RAND CORPORATION

Flattening the Trajectory of Health Care Spending

Promote Population Health

KEY FINDINGS

- Although a majority of the premature deaths in the United States are due to behavioral and environmental factors, our country allocates only 5 cents of every health care dollar to prevention.
- Reversing the rising tide of obesity and further reducing rates of tobacco use could produce substantial long-term dividends in terms of lives saved and disabling illnesses prevented.
- Local communities and employers have an important role to play in promoting population health. At present, the tools available to help communities are better developed than those of employers.
- Health promotion begins in the family. Parents and peers are powerful influences on the health-related choices of children and youth.

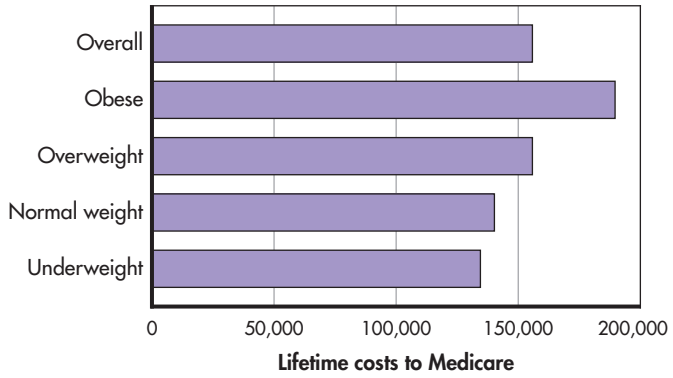
The Policy Challenge

Social and behavioral factors influence the health of Americans as surely as do the efforts of physicians, nurses, and hospitals. To slow health care spending growth, we need to do a better job of addressing the determinants of disease, rather than waiting to treat its consequences. It is estimated that 70 percent of deaths in the United States and a comparable share of health care spending are due to behavioral or environmental causes,[1, 2] but only 5 percent of our nation's annual spending on health is directed toward reducing key health risks.

The nation pays a high price for neglecting the possibilities of prevention. For example, high blood pressure dramatically increases the risks of heart disease, stroke, and kidney failure—all of which are major causes of death, disability, and spending through Medicare. Yet, according to

This series of research briefs presents insights from RAND Health research about the effectiveness of strategies to constrain growth in health care spending. A summary brief synthesizes findings from more-detailed discussions focusing on four broad categories of policy options: (1) foster efficient and accountable providers, (2) engage and empower consumers, (3) promote population health, and (4) facilitate high-value innovation.

Figure 1. Projected Lifetime Costs of Obesity to Medicare (2012 dollars)



SOURCE: Data are drawn from Exhibit 3 in Lakdawalla DN, Goldman DP, and Shang B, 2005.[9]
NOTE: Dollar figures are inflated from 2005 to 2012 using the medical Consumer Price Index.

the Centers for Disease Control and Prevention (CDC), *fewer than half* of the 68 million Americans with hypertension are currently on an adequate regimen of treatment.[3] Analyses using RAND's Future Elderly Model projected that Medicare could save up to $890 billion between 2005 and 2030 if high blood pressure were effectively controlled.[4]

This brief presents insights from RAND research about the potential value of focusing on population health, particularly the risks of obesity and smoking. It also examines opportunities to promote health at the local level and within families.

Obesity

Obesity dramatically increases an individual's risk of developing a wide variety of costly and debilitating diseases, including diabetes, heart disease, cancer, and arthritis. Obese individuals with these problems also tend to have a poorer disease prognosis than non-obese individuals. Indeed, the health consequences of obesity are even worse than those associated with smoking and problem drinking.[5]

A Growing Epidemic. Over the last decade, the rate of clinically severe obesity—a body mass index (BMI) of 40 kg/m^2 or greater—increased by 70 percent; today, more than 15 million Americans are clinically obese. But the prevalence of morbid obesity (BMI greater than 50 kg/m^2) increased even more rapidly.[6]

