Designing a High-Quality Package of Preventive Services

A Prevention Policy Paper Commissioned by
Partnership for Prevention

Douglas B. Kamerow, MD, MPH
Chief Scientist, RTI International
Professor of Clinical Family Medicine
Georgetown University

December 2008

Executive Summary

Clinical preventive services include four types of services: immunizations; screening tests for the early detection of disease; counseling for health-related behavior change; and chemoprevention, to prevent disease with drugs. Not all diseases can be prevented, however, and not all preventive services help patients. Although there is a popular opinion that *all* preventive care must be helpful, careful analysis has shown that some preventive services lead to increased false positives, increased costs, and no net improvement in health.

But literally millions of years of life could be gained by Americans if we used effective preventive services. Although there is great potential for decreasing the morbidity and mortality associated with diseases through the use of proven clinical preventive services, coverage of these services by health plans, insurance programs, and government agencies varies widely. An important question is which screening tests, immunizations, counseling, and chemoprevention services should be covered to optimize the health of Americans in the most cost-effective way.

Fortunately, several national authorities have carefully reviewed the evidence on preventive care and regularly make recommendations on which clinical preventive services are effective at preventing diseases and/or decreasing the morbidity and mortality associated with them. These groups include the U.S. Preventive Services Task Force, the Advisory Committee on Immunization Practices, and the National Committee on Prevention Priorities.

Several principles should guide the creation of a high-quality package of preventive services. All types of clinical preventive services should be included in the package—screening tests, immunizations, counseling, and chemoprevention. All services should be supported by evidence of their effectiveness and cost-effectiveness. And a relatively small set of services should serve as the basis of coverage, with some flexibility in the content and method of delivery. The recommended basic set of clinical preventive services is listed in Table 3.

Just creating an appropriate package of services, however, is not sufficient to ensure their appropriate and widespread delivery. Equal attention must be given to the provision of incentives for the delivery and receipt of the priority services. These incentives include financial incentives for patients, through lowered or eliminated copayments and deductibles, to encourage them to get preventive care. Clinicians and health care systems also need incentives to deliver high-quality preventive care to the right patients at the right time. Such incentives may be most appropriate for particularly cost-effective and/or under-delivered preventive services.

In addition, non-financial steps need to be taken to increase the uptake of preventive care, such as using standing orders and reminder systems to prompt clinicians to provide the services. Other measures to increase preventive care include the provision of selected preventive services in the community and workplace, both to inform patients about the importance of preventive services and to increase their delivery.

Note: The views expressed in this paper are those of the author. They do not necessarily represent the views of Partnership for Prevention.

Introduction: Stating the Problem and the Potential

Clinical preventive services include four types of services: immunizations; screening tests for the early detection of disease; counseling for health-related behavior change; and chemoprevention, a way to prevent disease with drugs. The goal of preventive care is either to prevent diseases entirely or, through early detection and intervention, to decrease the morbidity and mortality that diseases cause, at an acceptable cost. Not all diseases can be prevented. Although there is a popular opinion that all preventive care must be helpful, careful analysis has shown that some preventive services do not work very well.[1]

The variable effectiveness of preventive services raises the question of which clinical preventive services should be "covered" by private insurance policies, health plans, and government programs. In recent years, coverage of clinical preventive services has increased, but policies vary in the extent and details of their coverage. This paper will discuss three major issues about the coverage of clinical preventive services.

First we will discuss why policymakers should be concerned with decisions about the coverage of preventive care. By "policymakers," we mean elected and appointed government officials, employers, benefit managers, and others who have responsibility for designing and approving health care coverage policies. Why should they care which preventive services are covered by medical plans and how a "package" of preventive services is constructed?

This is followed by a discussion of the issues involved in assembling an optimal package of clinical preventive services. What are the options that are available and desirable in designing such packages?

The paper concludes with a brief discussion of ways to increase both the uptake of clinical preventive services by patients and interest in delivering these services by clinicians and health care organizations. The best preventive medicine package in the world is useless if no one receives the tests and services that are recommended.

Discussion

Why is Preventive Services Coverage Important to Policymakers?

