A state legislature is debating a bill that would require health insurance plans to cover prostate cancer screening. A vocal group of advocates is pressuring legislators. Business groups oppose the proposed mandate. At the same time, the legislature is weighing the benefits and costs of a new public awareness campaign to prevent birth defects by encouraging women of childbearing age to consume folic acid supplements. Members of the health committee want additional information before deciding whether either bill should move forward.

Comparing health policies, such as prostate cancer screening and public awareness about folic acid, may seem as futile as the proverbial apples-to-oranges comparison. Yet, policymakers must often debate the merits of different interventions, keeping in mind issues such as limited budgets, health risks, and benefits. Poorly informed decisions can mean opportunities lost and money misspent.

These legislators are facing decisions that could in part be informed by cost-effectiveness analysis, which takes into account several questions.

- How big is the health problem:
  • what is the burden of the disease, and
  • how much does it cost?

- How effective is the proposed solution?

- What is the cost of the solution?

- How do the health benefits match up to the costs (is the solution cost effective)?

This publication is designed to help policymakers – including legislators, executive branch officials, employers, health plan executives, and others – understand the purpose and uses of cost-effectiveness analysis and more critically assess cost-effectiveness information. Disease prevention and health promotion examples are used to illustrate cost-effectiveness concepts, but these concepts apply broadly to all types of health care options (e.g., diagnostic and treatment services).
Comparing Health Policy Options

The following sections describe fundamental concepts necessary to understand cost effectiveness and compare it with other types of economic information.

How Big Is the Health Problem?

Proponents of a new policy often make their case by emphasizing the size of the health problem addressed by the policy. Disease burden and economic burden are two ways to assess the size of a health problem (e.g., a disease or type of injury).

Disease Burden

Policymakers may be most familiar with disease burden expressed as the number of people afflicted with a disease, the number of injuries, the number of deaths, or the ranking of a disease among other diseases, injuries, or causes of death (e.g., most common cancer or third leading causing of death).

Careful analysis of a new policy generally requires more precise quantification of the disease burden. Strictly speaking, deaths can be delayed but not prevented, and most people prefer to delay death as long as possible. Therefore, a common measure of disease burden is the number of life years lost. Life years lost is estimated by comparing life expectancy to the age at death from a condition. For example, the life years lost due to influenza among persons 50+ years of age can be estimated as:

\[
\text{Life years lost} = (\# \text{ of persons age 50+ years who die from influenza annually}) \times (\text{average life expectancy at death – average age at death})
\]

Quality-adjusted life years lost (QALYs lost) is a broad or more comprehensive measure of burden because it adjusts years of life for their quality. This measure (and similar measures such as disability-adjusted life years lost or DALYs lost) estimates the burden of non-fatal health conditions, especially chronic or disabling conditions, such as osteoporosis and asthma. To measure quality of life, different health outcomes are weighted based on surveys of people’s preferences for experiencing the outcome. For example, individuals may feel that one year lived with arthritis is as valuable as 70% of one year of healthy life. In that case, QALYs lost would be calculated by assigning a value of 1.0 to a year of healthy life and .70 to a year with arthritis.

Economic Burden

The economic burden of an illness or injury is also used to appraise the size of a health problem. Such cost-of-illness estimates can include a variety of financial losses. Virtually all cost-of-illness estimates include the medical cost of treating a disease or injury. Some estimates will include the cost to other parts of the economy, for example, the cost of auto accidents and crime due to alcohol misuse. Which costs are included depends on the perspective of the analysis (see “What Is the Perspective of the Analysis” on page 6).

Some cost-of-illness estimates will include the value of time lost, sometimes referred to as indirect costs. Most often, indirect costs are estimated as time lost from work (productivity losses) and may include time lost from unpaid work such as childcare. Estimates of indirect costs may also include the value of leisure time lost.

