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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Prevention has always been the preferred option for improving health and reducing disease and death. For many, this health argument is reason enough to invest in prevention. Others, citing scarce resources, advocate a careful assessment of the costs and savings associated with prevention. It initially costs more to deliver preventive services, but the savings resulting from health benefits will occur over time and are less clear. Some studies indicate that effective prevention programs would save the nation billions of dollars, while others predict the reverse. Economists and policymakers have argued that prevention needs more money and that it inherently costs more, thereby reducing the cost-effectiveness compared to disease care. For policymakers, issues relating to economic criteria, preventive services, screening, and cost-effectiveness of preventive care are all important.

The argument regarding prevention versus treatment focuses on the issue of cost-effectiveness. The cost of a preventive service must be weighed against the potential health benefits. Prevention is often seen as more cost-effective than treatment, but this is not always the case. For example, smoking cessation and colorectal cancer screening both offer significant health benefits, but the costs and benefits differ. Smoking cessation programs can help reduce the risk of cardiovascular disease, while colorectal cancer screening can detect cancer early, leading to better outcomes.

The effectiveness of preventive services is often measured by their cost-effectiveness. This means that the benefits of the service must be weighed against the cost. In general, preventive services that save money in the long run tend to be more cost-effective. For example, preventive services such as screening tests, immunizations, and counseling can save money by preventing future health care costs. However, it is important to note that the cost-effectiveness of preventive services can vary depending on the population being served and the specific services being provided.

In conclusion, the economic argument for disease prevention is compelling. Prevention services can save money in the long run, and they offer significant health benefits. Policymakers need to carefully assess the costs and savings associated with prevention to ensure that they are making the most cost-effective decisions.
Projected Spending on Health Care as a Percentage of Gross Domestic Product

Source: Congressional Budget Office,
Figure 1 Percentage of the Population With Chronic Diseases, 1995-2030


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.

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.

Percent of U.S. Adults Who are Obese*

2005

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

*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

- NHIS: National
- MATS: Minnesota
- CPS: Minnesota
- MATS: Blue Cross
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

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RESEARCH PROFESSOR
INSTITUTE FOR MEDICAL RESEARCH
RUTGERS UNIVERSITY

OCTOBER 2008
The Importance of Value

- Health is a *good*
- *Goods* are not purchased to save money; there is no free lunch
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/LY)
- **Low value care** ($50,000-$1,000,000/LY)
Health Care Expenditures

- Cost Saving (CE ratio \( \leq 0 \))
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Health Care Expenditures

- **Cost Saving (CE ratio ≤ 0)**
- **High value care (< $50,000/LY)**
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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

- **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

Most Cost Effective Preventive Services

<table>
<thead>
<tr>
<th>$0 to $13,999/QALY</th>
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</thead>
<tbody>
<tr>
<td>Chlamydia screening (sexually active adolescents and young women)</td>
</tr>
<tr>
<td>Colorectal cancer screening (adults 50+)</td>
</tr>
<tr>
<td>Influenza immunization (adults 50+)</td>
</tr>
<tr>
<td>Pneumococcal immunization (adults 65+)</td>
</tr>
<tr>
<td>Vision screening in preschool age children</td>
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</tbody>
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## Most Cost Effective Preventive Services

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<tr>
<td>Cervical cancer screening (all women)</td>
</tr>
<tr>
<td>Counseling women of childbearing age to take folic acid supplements</td>
</tr>
<tr>
<td>Counseling women to use calcium supplements</td>
</tr>
<tr>
<td>Injury prevention counseling for parents of young children</td>
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<tr>
<td>Hypertension screening (all adults)</td>
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</tbody>
</table>
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?

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

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

Avoid awkward silences, next time take the stairs.

Free StairMaster

Groove your body for 10 minutes 3 times a day.
Sample ads – in stores, billboards, etc.

Cancer protection. Now in a convenient package.

Fresh, frozen or dried, eat more fruits and veggies today.
Physical environment influences behavior
A comprehensive approach integrated across all initiatives.

- **Interventions**
  - Demonstration projects with food industry customers: Schwan, SUPERVALU, Hormel; National produce partnership
  - 6-8 communities and networks increase access to healthier foods

- **Food Industry**
  - Peer-to-peer networks and youth advocate development

- **Youth**
  - Local zoning, Menu labeling, School food policies, State food policy council

- **Community & High Priority Populations**
  - Media Campaign: Multi-media campaign targets moms to prioritize FV

- **Policy**
  - Statewide surveillance, project evaluation, cost analysis

- **Employers**
  - Consulting services, On-line resources, e-advising, worksite interventions with small employers, Weight management, Incentive based benefits

- **Providers**
  - Dietician and MD reimbursement, Coverage for treatment of obesity, weight mgmt, nutrition counseling, BMI mgmt incentives

- **Research & Measurement**

- **Interventions**
  - All foods are not created equal. Some are life-saving

- **Media Campaign**
  - Multi-media campaign targets moms to prioritize FV

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- **Research & Measurement**
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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