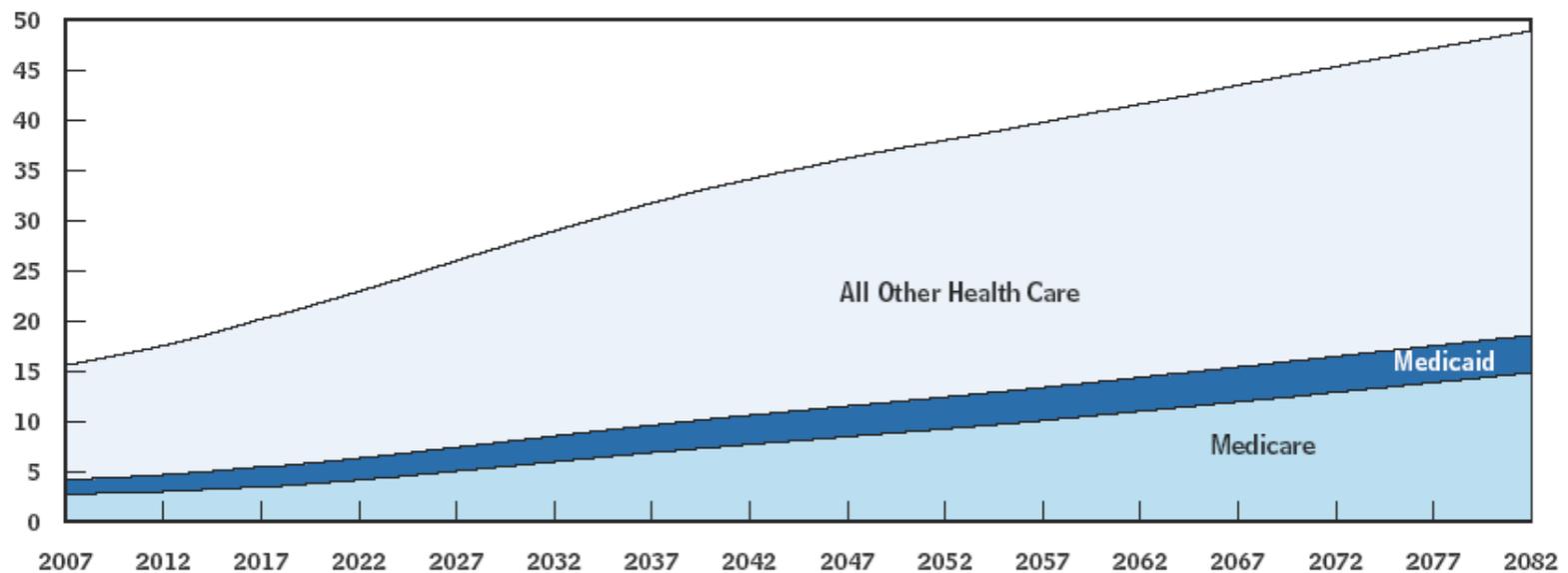
Health Care Expenditures



Health Care Expenditures

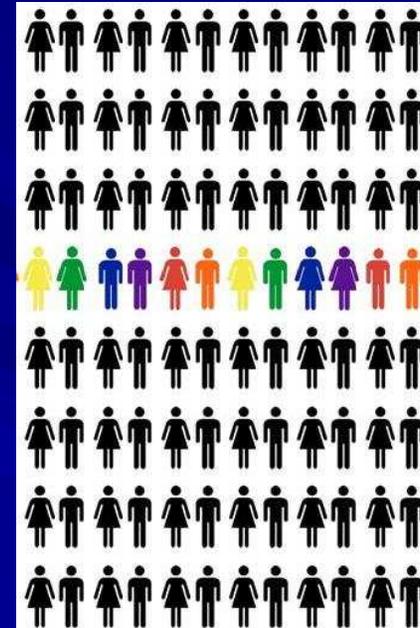
Projected Spending on Health Care as a Percentage of Gross Domestic Product