The leading causes of death in America, based on death certificate data, are compiled annually by the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics. The statistics do not change very much year by year, and the top five causes are usually heart disease, cancer, stroke, lower respiratory diseases, and "accidents," or unintentional injuries (Table 1). All told, there are about 2.4 million deaths every year in the U.S., and the top ten causes account for about 1.8 million of these deaths.[2]

Table 1
Leading Causes of Death in the U.S.: 2006

Condition	Number of Deaths
Heart disease	629,192
Cancer	560,102
Stroke (cerebrovascular diseases)	137,265
Chronic lower respiratory diseases	124,614
Accidents (unintentional injuries)	117,748
Alzheimer's disease	72,914
Diabetes	72,507
Influenza/Pneumonia	56,247
Nephritis, nephrotic syndrome, and nephrosis	44,791
Septicemia	34,031

Source: Heron MP, Hoyert DL, Xu J, Scott C, Tejada-Vera B. Deaths: preliminary data for 2006. National vital statistics reports; vol 56 no 16. Hyattsville, MD: National Center for Health Statistics. 2008.

Although it is clear that prevention and preventive services could play an important role in preventing death from these leading causes, a landmark study conducted by Michael McGinnis and William Foege about 15 years ago made the point even more clearly.[3] They looked at the *risk factors* behind the leading causes of death and attributed the deaths that resulted to these underlying factors. For example, instead of counting deaths caused by heart disease, they counted the number of heart disease deaths caused by smoking and added those to the number of deaths from other diseases caused by tobacco. Their results, later updated by the CDC,[4] were called the "actual causes of death" and are shown in Table 2.

What is immediately obvious from looking at this list is that the actual leading causes of death—tobacco use, poor diet, and physical inactivity—are not only preventable but are also intimately tied to behavior. When combined with the "traditional" leading causes of death, such as heart disease and cancer, they make a compelling case for the potential of preventive care to decrease death and disability in the U.S.

Table 2

Estimated "Actual" Causes of Death, 2000

Cause of Death	Number Attributed to Cause
Tobacco	435,000
Poor diet and physical inactivity	365,000*
Alcohol consumption	85,000
Microbial agents	75,000
Toxic agents	55,000
Motor vehicle	43,000
Firearms	29,000
Sexual behavior	20,000
Illicit drug use	17,000

*It is particularly difficult to estimate excess deaths associated with obesity and underweight. Other estimates of the number of such deaths are lower; see, for example, Flegal KM, Braubard BI, Williamson DF, and Gail MH. Excess deaths associated with underweight, overweight, and obesity. *JAMA* 2005; 293:1861-1867.

Source: Mokdad AH, Marks JS, Stroup DF, et al. Actual causes of death in the United States, 2000. *JAMA* 2004; 291(10):1238-1245. Correction published in *JAMA* 2005; 293:298.

That potential can only be realized, however, if there are effective interventions that have been proven to help prevent the diseases and conditions listed. And that is where clinical preventive services come in. Preventive services include immunizations, screening tests, counseling, and chemoprevention. The good news here is that the scientific base for evaluating clinical preventive services has advanced remarkably. Because of ongoing assessments over the last 20 years by the U.S. Preventive Services Task Force, an expert panel that makes scientific, evidence-based recommendations on preventive care, we have a reasonably clear picture of which preventive services work and which do not.[1] Table 3 lists clinical preventive services that are recommended for adults by the U.S. Preventive Services Task Force and adult immunizations recommended by the Advisory Committee on Immunization Practices, a group that makes evidence-based recommendations about immunizations.

Table 3
Clinical Preventive Services Recommended for Nonpregnant Adults by the U.S. Preventive Services Task Force* and the Advisory Committee on Immunization Practices*

Immunizations Against
Tetanus, diphtheria, pertussis
Human papillomavirus
Measles, mumps, rubella
Varicella
Influenza
Pneumococcal disease
Hepatitis A, B
Meningicoccal disease
Herpes zoster

Screening Tests for
Abdominal aortic aneurysm
Alcohol misuse
Breast cancer
Cervical cancer
Chlamydial infection
Colorectal cancer
Depression
Diabetes Type 2
Gonorrheal infection
High blood pressure
HIV infection
Lipid disorders
Obesity
Osteoporosis
Syphilis infection

Counseling about
Aspirin chemoprevention
Breast cancer chemoprevention
Breast and ovarian cancer genetic susceptibility
Diet
Tobacco use cessation

*In specified populations and at specified intervals

Source: "A" and "B" ratings from the USPSTF and recommended adult immunizations from the ACIP. US Preventive Services Task Force, *Guide to clinical preventive services 2008*. Rockville, MD: US Department of Health and Human Services (AHRQ Pub. No. 08-05122), September 2008.

