KEEPING AMERICA HEALTHY: ESSENTIAL ELEMENTS OF SUCCESSFUL PROGRAMS

Partnership to Fight Chronic Disease

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INTRODUCTION

Chronic diseases are the most prevalent and costly health care problems in the United States, as well as the most preventable. They account for seven out of 10 deaths in America and consume 75 cents of every dollar spent on health care. Nearly half of the people in America suffer from a chronic condition, such as high blood pressure, diabetes, or asthma. A recent study indicates that life expectancy has recently dropped for the first time in about 100 years, and may be the result of chronic disease resulting from smoking and obesity.

Recognizing both the significant problems with chronic disease and the opportunities for population health improvement, groups across the country are developing sustainable, replicable programs that work to improve health and lower costs. Private sector for-profit and nonprofit organizations have led the movement by developing new approaches to improving health that take advantage of technology, and by nimbly adapting to evolving needs and circumstances. The public health community has demonstrated resourcefulness in its ability to accomplish tremendous results often with limited resources. Taking advantage of the strengths of both sectors, programs that involve public/private partnerships often provide a significant source of innovative approaches and successful, sustainable programs.

Investments in high-impact, cost-effective population prevention and health improvement programs can increase the affordability of health care, while helping Americans live longer, healthier lives, which contributes to higher productivity and increased economic performance.
“For both the physical and economic health of our country, we must bring together all sectors to find new, innovative, and cost-effective ways to prevent chronic disease. Any funding that we spend to prevent chronic disease today will actually be a valuable investment — with long-term dividends.”

—Richard H. Carmona, M.D., M.P.H., F.A.C.S.  
17th Surgeon General of the United States (2002-2006)  
President, Canyon Ranch Institute  
Chairperson, Partnership to Fight Chronic Disease

This resource explores the effects of chronic disease, as well as the evidence supporting the positive impact that population health improvement activities can have on health, health care costs, and overall economic gains. It provides examples of effective population health improvement programs that have been implemented in a variety of settings (workplaces, communities, schools, and within the health care system), and analyzes what makes them successful. Finally, this resource includes a catalog of programs that can serve as examples of what can be done to change individual behavior, maintain or improve health, and manage the staggering health care costs associated with chronic disease.

This toolkit is sponsored by the Partnership to Fight Chronic Disease, a coalition of patients, providers, community organizations, business and labor groups, and health policy experts committed to raising awareness of the No. 1 cause of death, disability, and rising health care costs in the U.S. The Lewin Group provided research and technical support for the formulation of this document, but as an objective consulting firm does not endorse specific policy recommendations.
The Impact of Chronic Disease

Chronic diseases are the most prevalent and costly health care problems in the United States. Nearly half (45 percent) of all Americans suffer from at least one chronic disease. More than two-thirds of all deaths are caused by one or more of five chronic diseases: heart disease, cancer, stroke, chronic obstructive pulmonary disease, and diabetes. Many chronic diseases are lifelong conditions, and their impact lessens the quality of life not only of those suffering from the diseases, but also of their family members, caregivers, and others.

Chronic disease not only affects health and quality of life, but is also a major driver of health care costs and threatens health care affordability. According to the Centers for Disease Control and Prevention (CDC), chronic disease accounts for about 75 percent of the nation’s aggregate health care spending — or about $5,300 per person in the U.S. each year. In taxpayer-funded programs, treatment of chronic disease constitutes an even larger proportion of spending — 96 cents per dollar for Medicare and 83 cents per dollar for Medicaid. Much of the persistent increase in spending over the past two decades is attributable to rising disease prevalence, lower clinical thresholds for treatment, and new medical innovations that have emerged to treat chronic and other diseases.
Unhealthy behavior and increased incidence of chronic disease are also extremely costly in terms of health care coverage affordability. Since 2000, health insurance premiums for employer-sponsored family coverage have increased by 87 percent. Health care costs for people with a chronic condition average $6,032 annually — five times higher than for those without such a condition.

Chronic disease also has broader economic impact. Poor health and chronic disease reduce economic productivity by contributing to increased absenteeism, poor performance, and other losses. A Milken Institute analysis determined that treatment of the seven most common chronic diseases, coupled with productivity losses, cost the U.S. economy more than $1 trillion dollars annually. The same analysis estimates that modest reductions in unhealthy behaviors could prevent or delay 40 million cases of chronic illness per year.

Chronic diseases affect Americans of all ages, races, and socioeconomic backgrounds, although there are notable disparities in the degree to which certain diseases affect various populations. While poor or low-income people of all races report worse health status than their higher-income counterparts, differences in overall health status by race and ethnicity persist even within income groups. Several minority groups experience a higher prevalence of specific health problems, such as obesity and diabetes, which can have serious consequences on health and longevity. Education level also appears to play an important role, as lower education levels are correlated with higher death rates at an earlier age.