(Percent)

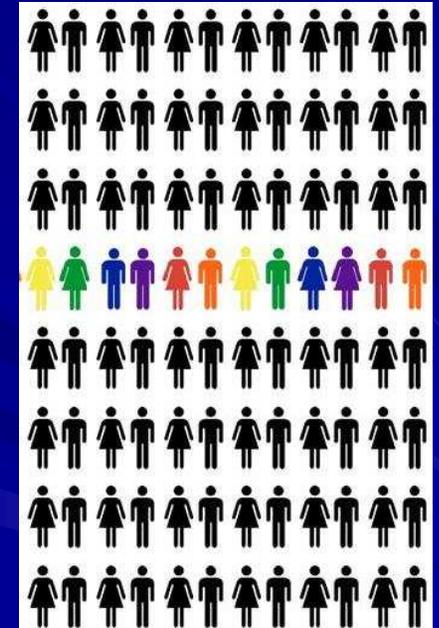
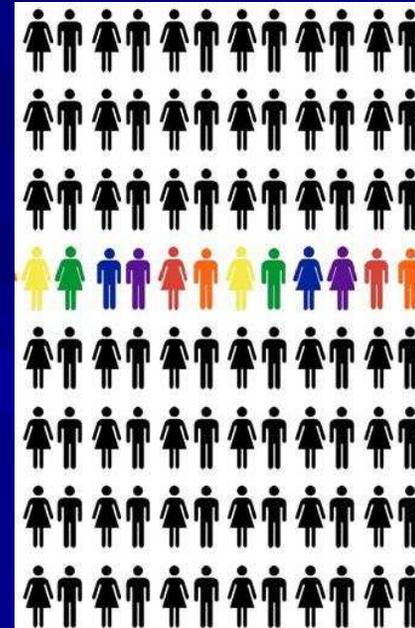


Source: Congressional Budget Office.

Return on Investment



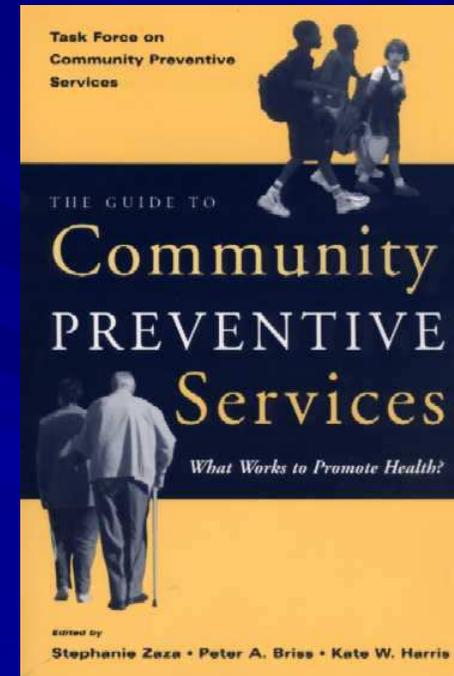
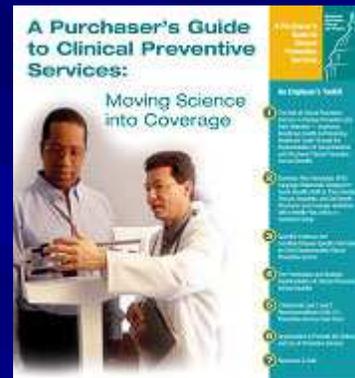
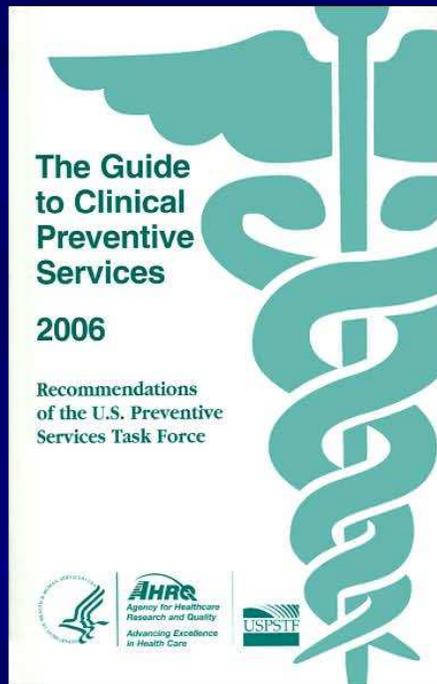
Return on Investment