Finally, the size of the health problem may include the dollar value of health lost. There is no universally agreed upon means for putting a dollar value on health, particularly a death. Many analysts would argue that there simply is no acceptable method for doing so. When used, two common methods for assessing dollar value on health are 1) estimating loss of earnings as a minimum valuation; and 2) basing estimates on amounts awarded by juries for pain and suffering.
How Effective Is the Proposed Solution?

Of course, no matter how large a health problem is, a new policy is only worth implementing if it reduces the problem. The effectiveness of a policy is the extent to which the problem is reduced or the amount of improvement in health that results (health benefits). Effectiveness is sometimes measured in percentage terms (the percent of the problem reduced). The size of this percentage will vary depending on how the size of the problem is measured (number of cases of disease, number of deaths, life years lost, etc.).

Effectiveness is often measured in the same units as the size of the problem by quantifying how much the size is reduced. These estimates yield measures such as life years saved, quality-adjusted life years saved (QALYs saved), or cost of illness prevented (also called cost savings or the cost offset of a policy).

The benefits of prevention can also be measured by individuals’ willingness to pay for a policy. The dollar amount that people would be willing to pay for a given policy reflects their valuation of all aspects of the policy, including improvements in health.

What Is the Cost?

Prevention does cost money. The cost of a new policy may include physician payments, the cost of drug treatments, or individuals’ out-of-pocket expenses for transportation and co-payments. The cost of prevention may also include estimates of the value of individuals’ time in traveling to and receiving a preventive service (that is, individuals’ indirect costs of prevention).

For public policies, the types of costs are as diverse as public programs: the cost of seatbelt law enforcement (public education campaigns, extra personnel and administration costs in law enforcement agencies, printing new citation forms); the cost of brighter or more frequent street lights (electricity, lighting supplies, maintenance costs); the cost of tracking new infectious diseases (computer systems, data monitoring by epidemiologists, outreach to encourage health care providers to submit data); or the cost of new airport and airline safety equipment (equipment and installation expenses, training staff to use equipment, periodic testing and maintenance).

How Do the Health Benefits Match Up to the Costs?

In health policy, three tools to weigh costs and benefits are common: cost analysis, cost-benefit analysis, and cost-effectiveness analysis. Cost-effectiveness, the primary subject of this publication, will be discussed in the next section.

Cost Analysis

In cost analysis, the net cost of a policy is often calculated by subtracting the cost of illness prevented (or cost offset or cost savings) from the cost of prevention (that is, the cost to implement the proposed solution or policy).

\[
\text{Net cost} (\$) = (\text{cost of prevention}) - (\text{cost of illness prevented})
\]

Other cost analyses may not assess the cost of illness prevented. Users of cost analyses should determine whether the results represent net cost or simply the gross cost of prevention.

A simplified example: the net cost of a community water fluoridation program is the cost of fluoridating the water less the cost savings from dental treatments (such as filling cavities) that are avoided.

When a policy has negative net cost (that is, the cost of illness prevented is greater than the cost of prevention), it is said to be a cost-saving policy. This designation refers to a net cost savings; it does not mean that the policy simply averts some of the cost of treating illness.
In evaluating a health policy, cost-benefit analysis is a specific method of comparing costs and benefits. In other policy areas, cost-benefit analysis is a generic term that encompasses all methods of comparing costs and benefits.

Results of a cost-benefit analysis can also be expressed as net present value, in which a discount rate has been applied to benefits and costs. (Discounting is discussed in page 6.)

A specific type of cost-effectiveness analysis is cost-utility analysis in which health benefits are assessed as life years saved and adjusted to reflect changes in quality of life. (Cost-utility analysis often use the QALY measure.)

Cost-benefit Analysis

In cost-benefit analysis (as it pertains to health care), the cost of a policy is compared to improvements in health as measured in dollars.* The results should be presented in the same way as net cost. A similar presentation is net benefit.*

Cost benefit or net benefit = (cost of prevention) – ($ value of health improvement)

Net benefit = ($ value of health improvement) – (cost of prevention)

Frequently, however, results are expressed as a cost-benefit ratio – in which the benefits are usually on top of the ratio and the costs on the bottom.