The degree that health could be improved health as a result of optimally delivered preventive medicine was carefully documented in a recent comprehensive analysis of the effects of delivery of a group of proven preventive services in the U.S.[5] This study, guided by the National Commission on Prevention Priorities (NCPP), calculated the years of healthy life that could be gained in the U.S. by increasing the delivery of preventive care from its current rate to 90%. The results, expressed in life years gained adjusted for quality of life, are compelling. As Table 4 shows, optimizing the delivery of just 11 clinical preventive services in adults would result in the addition of more than *2.5 million* years of life for Americans.

Table 4
Estimated Quality-Adjusted Life Years (QALYs) Saved in the U.S. by Increasing Current Preventive Services Delivery Rates to 90%*

Intervention	**QALYs Saved**
Tobacco-use screening and brief intervention	1,300,000
Aspirin chemoprophylaxis	590,000
Colorectal cancer screening	310,000
Influenza vaccine among adults age 50-64 years	110,000
Breast cancer screening	91,000
Problem drinking screening and brief counseling	71,000
Vision screening-adults	31,000
Cervical cancer screening	29,000
Chlamydia screening	19,000
Pneumococcal vaccine-adults	16,000
Cholesterol screening	12,000
Estimated total	**2,579,000 quality-adjusted life years saved**

*Additional lifetime QALYs estimated to be saved if 90% of a cohort of 4 million were offered the service as recommended

Source: Maciosek MV, Coffield AB, Edwards NM, et al. Priorities among effective clinical preventive services: results of a systematic review and analysis. *Am J Prev Med* 2006; 31:52-61.

But knowing which services are effective and what their potential benefit might be are only the first steps. Many factors affect whether preventive care is used appropriately. Among these is whether patients have insurance. Multiple studies have shown that lack of health insurance is associated with less use of preventive care, especially screening tests.[6-9] This is an important barrier in a country where more than 45 million people are without health insurance for all or part of the year.

Another problem is that few Americans have health insurance that covers all recommended preventive services. While most *treatment* services are covered by health insurance policies, coverage for *preventive* care is less consistent. To cite an example, all health insurance policies cover treatment for the diseases caused by tobacco use, such as heart disease, chronic obstructive lung disease, and lung cancer. But not all insurance policies cover counseling and drugs to help patients stop smoking to prevent these diseases. Similarly, treatments for all kinds of cancers are covered by insurance, but screening tests for the early detection of cancer are not always covered by these same policies. This is important because research also has shown that people who have health insurance but poor coverage for prevention use fewer preventive services than those whose health insurance covers preventive care. This is true for coverage of smoking cessation services[10] as well as for screening tests.[11]

Underuse of preventive services occurs when there is too little coverage for preventive care, resulting in important consequences, such as missed diagnoses and decreased opportunity to intervene early in the disease process. But overuse of nonrecommended tests during periodic checkups also can lead to problems. Inappropriate testing can lead to false-positive results, further testing, and side effects.[12] Studies have shown that excess tests such as urinalyses, X-rays, and electrocardiograms lead to wasted money and decreased quality of care.[13]

In sum, all of the above argues for the need for policymakers to focus on the coverage of clinical preventive services as a critically important component of health care coverage design.

Issues and Options in Assembling a Package of Clinical Preventive Services

Background Issues

Given that a package of clinical preventive services is an important component of any health insurance policy or health plan, how should decisions be made about the preventive services that are covered? A number of issues make the answer to this simple question less than straightforward.

First, assessing the evidence of the effectiveness of services is complex, and a huge effort must be expended to evaluate the evidence comprehensively. Systematically reviewing the literature for and against a given screening test or counseling intervention is a major task that requires significant effort and resources. The standard for performing systematic reviews set by groups such as the U.S. Preventive Services Task Force, the Cochrane Collaboration, and others, is a high one. Many groups, however, do not use such rigorous standards and rely instead on expert opinion for their recommendations.

Second, while the evidence does not change very much over time for some services, for others it is constantly changing. New research studies emerge that evaluate current or new interventions, both in previously studied or new populations. This means that many recommendations must be revisited and re-reviewed on a regular basis. Essentially, the work never stops.