Areas of Consensus

1. A core set of preventive services is effective
2. Evidence-based preventive services offer high economic value
3. A subset of core preventive services yields net savings
4. Some preventive services, like many disease treatments, offer poor economic value

1. A Core Set of Preventive Services is Effective



2. Evidence-Based Preventive Services Offer High Economic Value

Theme Articles

Priorities Among Effective Clinical Preventive Services Results of a Systematic Review and Analysis

Michael V. Maciosek, PhD, Ashley B. Coffield, MPA, Nichol M. Edwards, MS, Thomas J. Flottemesch, PhD, Michael J. Goodman, PhD, Leif I. Solberg, MD

- Screening
 - Breast cancer
 - Cervical cancer
 - *Chlamydia* infection
 - Colorectal cancer
 - Hypertension
 - Problem drinking*
 - Poor vision*
- Health behavior counseling
 - Smoking cessation*
 - Calcium supplementation
 - Folic acid use
 - Injury prevention among children
- Immunizations (vaccines)*
- Chemoprophylaxis
 - Aspirin use (high-risk adults)*

* Net cost savings in certain groups

Source: Am J Prev Med 2006;31(1):52–61

Most Cost Effective Preventive Services

\$0 to \$13,999/QALY

Chlamydia screening (sexually active adolescents and young women)

Colorectal cancer screening (adults 50+)

Influenza immunization (adults 50+)

Pneumococcal immunization (adults 65+)

Vision screening in preschool age children

Most Cost Effective Preventive Services

\$14,000 to \$34,999/QALY

Cervical cancer screening (all women)

Counseling women of childbearing age to take folic acid supplements

Counseling women to use calcium supplements

Injury prevention counseling for parents of young children

Hypertension screening (all adults)

3. A Subset of Core Preventive Services Yields Net Savings

- Aspirin prophylaxis among persons at risk for cardiovascular disease
- Childhood immunizations
- Smoking cessation & smoking cessation counseling
- Screening for problem drinking
- Vision screening among seniors

4. Some Preventive Services (Like Many Disease Treatments) Offer Poor Economic Value

- When effectiveness or safety is uncertain
- When the absolute probability of benefit is low
 - low-risk patients
 - frequent rescreening
 - aggressive treatment targets

The Importance of Context

Who is doing the preventive intervention?

- Individuals
- Health care system
- Community-based programs



What is Prevention?

	Primary Prevention	Secondary Prevention	Tertiary Prevention
Clinical Prevention	Behavioral counseling by physicians	Testing by physicians for early detection of cancer, heart disease, etc.	Chronic illness care and disease management by physicians
Community Population-Based	Altering the community and environment to promote healthy lifestyles	Screening fairs and other community venues for disease testing	Self-care; disease management at home, work, school

Questions About the Economics of Prevention

- How much time do interventions and outcomes require?
- Are the absolute benefits on the population level too modest?
- Does prevention delay but not avert spending?
- Does it cost more if people live longer?