Cost-benefit ratio = ($ value of health improvement) ÷ (cost of prevention)

A policy is assumed to be worthwhile if the cost-benefit ratio is greater than one (indicating benefits are greater the costs) or if net benefit is greater than zero. (If net benefit is less than zero, then the costs exceed the benefits.)

Caution is warranted when using a cost-benefit analysis to inform a health policy decision when the study compares the cost of prevention to a dollar value of life. There is no accepted method to assign a dollar value to life. Some cost-benefit analyses of health policies avoid this concern by comparing the cost of the policy to how much individuals would be willing to pay for the policy. However, because willingness-to-pay studies ask people to respond to hypothetical situations, these estimates may overstate individuals’ true willingness to pay if faced with the actual task of choosing between the policy and their money.

A cost analysis, as described above, may be expressed as a ratio (cost of illness prevented/cost of prevention) rather than as net cost. Some analysts may label this ratio as a cost-benefit analysis, but by accepted health care terminology, this is a cost analysis because the health benefits have not been expressed as dollars (in fact, they have been ignored).

Cost-effectiveness Analysis

Cost-effectiveness analysis is the third tool used to weigh the costs and benefits of health policies.* This publication emphasizes cost-effectiveness analysis because it can help answer a fundamental policy question: what policies, programs, or services yield the greatest health benefits for any given amount of resources?

The remaining pages are devoted to cost effectiveness, starting with main concepts and leading to important methodology issues.

Cost-effectiveness analysis presents the cost of a policy with the effects in a single ratio:

Cost-effectiveness ratio = (net cost of the policy) / (health improvement achieved by the policy)

Thus, cost effectiveness does not simply refer to the cost of an intervention, but to the net cost of the intervention per a defined outcome. (Net cost is explained in the prior section.)

Because health improvements may be measured in a number of ways, a variety of cost-effectiveness ratios may be produced. The following are examples from recent studies.

➣ $200,000 per death averted by targeted screening for sickle cell disease among newborns in Alaska¹

➣ $14,000 per year of life saved from screening women ages 20 to 74 for cervical cancer once every three years²

➣ $900 per Hepatitis B infection prevented among infants from prenatal screening of expectant mothers³

➣ $5,000 per QALY saved by a public education campaign to promote folic acid supplements for the prevention of neural tube defects⁴

* In evaluating a health policy, cost-benefit analysis is a specific method of comparing costs and benefits. In other policy areas, cost-benefit analysis is a generic term that encompasses all methods of comparing costs and benefits.

# Results of a cost-benefit analysis can also be expressed as net present value, in which a discount rate has been applied to benefits and costs. (Discounting is discussed in page 6.)

± A specific type of cost-effectiveness analysis is cost-utility analyses in which health benefits are assessed as life years saved and adjusted to reflect changes in quality of life. (Cost-utility analysis often use the QALY measure.)
Cost effective is NOT necessarily cost saving!

“Cost effective” and “cost saving” are concepts that are frequently confused. Although most preventive services save money in the sense that later medical costs are averted, only a few interventions, such as childhood vaccines, save enough in later medical costs to completely offset the initial investment. These policies would meet the more stringent definition of cost saving.

A cost-effective policy requires fewer resources to achieve health benefits compared to other interventions, but does not necessarily produce net savings. Some cancer screening services, for example, reduce later medical expenditures because it is cheaper to treat cancers detected at earlier stages. However, many individuals must be screened to detect one early-stage cancer, and, as a result, the net cost of screening is positive. With current technologies, screening average-risk individuals is cost effective, but not cost saving, for some cancers – breast, colorectal, and cervical.

Is the Policy Cost Effective?