Third, the details of coverage may vary and may not be well supported by evidence. For example, which of the many screening tests available for colorectal cancer should be covered? How often should counseling and medication be covered for smoking cessation? Which type(s) of screening modalities are most appropriate for cervical cancer screening? These and many other questions need to be addressed when coverage decisions are made.

Fourth, the issue of costs and cost-effectiveness of services may or may not be considered. Groups such as the U.S. Preventive Services Task Force originally excluded costs from consideration, stating that their recommendations were based only on the proven effectiveness of the services. Subsequently, however, they outlined a policy where costs and cost-effectiveness considerations can enter into their deliberations.[14]

Fifth, different organizations will have differing values that they bring to decision making. The level of evidence that is required to include a service will vary depending on these values. Thus, many advocacy organizations for specific diseases or populations have a lower threshold for recommending a given service or set of services. Others will require a higher level of evidence before they endorse any preventive intervention. So, for example, a cancer advocacy group may be more inclusive in the cancer screening tests it recommends. Or a group that focuses on older patients may include services based on expert opinion instead of scientific evidence to maximize the number of services (and, presumably, benefits) for that population.

Sixth, coverage is not an all or nothing concept. Positive and negative cost incentives have been shown to be a powerful factor in influencing the uptake of clinical preventive services, as they are in treatment services. Cost-sharing has a negative effect on the utilization of preventive care, [15] and economic incentives lead to increased use of these services.[16]

Current Coverage

Given all of these issues, it is no surprise that coverage of clinical preventive services varies across the U.S. A recent national survey of employers' coverage of preventive care [17] found that more than half the employers covered physical examinations, most screening tests, and immunizations, with the highest rates for childhood immunizations and breast and cervical cancer screening tests. But some important, high-value services, such as tobacco cessation counseling and screening and assessment of problem alcohol use, were covered by 20% or fewer of the employers responding. A typical benefit plan from employers, such as CIGNA's HealthCare Open Access Plus plan,[18] might include coverage of immunizations and screening tests such as mammograms, Pap tests, colonoscopies, and prostate-specific antigen tests for the early detection of breast, cervical, colorectal, and prostate cancer, respectively. These services often are offered at little or no charge, and/or with a decreased deductible or copayments. But the plans usually do not cover counseling services, and they may not cover services recommended for certain populations only, such as screening for abdominal aortic aneurysm in men age 60 and older who smoke cigarettes.

For many years coverage provided by the Federal government for preventive services under Medicare lagged behind the private sector. Because Medicare's original enabling legislation specifically excluded preventive services from coverage, Congress was required to pass a law to

allow Medicare to cover screening tests, immunizations, or counseling for preventive care. Over the years, Congress slowly added these services to Medicare, bringing it up to reasonably modern standards.[19] But the biggest change in the regulations for Medicare coverage of preventive care in history has just occurred, with the passage of the Medicare Improvement for Patients and Providers act of 2008 (PL 110-275). Beginning in 2009, this law moves decision-making power to authorize coverage for additional preventive services from Congress to the Medicare program, through its usual national coverage decision process. Thus, for the first time since Medicare was created in 1965, preventive services will be treated similarly to diagnostic and treatment services with respect to Medicare coverage policies and processes, although there is still variability in deductible and copayment levels.

Guiding Principles for Preventive Services Package Design

Given what we know about both the effectiveness of and less than optimal use of clinical preventive services, what principles should guide the design of coverage of these services? The following list provides a summary of practices that have been shown to have an impact on overall health.

1. **Include the full range of clinical preventive services in the coverage package: screening tests, immunizations, counseling, and chemoprevention.** Immunizations and screening tests are generally covered more frequently in insurance policies than counseling interventions to reduce risky behaviors, yet some proven counseling interventions offer the greatest opportunities to decrease disease and extend life. What's more, they are very cost-effective, even cost-saving on occasion.[5] Chemoprevention is also frequently ignored as a preventive service and should be included as part of every preventive services package. Proven pharmaceutical agents range from nicotine replacement preparations to aspirin. They should be part of the coverage package as an incentive to increase their use.