Obese individuals, on average, incur health care costs one-third higher than persons of normal weight, but severely obese individuals incur health care costs that are twice as high (Figure 1).[7, 8]

A recent RAND study showed if we were able to cut the current rate of obesity in the United States in half—basically, the level we were at in 1978—it would reduce the burden of such costly health problems as diabetes, hypertension, and heart disease; increase longevity and years of disability-free life; and significantly decrease Medicare and Medicaid costs.[10] Savings to the Medicare program alone were projected to reach $1.2 trillion by 2030.[11]

Responding to the Epidemic. The basic issue is straightforward: People gain weight when they consume more calories than they burn. Because social, structural, and environmental cues play a substantial role in what—and how much—we choose to eat, these cues can be used to gently "nudge" people to develop more- or less-healthful eating habits. For example, research indicates that the amount most people eat in a given day is significantly influenced by portion size and the ubiquitous accessibility of high-calorie foods.[12, 13, 14]

RAND has examined a number of promising policy options for reducing rates of obesity.[15] Studies show that parks promote exercise,[16, 17] while school playgrounds offer an underused resource for weekend exercise. Consumption of fruits and vegetables is lower in disadvantaged neighborhoods,[18] suggesting that efforts by community groups, businesses, or government to increase the availability of fresh produce and other healthy foods in disadvantaged neighborhoods may be worth pursuing. More intrusive public policies that could make a difference include imposing higher taxes on sugary soft drinks and junk food, as well as standardizing portion sizes. More extreme measures, such as neighborhood moratoriums on opening or expanding fast food restaurants, are unlikely to be effective.[19, 20, 21]

As for conventional medical options, bariatric surgery remains the only effective approach to manage severe obesity.[22] Compared with many other procedures, it is relatively cost-effective. But is it the best approach for society? In the United States, the number of bariatric surgical procedures for weight loss increased from 13,000 in 1998 to about 220,000 in 2009, according to the American Society for Bariatric Surgery.[23] But the explosive increase in the use of this procedure failed to make a dent in rates of morbid obesity, which grew at twice the rate of moderate obesity.[24] So surgery does not appear to be the answer.[25]

Considered as a whole, RAND's findings suggest that our nation's approach to controlling obesity should be rethought. Public campaigns to prevent obesity have focused on nutritional guidelines, diets, and food labels with nutritional information. These efforts assume that, armed with proper information, people will consume fewer calories. But this presumes that eating is a conscious act.

RAND's research, and the work of others, suggests that eating is influenced more by environmental factors than conscious choice.[26] If this assumption is confirmed by future studies, then instead of relying on public educational or motivational approaches to reduce food consumption, efforts should focus on altering the environmental cues that encourage overeating.

Smoking

Rates of smoking have declined dramatically since release of the Surgeon General's 1964 report, *Smoking and Health*.[27] Nevertheless, smoking remains the leading preventable cause of death in the United States.[28] Today, 22 percent of U.S. adults—roughly 66 million people—use tobacco products.[29, 30] Cigarette smoking, reported by nearly 20 percent of the adult population,[31, 32] is a leading cause of coronary heart disease, stroke, and chronic obstructive lung disease,[33] and it is responsible for nearly one-third of all cancer deaths.[34] It also costs public and private health plans roughly $96 billion per year, *excluding* costs from secondhand smoke and productivity losses.[35] Smokeless tobacco, currently used by about 4 percent of U.S. adults,[36] produces many of the same health harms as smoking. Youth who use smokeless tobacco are more likely to become smokers.[37]

The fastest way to reduce current population-based smoking rates is to help smokers quit. However, the best way to lower rates over the long term is to discourage children and youth from starting to smoke.[38] RAND researchers have studied a number of promising strategies for achieving both goals, including examining the influence of peers and coworkers on uptake of smoking[39, 40] and changing how smoking is portrayed in the media.[41]