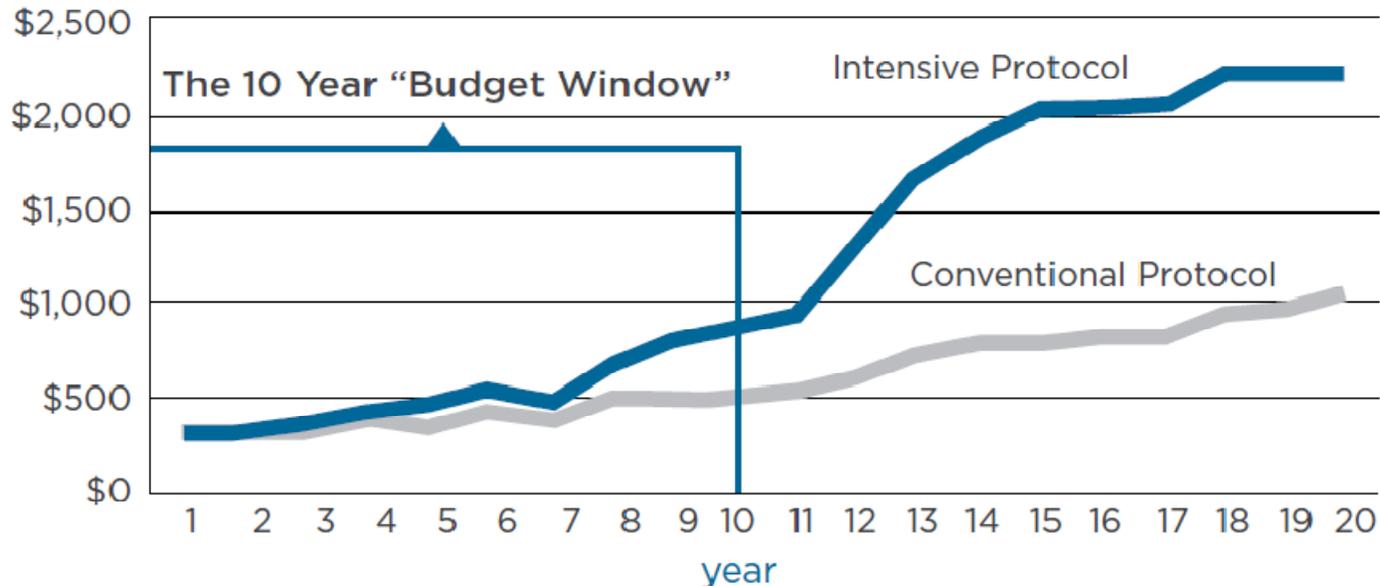
Economic Advantages of Preventive Interventions

- Single risk factors influence multiple diseases
- Long time horizon is an opportunity for “compounding” of benefits (e.g., childhood obesity)
- Intangible benefits of good health (longer, healthier life; workforce productivity; competitiveness; broader societal effects)

Avertable Costs

Figure 4 The Budget Window and Disease Progression

Type 2 Diabetes and Glucose Control Efforts, Average Annual Costs Averted from Complications - 2007 \$



Source: National Changing Diabetes Programs: Federal Health Care Cost Estimating: A Look at Current Practice and the Implications for Assessing Chronic Disease Prevention Proposals

Source: O'Grady MJ, Capretta JC. Health-Care Cost Projections for Diabetes and other Chronic Diseases: The Current Context and Potential Enhancements. Washington, DC: Partnership to Fight Chronic Disease, 2009.

Community-Based Prevention

- Many community-based preventive measures are (a) effective, and (b) offer high economic value, and (c) some produce net savings
- Some community or public health measures outperform clinical interventions
- Collaborations between clinical and community interventions offer high yield



Tobacco: Major activities

- > Tobacco tax increases
- > Passage and defense of smoke-free laws
- > Mass media campaigns
- > Cessation support for Blue Cross members
- > Outreach to high priority populations