2. **Use evidence-based evaluations to inform service selection.** The leaders in evidence-based evaluations of preventive services in the U.S. are the U.S. Preventive Services Task Force[1] for screening tests, counseling, and chemoprevention, and the Advisory Committee on Immunization Practices (ACIP)[20] for immunizations. Although their selection and evaluation criteria differ somewhat, both sets of criteria are objective and rigorous, and both groups are established and respected authorities in their respective domains. In addition, they constantly revisit prior recommendations in light of new evidence and update their recommendations regularly.

3. **Incorporate cost-effectiveness assessments whenever possible**. Cost-effectiveness does not necessarily mean cost-saving, but cost-effectiveness analyses, when properly done, give an assessment of how much gain in "health" that preventive services will deliver for a unit of cost. These analyses can determine which services are likely to have the greatest return on investment and thus should be strongly encouraged, with reduced barriers to delivery and use. The U.S. Preventive Services Task Force now includes cost-effectiveness assessments when making its recommendations, and the National Committee on Prevention Priorities has calculated cost-effectiveness ratios for preventive

services as well.[21] Further, in the simplest sense, one cannot do a cost-effectiveness analysis unless there is evidence that the service is clinically effective at some level, so the fact that credible cost-effectiveness analyses have been done is a reassuring finding.

4. **Begin with a basic set of preventive services.** Every preventive service package should include the services that have been shown unequivocally to be effective. These could include services with an "A" or "B" rating by the U.S. Preventive Services Task Force and the basic recommendations of the ACIP. The services recommended for adults that meet these criteria are listed in Table 3.

5. **Update the package of services regularly**. Because the evidence for the effectiveness of preventive services changes frequently, it is important that the package not be a static list; rather, it should be reviewed and revised periodically.

6. **Allow flexibility in the content of preventive services benefit packages, depending on local conditions and capabilities.** Extending the coverage package to include services beyond the basic set may be appropriate as local conditions warrant. For instance, resources for preventive care may be limited, and just the basic set may be all that is possible to include. As more resources become available, other services can be added. The rankings by the National Committee on Prevention Priorities [5] include indications of services that may be especially high value because of their current poor delivery rates.

7. **Allow for flexibility in method of delivery, depending on local conditions.** Sometimes clinical preventive services are delivered most efficiently in non-clinical settings. Therefore, their development and use in such settings should be encouraged. With this thinking in mind, employers may want to supplement what is in their coverage package and conduct smoking cessation clinics for their employees; contract with a telephone counseling ("quit line") service; and/or purchase over-the-counter smoking cessation medications in bulk and distribute them directly to beneficiaries. Similarly, worksite or community influenza/pneumococcal vaccine clinics can complement adult immunization benefits by making it easier for people to obtain the immunizations.

8. **Provide incentives for the delivery and receipt of especially cost-effective and under-delivered clinical preventive services.** Much research shows that financial incentives—including manipulation of copayments, deductibles, and visit fees—can have a strong effect on the uptake of preventive services.[15, 22-24] Cost sharing and use of preventive services of all kinds are inversely correlated—when one goes up, the other decreases. Eliminating all financial barriers to a small set of particularly cost-effective and/or under-delivered services would likely lead to great returns in health. A sample list of such "high-value" preventive services is given in Table 5.

Table 5
A Sample "High-Value" Package of Adult Preventive Services
(*Based on the recommendations of the USPSTF, ACIP, and the rankings of the National Committee on Prevention Priorities [NCPP])*

Immunizations Against
Influenza
Pneumococcal disease

Screening Tests for Early Detection and Treatment of
Breast cancer
Colorectal cancer
Cervical cancer
Chlamydial disease
High blood pressure
Lipid disorders
Alcohol misuse
Obesity

Counseling about
Aspirin chemoprevention
Tobacco use cessation

Criteria:
1. Recommended by the USPSTF with an "A" or "B" rating or by ACIP
2. Ranking of 5 or higher by the NCPP

Strategies for Increasing the Uptake of Clinical Preventive Services

Benefit design alone is not sufficient to ensure appropriate receipt of clinical preventive services. Just because services are "covered" does not mean that they will be used. Specific interventions with patients, clinicians, payers/employers, and in the community have been shown to improve the uptake of clinical preventive services. These strategies are listed below.