### Preventing and Managing Chronic Disease

Population health improvement efforts that empower and motivate individuals to make informed decisions about their health and obtain appropriate care can improve the wellness and productivity of our society and mitigate the trend of rapidly rising costs caused by chronic disease. The Centers for Disease Control and Prevention estimates...
that eliminating three risk factors alone — poor diet, inactivity, and smoking — would prevent 80 percent of heart disease, stroke, and Type 2 diabetes, and 40 percent of cancer in the U.S.\textsuperscript{14}

Modern public health theory and practice stress the importance of a multidimensional approach to improving population health. People with chronic conditions often see more than one provider and take multiple medications. Accordingly, coordination of care among health care providers is critical. A person’s well-being, however, is affected by many factors beyond medical care, particularly individual behavior. According to the well-established \textit{Determinants of Health}, well-being encompasses five key determinants: biology, environment, social environment, lifestyle, and behavior.\textsuperscript{15}

The \textit{Expanded Chronic Care Model} incorporates elements of public health promotion, the social determinants of health, and community participation as key complements to the original \textit{Chronic Care Model’s}\textsuperscript{16} focus on the clinical team (see Figure 1). This approach has guided the development of many successful population health improvement programs and aided the assessment of essential elements of successful programs included in this document.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{expanded_chronic_care_model.png}
\caption{Expanded Chronic Care Model}
\end{figure}

In the model, the inner oval represents the health system. The larger oval incorporates the community, including the important influence of public policy, supportive environments, and community action in supporting an individual with a chronic disease in maintaining or improving his or her health.
Effective population health improvement strategies consider the range of physical, environmental, and socioeconomic factors that contribute to health. The core concept of population health improvement is equipping individuals with the information they need to make appropriate choices, and empowering them to make those choices with their health care provider. This approach allows individuals to achieve or maintain optimum mental and general health, thereby reducing preventable medical expenses across the entire population.\(^{17}\)

Population health models focus on combining both provider and individual approaches to promote patient-focused, coordinated care in ways that can limit the complications or consequences of chronic disease. Provider-focused approaches attempt to provide information and incentives to providers to facilitate the delivery of evidence-based, high-quality care. Approaches focused on individuals work to equip people who have chronic disease with information and incentives to promote effective self-management and adherence to treatment plans. Paramount among population health models of care management is the ability to highlight and focus attention on the critical factors affecting appropriate utilization of health care services.
Characteristics of successful population health improvement approaches include:

- Active engagement and personal responsibility for health status and health outcomes;
- Understanding of health status and conditions at the individual level, and;
- Adoption of and adherence to healthy personal behaviors and lifestyles.\(^{18}\)

Population health improvement programs are diverse and plentiful. They range in scale and scope from statewide efforts involving thousands to local efforts involving fewer than 100 people. Programs may involve multiple conditions or focus on one disease. Initiatives rely on a variety of means to change behavior and range in focus from increasing physical activity to undergoing specific clinical efforts targeted at an individual disease. Despite the variety in scope, scale, and objective, successful
programs do share common elements that appear essential to their success.

Because of the broad range of programs, for the purposes of this review, the interventions have been grouped into four categories:

- Community-based interventions
- School-based interventions
- Health care system interventions
- Workplace interventions

The next section reviews available literature on population health improvement programs, and describes the evidence demonstrating that some programs and approaches have achieved improvements in both health care and health outcomes, while also providing cost-savings or cost-neutrality.

Health improvement efforts take place in many settings. For this analysis, programs are divided into those occurring in communities, schools and workplaces, as well as in the health care system.
Evidence-based research suggests that well-designed prevention and chronic disease management programs can both improve health and provide financial value, including cost-savings. However, as there are numerous prevention strategies and programs addressing various health care conditions in different settings, it is difficult to estimate the precise aggregate or average cost-savings or health benefits that can be attributed to adopting a more aggressive prevention-oriented health care system. Adding to the difficulty, the time period covered in many studies is too short to capture any cost-savings, which require an extended period of time to accrue.

While the available literature provides examples primarily drawn from clinical and workplace interventions, data on clinical programs is more readily available because: 1) clinical disease management programs have the ability to save money in a shorter period of time than do primary prevention programs, and; 2) clinical programs are more likely to be designed to capture and evaluate both health and cost outcomes. However, an increasing amount

“The central fiscal challenge facing the nation involves rising health care costs.”

— Peter Orzag, director, Congressional Budget Office
of literature is emerging for workplace programs, as more companies are looking to implement evidence-based programs for their employees. In contrast, there is limited research available that describes community- and school-based programs. That which does exist may report data on health improvements, but may not collect data related to cost-savings.