By itself, a cost-effectiveness ratio (e.g., cost/QALY saved) does not indicate whether or not a policy is cost effective because there is no accepted definition of how many dollars a life year saved or quality-adjusted life year saved is worth. A cost-effectiveness ratio only provides an indication of a policy’s relative cost effectiveness by comparing it to the cost-effectiveness ratios of other policies. One intervention can be considered more cost effective than another if its cost-effectiveness ratio is lower. In other words, it costs less to produce the same unit of health.

For example, breast cancer screening is generally considered cost effective compared to many other medical services. Researchers estimate the cost effectiveness of biennial mammography for women age 50 to 69 years to be about $22,000/QALY saved. The influenza vaccine among persons age 65 years and older is even more cost effective: it is estimated to range from cost saving to about $10,000/QALY saved.

As a general rule of thumb, new interventions costing no more than $25,000-875,000 per QALY saved or per life year saved are usually considered cost effective. Interventions that exceed $75,000/QALY saved may still be worthwhile due to factors other than cost effectiveness.

Cost Effectiveness: One Of Several Policy Considerations

For legislators, public officials, and corporate executives, cost effectiveness is one consideration when making decisions about health policies. Other compelling reasons may exist for adopting a particular policy, even if it is not the most cost-effective alternative.

For example, policymakers may want to target populations who are uninsured or have a high occurrence of chronic disease. Sometimes the most cost-effective policy may not be politically or socially acceptable or even feasible to implement. (In any case, policymakers should at least consider any available evidence of an intervention’s effectiveness.)

With so many opportunities to protect and improve health, choices must be made. Cost effectiveness provides a common language to debate resource allocation for health policies. Decision making based on improper interpretations of cost effectiveness – or based on no cost-effectiveness information at all – can result in economically costly, wasteful policies and missed opportunities to improve health. Cost effectiveness does not replace other criteria for selecting policies, but it does provide additional information to weigh the relative value of different policies.
**Important Cost-effectiveness Concepts**

Analysts who produce cost-effectiveness ratios typically have some training in health economics. They must make numerous decisions when estimating variables, constructing models, and reporting results. The concepts summarized below illustrate five of the most important ways a cost-effectiveness ratio can be influenced by an analyst’s decisions. Policymakers need to understand these fundamental concepts.

1. What Is Being Compared?

Sound policy decisions often consider how a proposed intervention compares with current practice or other reasonable alternatives. In cost-effectiveness analysis, this type of comparison is commonly referred to as an **incremental or marginal analysis**, which is generally used to inform three types of decisions.

- **Should the intervention be provided to lower-risk groups?** The value of a policy for a group at high risk for disease is often clear. However, extending the policy to lower-risk groups may not be clear. For example, it is common for the risk of disease to increase or decrease with age. In some age groups, the very low risk of disease may make the intervention extremely expensive in terms of medical care and individuals’ time. Incremental cost-effectiveness analysis informs decisions about using an intervention in lower-risk groups.

  For example, incremental cost-effectiveness analysis has shown that mammography screening for most women age 40 to 49 years is relatively expensive when compared to screening women age 50+ years.

- **Should the intervention be provided to more people in the target group?** A substantial number of people may be receiving an intervention known to be effective and cost effective. It may be desirable to use resources to extend the intervention to all people in the target group.

  For example, providing diphtheria-tetanus-acellular pertussis vaccinations to children is cost saving on average. Currently, approximately 95% of children in kindergarten and first grade have received the five recommended doses. Immunizing the remaining 5% may not be cost saving for several reasons. These children may, for example, be at lower risk because vaccination of their playmates reduces the risk of transmission. On the other hand, these children may be less likely to receive prompt medical attention if infected; thus, the benefits of vaccination may be great. For these reasons, even without considering the cost of outreach, the cost effectiveness of immunizing the additional 5% may be different from the cost effectiveness of immunizing the first 95%.

- **What technology should be used?**

  Several different technologies may be available to prevent a disease, injury, or cause of death. What technology to use can be a very complex decision.