Education and Incentives for Patients

Cost-sharing, in the form of copayments, deductibles, and/or visit fees, will decrease patients' use of clinical preventive services, whether in health plans,[15] Medicare,[22] a large company,[23] or for prescription drugs.[24] By decreasing these payments, patients will have increased incentive to use preventive services. Direct cash and other incentives also increase the use of preventive services and preventive behaviors, although the more complex the behavior, the less likely that incentives alone will work.[16]

A systematic review of interventions to increase the use of preventive services in Medicare beneficiaries by one of the Evidence-based Practice Centers of the Agency for Healthcare Research and Quality found that some patient interventions, in addition to financial incentives, were effective in increasing delivery of immunizations, mammograms, Pap smears, and fecal occult blood tests.[25] Effective interventions included changes in the organization of preventive care delivery—such as standing orders for specific services when appropriate—and reminder systems for patients about preventive care. Simple patient education was less effective but did have measurable effects.

Similar results were found by the Task Force on Community Preventive Services when it evaluated interventions to increase the use of immunizations.[26] Standing orders are particularly effective for increasing vaccination rates. Multicomponent interventions, such as combining standing orders with other patient and clinician interventions, also increased immunization rates. Patient education alone is not very effective.

Education and Incentives for Clinicians

The systematic reviews[25, 26] discussed above also evaluated clinician and organizational interventions. Again, education programs by themselves seemed to be less effective. Standing orders, reminder/recall systems for clinicians and patients, assessment and feedback, and financial incentives for clinicians were more effective.

Another systematic review of randomized trials of financial incentives to improve physician preventive care delivery found mixed results,[27] as did a systematic review of recent "pay-for-performance" systems, many of which focused on improving preventive services delivery.[28] These findings showed that unless physician financial incentives are large, they are unlikely to increase the delivery of preventive services significantly.

Payer/Employer Incentives and Mandates

Health care costs affect employers' profitability, and organizations such as the National Committee on Prevention Priorities have made compelling arguments that investments in coverage of preventive services can decrease health care costs and lead to a healthier, more productive work force.[29] Partnership for Prevention's publication on this topic includes case histories of companies that improved the health of their workers and lowered or maintained their costs with a combination of onsite health promotion and increased coverage of clinical preventive services.

Similarly, the National Business Group on Health, a nonprofit organization representing the large employers' perspective on national health policy issues, has long championed clinical preventive services as a wise investment for companies to make. They have published a guide to clinical preventive services benefit design, detailing the evidence behind specific services and benefit language that employers can use to cover them.[30]

Many state mandates were passed in the 1990s requiring coverage for certain preventive services, chiefly cancer screening and immunizations.[31, 32] They were responsible for increases in coverage, which led to increased receipt of these services as well. [33]

Community Preventive Services

Although beyond the scope of this paper, preventive services delivered in the community setting clearly can improve preventive care, either by supplementing or replacing services delivered in the clinical setting or by providing incentives for patients to receive clinical preventive services. The CDC sponsors the Task Force on Community Preventive Services, which systematically reviews community preventive interventions and publishes the *Guide to Community Preventive Services* in print and online.[34]

The National Business Group on Health has emphasized the importance of community-level interventions for their ability to educate people about preventive services, encourage people to obtain these services, and encourage clinicians and health plans to offer preventive care.[30] The Business Group also endorses the *Guide to Community Preventive Services* as an important resource and provides a list of *Community Guide* recommendations that complement clinical preventive services.

Concluding Thoughts

Clinical preventive services—screening tests, immunizations, counseling, and chemoprevention—are a very important component of health care. If fully implemented, they have the potential to save millions of lives, many at a very reasonable cost. However, most U.S. insurance policies and health plans do not cover and provide clinical preventive services to get the optimal benefit from these services.

Assembling a package of basic clinical preventive services requires evaluating these services in an evidence-based manner and taking into consideration other issues, such as cost-effectiveness and differing environments for care.

Guiding principles for the design of a package of clinical preventive services include choosing those with clear evidence of effectiveness while allowing for flexibility for expansion if desired. It is also important to provide incentives for their use; simple coverage is not enough to ensure that the potential benefits of preventive medicine are fully achieved.