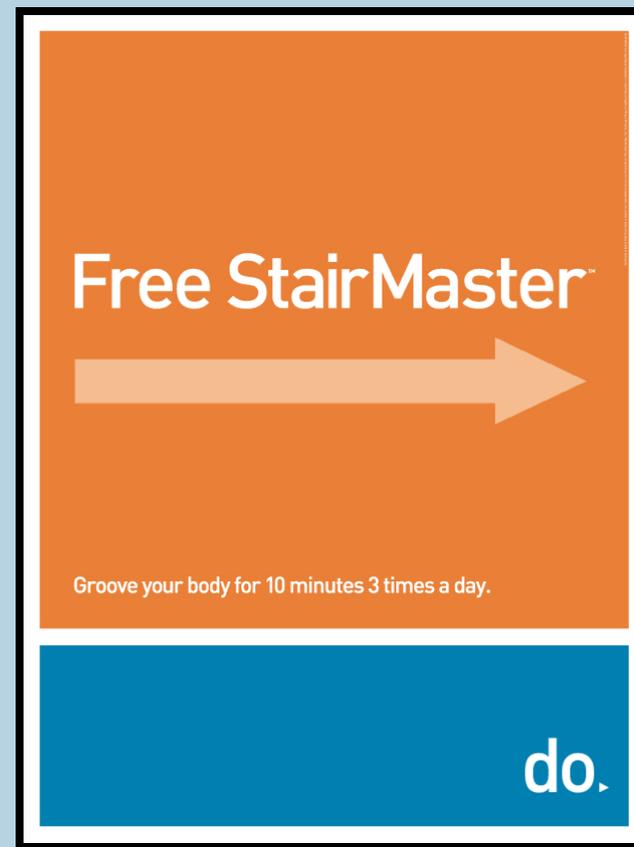
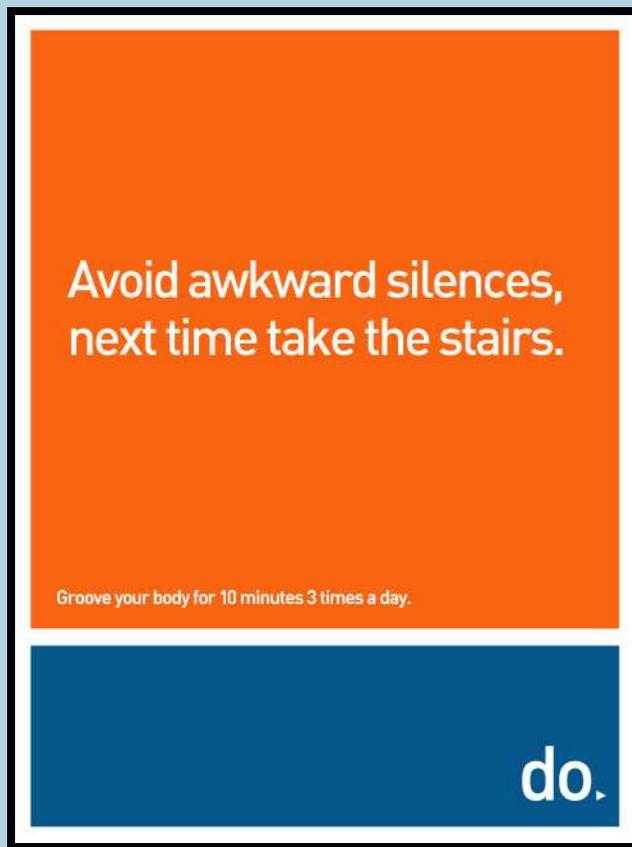
Physical activity: Current activities

- > *do* campaign
- > Active Living Minnesota
- > Complete Streets
- > Active Workplaces





The do campaign – workplace signs





Sample ads – in stores, billboards, etc.