  For example, several screening tools are available for the early detection of colorectal cancer. Each screening tool has different levels of effectiveness. Some carry rare but severe risks, and the level of risk varies by screening tool. The screening tools might be used separately or in combination. They may also be used at different frequencies (e.g., annually or biannually). Each option results in different levels of prevention, risks, costs, and cost-of-illness savings. In this case, incremental cost-effectiveness analysis can be used to compare each screening strategy to the next best option while taking all of these factors into consideration.

### Average cost-effectiveness analysis

**Average cost-effectiveness analysis** is used when a ratio is needed for estimating costs and outcomes of an intervention compared to doing nothing. Average cost effectiveness may be useful in comparing a broad range of alternative policies by giving them a common base, such as doing nothing. For example, average cost effectiveness may be used to:

- Determine if current or new policies are cost effective relative to some pre-determined level, such as $50,000/QALY saved; or
- Compare two services, two competing technologies, or two populations. For example, average cost effectiveness can help assess whether a program to increase...
influenza vaccination rates or a program to increase pneumococcal vaccination rates is a better use of available resources.

2. What Is the Perspective of the Analysis? What Types of Costs Are Included?

Cost-effectiveness analyses based on different perspectives are generally not comparable because the perspective determines which costs and savings are included in the analysis. The perspective represents the point of view of the intended user of the analysis: private insurer, public payer such as Medicare, employer, patients, health care system, or policymaking body representing taxpayers.

A common point of view is the health care system perspective, which is limited to health care costs. These costs generally include:

- Costs associated with the intervention, such as the cost of preventive counseling or the cost of pharmaceutical treatments;
- Costs of follow-up medical services such as diagnostics for positive screening results;
- Costs of subsequent medical treatments such as treatment of early-stage cancers;
- Medical costs of any harms resulting from the intervention, such as adverse reactions to vaccines; and
- Savings from medical treatments prevented.

The health insurer’s perspective is closely related to the health care system perspective because both focus on medical costs. However, the health insurer’s perspective only includes costs for which an insurer is liable.

The medical costs and savings included in the health care system perspective are important to many policymakers. However, it is unlikely that any policymaker would consider only medical costs. An HMO, for example, would probably also consider costs important to its customers: employers and individual enrollees.

The societal perspective includes all costs and savings, regardless of who bears the costs or benefits from the service. Decisions based upon the societal perspective lead to the most efficient allocation of all resources in the economy (not just health care system resources). Thus, the societal perspective is recommended for public policy decisions and is also important for other users because it provides information about the broader context within which decisions are made. Additional costs and savings included in the societal perspective are:

- Out-of-pocket costs to individuals, such as medical insurance copayments and transportation costs to clinics;
- The value of patients’ time associated with the intervention, such as time spent traveling or receiving services and follow-up tests;
- The value of parents’ time used to obtain services for children;
- Savings associated with caregiver time (paid or unpaid) not needed because diseases or injuries were prevented; and
- Savings that occur outside of the health care system, such as reduced property damage and crime-related expenses from alcohol-related incidents prevented.

From the societal perspective, physician counseling about the need for regular physical activity may not be among the most cost-effective preventive services. This is due, in large part, to the out-of-pocket and time costs individuals incur to engage in physical activity. However, from the health care system perspective, this type of physician counseling is likely to cost less than $10,000/QALY saved. Counseling itself is inexpensive and the potential reduction in medical costs is very high, even though hundreds of patients must receive counseling in order for a few to change their behaviors.

When quality-adjusted life years are used, the additional inclusion of productivity losses is controversial (some believe they are already accounted for by the QALY measure). Thus, most new cost-effectiveness analyses that use quality-adjusted life years do not account for the value of time lost due to disease or injury that could have been prevented, or do so only in alternative estimates.

3. What Is Discounting and Is It Important?

Would you rather have $100 today or in 10 years? If you answered today, then you understand why economists discount costs and benefits in cost-effectiveness analyses.
Discounting enables policymakers to compare on equal footing the cost effectiveness of policies that would yield benefits over short- and long-term horizons.