This leads to a major recommendation to apply what Michael Chernew and others have called "value-based insurance design" to preventive medicine, in which all services do *not* cost the same for all patients.[35] Thus, particularly high-valued clinical preventive services would have no cost for patients for whom they were appropriate. Other recommended preventive care would have no or low copayments and not be subject to annual deductibles. These policies would apply to *all* types of preventive services: immunizations; tests such as mammography or Pap smears; office visits for counseling for tobacco cessation and other behavior changes; and drugs, either prescribed or over the counter, for chemoprevention.

Further policy options for consideration follow in the next section.

Policy Options for Consideration

Keeping in mind the background and guiding principles provided earlier in this paper, construction of a high-quality, affordable package of clinical preventive services should not be too difficult. The package should include the full range of preventive services available and supported by evidence. A basic set of services for adults, which are widely acknowledged to be appropriate and have been shown to be cost-effective, can be constructed from positive recommendations of the U.S. Preventive Services Task Force[1] and the Advisory Committee on Immunization Practices. [20]. See Table 3 for an example of the contents of such a package.

Just as important as the selection of services to include in such a package is the ability to modify the recommended services based on new evidence. Options here include tying the package content to future recommendations from the authorities cited above; creating a separate body to review new data for inclusion; or following the policies of major government programs, such as Medicare, the Department of Veterans Affairs, or the requirements of the Federal Employee Health Benefit Plans, assuming that these plans are updated frequently.

In addition to constructing and updating the contents of the package, it is necessary to do what is possible to ensure that the services are used. This can be accomplished by providing financial and organizational incentives for the optimal delivery of preventive care, both to patients and to clinicians and systems. Dramatically increasing the uptake of high-value but underused preventive services would have important health and cost consequences.[29] Value-based purchasing should be used to eliminate financial barriers for especially valued services, reduce copayments and deductibles for recommended services, and increase financial barriers for those that are not backed by evidence of effectiveness, such as prostate-specific antigen testing in men age 65 and older.

The final component of design of a high-quality package of clinical preventive services is to put into place evaluation capabilities to measure what happens once the system takes effect, allowing for mid-course corrections if necessary.

References

(1) U.S. Preventive Services Task Force. *Guide to clinical preventive services 2007*. Rockville, MD: US Department of Health and Human Services (AHRQ Pub. No. 07-05100), September 2007.

(2) Heron MP, Hoyert DL, Xu J, Scott C, Tejada-Vera B. Deaths: preliminary data for 2006. National vital statistics reports; vol 56 no 16. Hyattsville, MD: National Center for Health Statistics. 2008.

(3) McGinnis JM, Foege WH. Actual causes of death in the United States. *JAMA* 1993; 270:2207-2212.

(4) Mokdad AH, Marks JS, Stroup DF, et al. Actual causes of death in the United States, 2000. *JAMA* 2004; 291(10):1238-1245. Correction published in *JAMA* 2005; 293:298.

(5) Maciosek MV, Coffield AB, Edwards NM, et al. Priorities among effective clinical preventive services: results of a systematic review and analysis. *Am J Prev Med* 2006; 31:52-61.

(6) Woolhandler S and Himmelstein DU. Reverse targeting of preventive care due to lack of health insurance. *JAMA*1988; 259.

(7) Sudano JJ and Baker DW. Intermittent lack of health insurance coverage and use of preventive services. *Am J Pub Health* 2003; 93:130-137.

(8) DeVoe JE, Fryer GE, Phillips R, and Green L. Receipt of preventive care among adults: insurance status and usual source of care. *Am J Pub Health* 2003; 93:786-791.

(9) Powell-Griner E, Bolen J, and Bland S. Health care coverage and use of preventive services among the near elderly in the United States. *Am J Pub Health* 1999; 89:882-886.

(10) Curry SJ, Grothaus LC, McAfee T, and Pabiniak C. Use and cost effectiveness of smoking-cessation services under four insurance plans in a health maintenance organization. *N Engl J Med* 1998; 339:673-679.

(11) Faulkner LA and Schauffler HH. The effect of health insurance coverage on the appropriate use of recommended clinical preventive services. *Am J Prev Med* 1997; 13:453-458?

(12) Woolf SH and Kamerow DB. Testing for uncommon conditions: the heroic search for positive test results. *Arch Int Med* 1990; 150:2451–2458.

(13) Merenstein D, Daumit GL, and Powe NR. Use and costs of nonrecommended tests during routine preventive health exams. *Am J Prev Med* 2006; 30:521-527.