**Cancer protection.
Now in a convenient
package.**

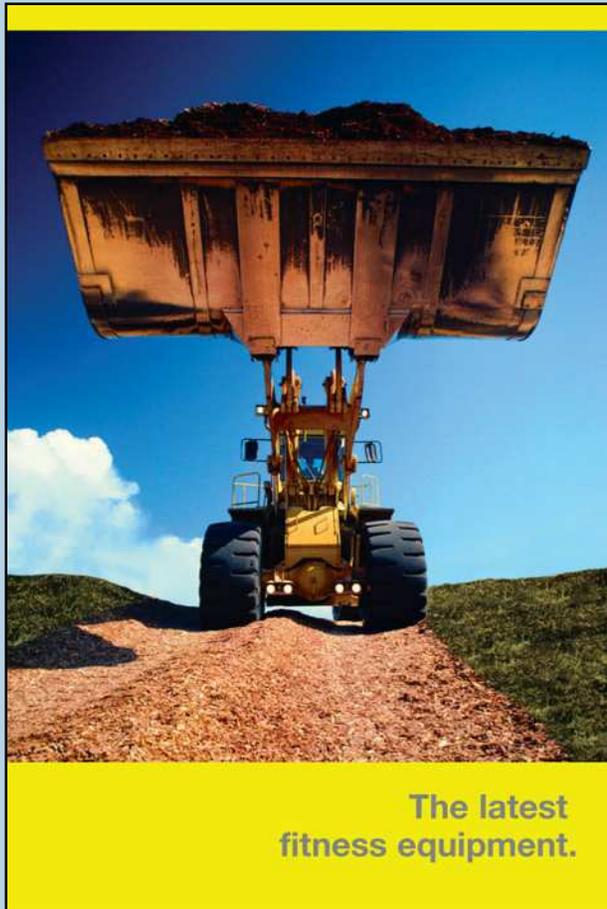
Fresh, frozen or dried, eat more fruits and veggies today.