The cost of some health policies, such as a tobacco cessation program, are incurred upfront, while benefits accrue over many years. Because society tends to value present gains – in health or dollars – more highly than the promise of future gains, analysts discount health improvements and costs occurring in future years to their present value.

For example, if, on average, individuals would consider $0.50 received today to be equivalent to $1 received in 10 years (even after adjusting for inflation), an analyst would use $0.50 for every dollar of costs or savings expected to occur in 10 years.

In practice, discounting is calculated on a percentage basis in a manner similar to compound interest rate calculations. Most health economists agree that a 3% discount rate should be used to permit comparisons across different studies. However, older studies and secondary analyses in more recent studies often use other rates (ranging from 2.5% to 10%).

Sometimes the discount rate is an important variable determining the cost-effectiveness ratio; other times it is not. Small changes to the discount rate, such as from 3% to 5%, may have a large effect on the cost effectiveness of policies in which the health improvements and/or cost savings occur many years after the service is provided.

4. What Is the Time Horizon of the Analysis?

The time horizon is the period over which events – and the consequences of events – are accounted for in the analysis. A widely accepted standard in cost-effectiveness analysis is to include the health and cost consequences of a policy for every year in which the outcomes are significant enough to affect the results. As a general rule, discounting reduces the impact on the cost-effectiveness ratio of outcomes that occur more than 30 years in the future to insignificant quantities relative to outcomes occurring in earlier years.

Although rare, some cost-effectiveness analyses may use horizons as short as three years due to lack of data or the perceived insignificance to the policymaker of delayed gains. Short horizons are more common in cost analyses, especially those prepared for decisions in which short-term budget considerations are a greater concern than long-term cost and health outcomes. (See “A Different Perspective: the Congressional Budget Office” on page 2.)

5. How Recent Is the Study?

Recently developed recommendations have changed the methods and reporting of cost-effectiveness analyses, and older studies are less likely to be consistent with these recommendations. For example, experts now recommend that cost of productivity losses not be included in most studies that measure health outcomes with QALYs and that study results be reported using a 3% discount rate. (Both of these issues are summarized above.)

Caution when viewing the results of older studies is warranted because of high medical inflation, which may cause the cost-effectiveness ratio to be understated (if net cost is positive) relative to more recent studies. Although methods to adjust analyses for inflation can be used, the accuracy of these adjustments declines with increasing years of adjustment.

Also, technological advances may mean older analyses based on prior standards of care are no longer relevant (because technology costs, effectiveness, and any associated savings often vary).

Publication dates are generally reliable indicators of potential distortions associated with the passage of time.

Calculating Cost Effectiveness: Average vs. Incremental

This section illustrates average and incremental cost-effectiveness results and their calculation.

An analysis of biannual mammography screening to detect breast cancer estimated the incremental cost effectiveness of screening women age 40-49 years compared to screening women age 50 to 69 years.
These authors estimated that with no mammography screening, 10,000 women age 40 years can expect to collectively live 241,950 years and that treating breast cancers would cost a total of $27 million.

For the same 10,000 women age 40 years, the estimated cost of mammography screening from age 50 to 69 years plus the lifetime cost of treating breast cancer is $34 million. This estimate is an increase in net cost of $7 million compared to no screening. This increase is due to screening and other prevention costs of $8 million that is offset by a $1 million cost-of-illness saving from treating cancers at an early stage (these numbers are not shown in the table). This group can expect to live 242,279 years, which includes 329 life years saved by screening.

Thus, compared to no screening, the incremental cost effectiveness of screening from age 50 to 69 years is:

\[
\text{Cost effectiveness of screening 50-69 years v. no screening} = \frac{\$7\text{ million (net cost)}}{329\text{ life years saved (health improvement)}} = \frac{\$21,400}{\text{life year saved}}
\]

By definition, average cost effectiveness is calculated as a comparison to doing nothing. Thus, the average cost effectiveness of screening from age 50 to 69 years is identical to the incremental cost effectiveness in this example.