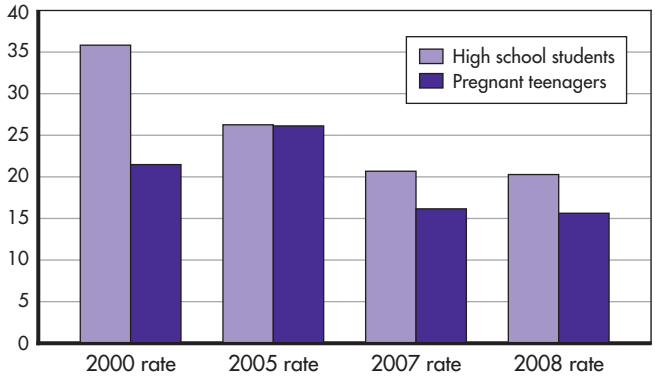
In 2001, the states played a historic role in tobacco control by banding together to successfully sue tobacco manufacturers for the harms caused by their products. The massive settlement that ended the lawsuit not only generated substantial funding for tobacco control—it also indirectly boosted the prices of tobacco products, which discouraged sales.[42] The states can continue to play a constructive role in tobacco control in three important ways: tax policy, smoke-free air laws, and ongoing support of tobacco prevention and cessation programs.[43]

The tobacco control program in Arkansas is a noteworthy example.[44] After the program was put into effect in 2001, the state's smoking rate fell more quickly than the rate in six neighboring states. Today, half as many young people in Arkansas smoke as did a decade ago. The state's declining rate of smoking appears to have produced dividends for its population. By 2008, far fewer young people in Arkansas smoked than when the program began (Figure 2).[45] A year later, in 2009, the rate of youth smoking in Arkansas was half that of a decade earlier. In 2010, statewide rates of hospitalization for heart attacks and strokes—both smoking-related conditions—were one-third lower than in 2000.[46]

Promoting Health at the Local Level

Substance use prevention programs can improve the behavioral health of communities, as well as saving four to five dollars for every dollar invested in drug abuse treatment and counseling.[48] However, local health departments and prevention practitioners face several challenges in implementing high-quality prevention programs, including the significant amount of knowledge and skills required to create effective programs, the multiple steps

Figure 2. Decreases in Smoking Prevalence Among Young People in Arkansas, 2000–2008



SOURCE: Schultz D et al., 2010.[47]

involved, and the wide variety of contexts in which prevention programs need to be implemented. These challenges have resulted in a large gap between the positive impact achieved by prevention *science* and the lack of comparable outcomes by public health practitioners at the local level.

Support for Community Substance Prevention Programs. To bridge this gap, a team of researchers at RAND and the University of South Carolina developed Getting To Outcomes™ (GTO), a science-based model and associated support tools designed to help communities plan, implement, and evaluate programs aimed at preventing or reducing a range of negative activities among youth.[49] The GTO model has successfully translated research into practice—it is prescriptive, yet flexible enough to strengthen any prevention program. Although the model was originally aimed at preventing youth drug and tobacco use, it has also been used to support community programs targeting crime, teen pregnancy, delinquency, underage drinking, intimate partner violence, and sexual violence.[50, 51]

Workplace Wellness. The public sector is not the only avenue for strengthening population health: Employers can play a role as well. A growing number of employers are implementing workplace wellness programs in an attempt to promote healthy lifestyles, prevent disease, reduce absenteeism, enhance employee productivity, and lower health care costs. Most programs combine a mix of educational (e.g., diet counseling) and motivational incentives (e.g., providing financial and nonfinancial incentives to encourage lifestyle changes).[52] In 2009, 58 percent of U.S. employers offered at least one type of wellness program.[53] Consumer participation, currently averaging a little more than 20 percent, is gradually rising.[54] These trends are likely to accelerate as employers take more-aggressive action to limit rising health care costs.[55]

However, the growth of workplace wellness programs is outpacing the underlying evidence. Research compiled since 2000 provides mixed evidence of program effects.[56] Given employers' strong interest in wellness, and the emphasis placed on worksite health promotion in the Affordable Care Act, rigorous evaluations are needed to identify, assess, and refine effective programs.