(14) Saha S, Hoerger TJ, Pignone PM, et al. The art and science of incorporating cost effectiveness into evidence-based recommendations for clinical preventive services. *Am J Prev Med* 2001; 20(3S):36-43.

(15) Solanki G and Schauffler HH. Cost-sharing and the utilization of clinical preventive services. *Am J Prev Med* 1999; 17:127-132.

(16) Kane RL, Johnson PE, Town RJ, and Butler M. A structured review of the effect of economic incentives on consumers' preventive behavior. *Am J Prev Med* 2004; 27:327- 352.

(17) Bondi MA, Harris JR, Atkins D, et al. Employer coverage of clinical preventive services in the United States. *Am J Health Promotion* 2006; 20:214-222.

(18) Summary of benefits, 2008, CIGNA HealthCare Open Access Plus plan for RTI International. Privately published.

(19) Omenn GS, Kamerow DB, Fielding JE, and Long PV. A Better Medicare for Healthier Seniors: Recommendations to Modernize Medicare's Prevention Policies." 2003: Washington, DC: Partnership for Prevention. http://www.prevent.org/images/stories/Files/publications/medicare.pdf. Accessed October 1, 2008.

(20) Centers for Disease Control and Prevention. Recommendations of the Advisory Committee on Immunization Practices. http://www.cdc.gov/vaccines/recs/ACIP/default.htm. Accessed October 1, 2008.

(21) National Committee on Prevention Priorities. Rankings of preventive services for the U.S. population. http://www.prevent.org/content/view/43/71/. Accessed October 1, 2008.

(22) Trivedi AN, Rakowski W, and Ayanian JZ. Effect of cost sharing on screening mammography in Medicare health plans. *N Engl J Med* 2008; 358:375-383.

(23) Busch SH, Barry CL, Vegso SJ, et al. Effects of a cost-sharing exemption on use of preventive services at one large employer. *Health Affairs* 2006; 25:1529-1536.

(24) Goldman DP, Joyce GF, and Zheng Y. Prescription drug cost sharing: associations with mediation and medical utilization and spending and health. *JAMA* 2007; 298:61- 69.

(25) Rubenstein L, Shekelle P, Stone E, et al. *Interventions that Increase the Utilization of Medicare-Funded Preventive Services for Persons Age 65 and Older*. Santa Monica, CA: RAND Corporation. 2002. http://www.rand.org/pubs/reprints/2007/RAND_RP1229.part1.pdf. Accessed October 1, 2008.

(26) Task Force on Community Preventive Services. Recommendations regarding interventions to improve vaccination coverage in children, adolescents, and adults. *Am J Prev Med* 2000; 18(1S):92-96.

(27) Town R, Kane R, Johnson P, and Butler M. Economic incentives and physicians' delivery of preventive care: a systematic review. *Am J Prev Med* 2005; 28:234-240.

(28) Petersen LA, Woodard LD, Urech T, et al. Does pay-for-performance improve the quality of health care? *Ann Intern Med* 2006; 145:265-272.

(29) Partnership for Prevention. *Why invest? Recommendations for improving your prevention investment.* 2007. http://www.prevent.org/images/stories/PDF/whyinvest_web_small.pdf. Accessed October 1, 2008.

(30) Campbell KP, Lanza A, Dixon R, et al, eds. *A Purchaser's Guide to Clinical Preventive Services: Moving Science into Coverage*. Washington, DC: National Business Group on Health; 2006.

(31) Rathore SS, McGreevey JD, Schulman KA, and Atkins D. Mandated coverage for cancer-screening services: whose guidelines do states follow? *Am J Prev Med* 2000; 19:71-78.

(32) Edwards KM. State mandates and childhood immunization. *JAMA* 2000; 284:3171-3173.

(33) Nelson DE, Bland S, Powell-Griner E, et al. State trends in health risk factors and receipt of clinical preventive services among US adults during the 1990s. *JAMA* 2002; 287:2659-2667.

(34) Task Force on Community Preventive Services. *The Guide to Community Preventive Services: What Works to Promote Health?* New York, Oxford University Press: 2005. Also online at http://www.thecommunityguide.org. Accessed October 1, 2008.

(35) Chernew ME, Rosen AB, and Fendrick AM. Value-based insurance design. *Health Affairs* 2007; 26(2):w195-w203.