EveryHelpingHelps.com



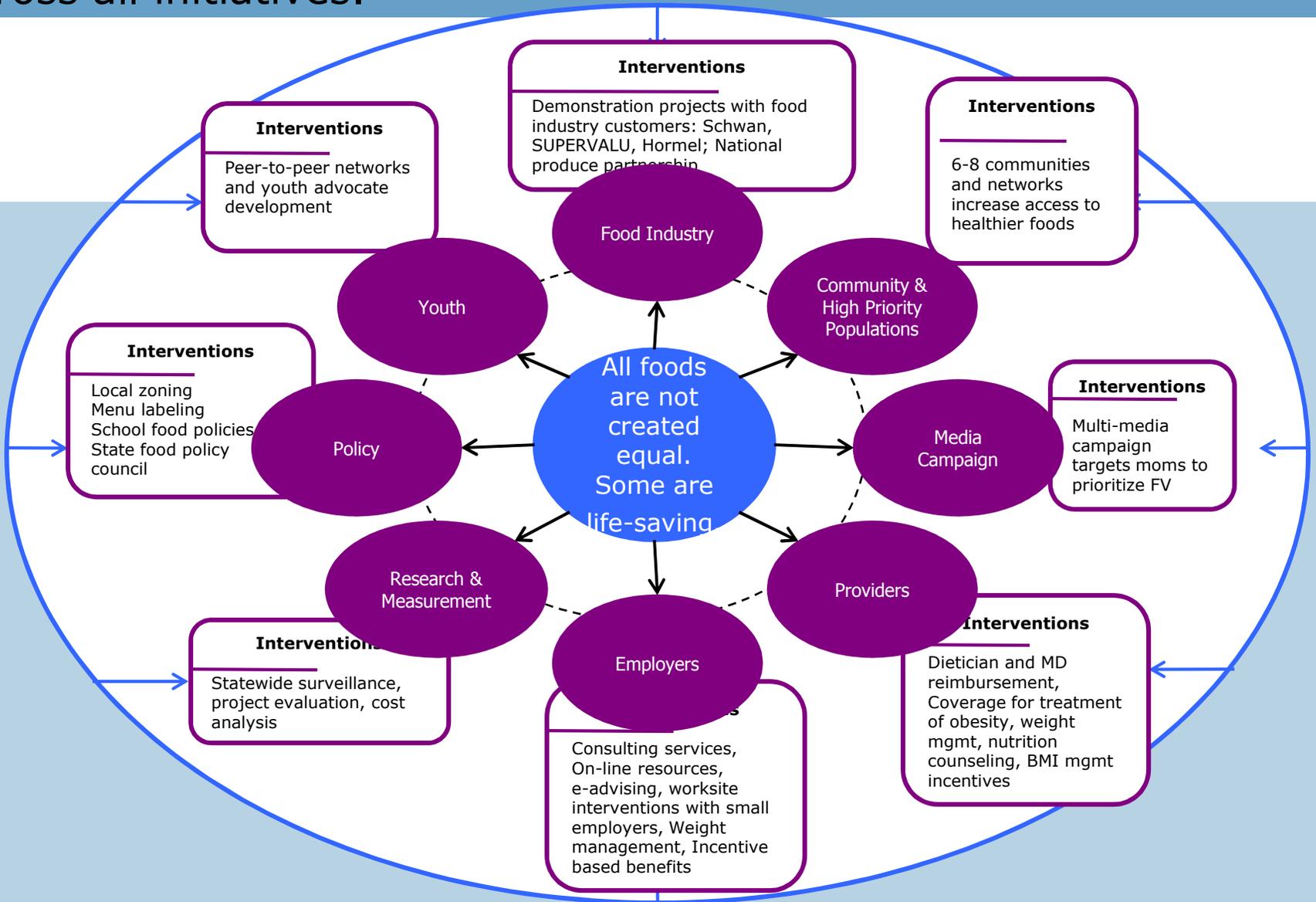


Physical environment influences behavior

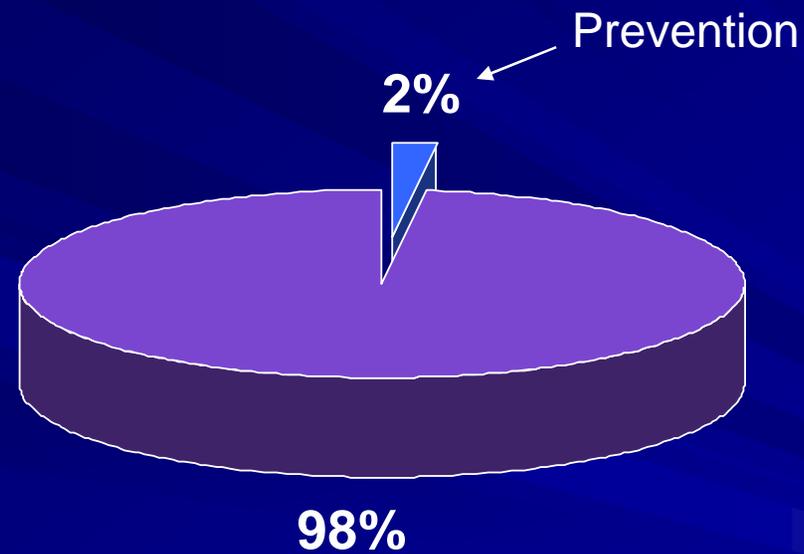




A comprehensive approach integrated across all initiatives.



The Double Standard



\$2 Trillion Health Care Budget, United States

Leveling the Playing Field

1. Does the intervention improve health outcomes, and how strong is the evidence?
2. If the intervention is effective, is it cost-effective (a good value)?
3. Can other options achieve better results, or the same results at lower cost?



Prevention



Diagnostic Tests
Treatments

Conclusion

- The spending crisis requires a comprehensive search for ways to shift spending from services of low economic value to those with high cost-effectiveness or net savings.
- Whether they are preventive or otherwise is not the point.
- What matters is getting good value on the dollar.
- It makes sense to invest in a core package of preventive services that are effective and offer good economic value.
- Services that yield net savings are obvious priorities, but shifting spending to high-value services offers the greatest gains.
- We can't afford to apply this test to prevention only and not to the rest of medical care.

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