Worksite wellness efforts may increase costs in the short term before reducing them in the longer term. A RAND-led evaluation of PepsiCo's health and wellness program examined the program's return on investment for the company.[57] In its first year of operation, the program increased per member per month (PMPM) costs by $66, but in the second and third years of the program, PMPM

costs declined by $76 and $61, respectively. Over all three years, the program was associated with reduced PMPM costs of $38, a decrease of 50 emergency room visits per 1,000 member-years, and a decrease of 16 hospital admissions per 1,000 member-years.

RAND's evaluation examined a single program, so it may not generalize to other workplace settings. However, these findings suggest that companies should adopt a longer-term view when implementing a new program. RAND is currently conducting additional evaluations of workplace wellness programs and will release more findings in the months to come.

The Family's Role in Promoting Health

The goal of health promotion is to make the "healthy choice the easy choice."[58] RAND researchers have identified numerous factors that are associated with healthy decisions in childhood, adolescence, and adulthood. Two of the most important forces that parents should monitor are media influences and the reinforcement of peers.

Media Influences. The media plays a very important role in defining social norms and signaling to children and adolescents what behaviors are acceptable, or even admirable. These effects are a particular concern for children and adolescents, who may be more susceptible to harmful messages because of their youth. In addition, individuals who adopt unhealthy behaviors in their youth, such as smoking, tend to continue those behaviors throughout their lives.

Over the past decade, RAND researchers have found links between media exposure and the initiation of smoking, alcohol use, and sexual activity. Youth exposed to ads or movies featuring cigarette or alcohol use are more likely to initiate smoking[59, 60, 61] and drinking behaviors.[62, 63] The RAND Television and Adolescent Sexuality Study demonstrated a relationship between viewing sexual content on TV and the subsequent initiation of intercourse, as well as teenage pregnancy.[64, 65, 66]

Obviously, media content is not readily amenable to public policy action, due to First Amendment concerns. However, parents can shield young children from unhealthy media messages and counter messages aimed at older children through regular communication and by serving as a good role model.[67]

Peer Influences. RAND research has also shed light on the powerful role that family and peer social networks play in influencing risky behaviors, such as substance and alcohol use, smoking, overeating, and physical inactivity. Although peer networks are frequently implicated in the initiation of risky behavior, positive peer relationships can also be leveraged to exert protective effects.

The positive and negative effects of peer relationships informed the development of one of RAND's most successful programs: Project ALERT, a school-based drug and alcohol prevention program.[68] In contrast with other programs that have produced disappointing results, Project ALERT has been shown to be highly effective at reducing rates of student substance use.[69]

When first created in the 1980s, Project ALERT represented a departure from typical, education-focused prevention activities. It recognized that a key dimension of adolescent substance use is the social environment in which children are pressured to engage in risky activities. Project ALERT targets these social norms while giving students tools to recognize and resist social and media pressure to drink and do drugs. Initially tested among middle school students, the program was subsequently extended to the 9th grade, where it curbed weekly alcohol and marijuana use, at-risk drinking, and attitudes conducive to drug use among at-risk girls.[70]

Project ALERT is now the most widely used research-based drug prevention program in the United States. It is distributed by the BEST Foundation, which periodically updates program materials and offers training and technical assistance to encourage school-wide or district-level adoption of the program.[71]

The resistance skills that Project ALERT teaches remain long after the formal program is completed. Compared with peers who had not received the program, youth exposed to Project ALERT as adolescents were significantly less likely as young adults to either engage in sex with multiple partners or have unprotected sex because of drug and alcohol use.[72]

Conclusion

A broad range of social, behavioral, and environmental factors influence Americans' health as surely as does the treatment provided by doctors, clinics, and hospitals. But because population health measures typically have long lead times to produce results, they are rarely considered in discussions of policy options to limit growth of health care spending. If spending on health care crowds out national and state-level investments in public education, environmental protection, and other important contributors to population health, our nation's downstream health care costs may be greater still.

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