Starting screening 10 years earlier (at age 40) would have a net cost of $6.8 million (additional prevention costs less additional savings from early treatment) and would save an additional 64 years of life.

\[
\text{Incremental cost effectiveness of screening 40-69 years v. screening 50-69 years} = \frac{\$6.8\text{ million (net cost)}}{64\text{ life years saved (health improvement)}} = \frac{\$105,600}{\text{life year saved}}
\]

Because the comparison is to no screening, average cost effectiveness for mammography screening from age 40 to 69 years (below) is very different from the results of the incremental analysis above.

\[
\text{Average cost effectiveness of screening 40-69 years v. no screening} = \frac{\$13.8\text{ million (net cost)}}{393\text{ life years saved (health improvement)}} = \frac{\$35,100}{\text{life year saved}}
\]

**Bottom line?** The incremental cost effectiveness of screening starting from age 40 rather than age 50 is greater than $100,000/life year saved. If the authors had only calculated average cost-effectiveness ratios, they would have reported that screening women age 50 to 69 years would cost $21,400/life year saved, and screening women age 40 to 69 years would cost $35,100/life year saved. Although this is technically correct, using average cost effectiveness obscures the fact that adding a screening program for women age 40 to 49 years to a screening program for women age 50 to 69 years is considerably less cost effective than a screening program for women age 50 to 69 years.

Keep in mind that this study estimated the cost effectiveness of screening all women starting at age 40 years. Screening women at high risk for breast cancer starting at age 40 would provide a greater health improvement (per person screened) and be more cost effective than screening all women.
Helpful Websites

Agency for Healthcare Research and Quality: http://www.ahrq.gov/. This federal website offers research-based information on health care outcomes, quality, cost, use, and access.


Congressional Budget Office: http://www.cbo.gov/. The office posts its analyses of health-related legislation on its website. Also available are documents describing CBO’s mandate and budget analysis process.

Guide to Clinical Preventive Services: http://www.ahrq.gov/clinic/uspstfix.htm. This publication summarizes the deliberations and recommendations of the U.S. Preventive Services Task Force. This independent expert panel systematically reviews the evidence of effectiveness and develops recommendations for clinical preventive services.

Guide to Community Preventive Services: http://www.thecommunityguide.org. Based on a comprehensive review of the evidence, the Task Force on Community Preventive Services makes recommendations on the most effective and cost-effective strategies, policies, and programs for improving the health of communities. The task force is an independent panel of experts convened by the U.S. Department of Health and Human Services.

An Ounce of Prevention: http://www.cke.org/mmwr/PDF/other/ozprev.pdf. This publication provides the results of a standardized evaluation of the cost-effectiveness of 19 prevention interventions ranging from bicycle helmets, to cancer screening, to nutrition supplements.

THOMAS: http://thomas.loc.gov/. This is the official U.S. Congressional website for legislative information.

Acknowledgements

Partnership for Prevention would like to thank Michael V. Maciosek, PhD, HealthPartners Research Foundation, for working with us to write and edit this publication. Richard Rheingans, PhD, Rollins School of Public Health, Emory University, also provided expert contributions.

An advisory committee that included Drs. Maciosek and Rheingans provided additional guidance: Marc Berger, MD, Merck & Co., Inc.; Jonathan E. Fielding, MD, MPH, MBA, UCLA School of Public Health; Marthe R. Gold, MD, MPH, City University of New York Medical School; Anne C. Haddix, PhD, Rollins School of Public Health at Emory University; and Steven M. Teutsch, MD, MPH, Merck & Co., Inc.

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This publication was supported by Cooperative Agreement No. U38/CCU317907 from the Centers for Disease Control and Prevention (CDC). Its contents are solely the responsibility of Partnership for Prevention and the authors and do not necessarily represent the views of CDC.

Endnotes


Other Reference