Population health improvement efforts could have an enormous impact on preventing or delaying disease onset by focusing on reducing modifiable population risk factors and health behaviors, such as poor diet, lack of physical activity, and smoking. In addition, upon diagnosis of a chronic disease, disease management efforts can be employed to help mitigate its effects. Addressing how the current system encourages maintaining the status quo and realigning those incentives to encourage the changes needed to make a difference will contribute to the success of population health management.

**Aligning Incentives**

In an ideal medical system, people would receive the appropriate amount of services at a time when and in a setting where the intervention would provide the greatest health benefit. For example, getting unnecessary services ("overutilization") increases cost while providing little value. Conversely, delaying or avoiding services ("underutilization") can mean more intensive and expensive care, unnecessary morbidity and mortality, and overall poorer health status.

In recent years, government and private payers have developed new strategies to educate people about their health care needs and costs. Making consumers more price sensitive to medical care is an effort to discourage overutilization or inappropriate utilization. At the same time, efforts to reduce barriers — such as reduced costs and copays — for certain high-value treatments and services are designed to encourage their use and avoid underutilization. For example, programs can identify people with specific diseases, such as diabetes or coronary heart disease, and reduce cost-sharing for high-value services for these patients as a means to increase adherence to certain treatments. The development of consumer-driven coverage models with low out-of-pocket costs for preventive care is an example of both encouraging price sensitivity and reducing cost barriers.

Reduced consumer copayments or premiums are also used to encourage healthy activities, such as completing health-risk assessments or participating in health literacy, smoking

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**Bridges to Excellence**

Bridges to Excellence (BTE) is the largest employer-sponsored effort that rewards and recognizes physicians for meeting quality benchmarks. BTE uses National Committee for Quality Assurance recognition programs to reward high-performing physicians who consistently produce high-quality outcomes in numerous clinical contexts. BTE has resources available for purchasers interested in developing payment-based provider incentives to stimulate quality improvements.

For more information on BTE, visit www.bridgestoexcellence.org.
cessation, or health coaching programs. Purchasers and health plans can also establish different cost-sharing provisions tailored to the specific characteristics of members. These strategies are directly linked to Value-based Insurance Design, a health care benefits design concept that aligns the incentives in care delivery so as to improve compliance and advocates that copayment rates be based on the value of clinical services (benefits and costs) — not exclusively the costs.21

Health Improvements

Prevention strategies have the potential to reduce the risk of chronic diseases in the United States.23 Three out of every four dollars spent on health care goes toward treating diseases and complications, many of which could have been prevented in the first place.24 While such investments may take time for returns to materialize, receiving timely preventive care services can improve quality of life for patients, and may decrease long-term health care expenditures to treat chronic disease.

Available literature demonstrates some evidence of improved health outcomes and savings that are attributable to specific prevention strategies as practiced in various settings. For example, a recent study found that the combined impact of the following measures, which also are among the most cost-effective preventive services, could save as many as 100,000 lives each year:

- Taking aspirin daily to prevent heart disease;
- Advising smokers to quit and offering medication or other assistance;
- Ensuring that adults aged 50 and older are up-to-date with recommended screenings for colorectal cancer;
- Ensuring that adults aged 50 and older are immunized against influenza annually, and;
- Ensuring that women aged 40 and older have been screened for breast cancer in the previous two years.25

In addition to strategies related to encouraging appropriate utilization of health care services among consumers, other strategies deal directly with the health care provider. Efforts to develop new performance-based reimbursement methods, including pay-for-performance, are based on the recognition that provider payment mechanisms generate strong incentives that can influence the quality and efficiency of care.22
Prevention programs must be appropriately tailored to the high-risk target population. Programs structured to target people who are at higher risk are more effective than programs that screen large segments of the population for a particular illness or condition without regard to risk.\(^{26}\) When directly tied to particular interventions or population groups, however, prevention can be cost-effective, even in the short term. For example, medications that are often used to treat high cholesterol demonstrate their greatest value for those populations with the highest risk for coronary artery disease.\(^{27}\) Moreover, broad lifestyle-based prevention activities such as improving diet, increasing physical activity, and reducing smoking can have an immeasurable impact on individual and population health.\(^{28}\)

Disease management interventions following a diagnosis of a chronic disease can also have a positive effect. Chronically ill populations — particularly those suffering from multiple diseases and conditions or receiving services from multiple health care providers — may require appropriate and ongoing management and intervention to ensure adherence to high-quality care, and, ultimately, to improve health outcomes. Accordingly, many health plans have developed varying forms of coordinated health care interventions and communications, such as care management, education, and training on self-management and medication compliance for consumers with certain prevalent diseases. For example, Cherokee Health Systems in Tennessee integrated mental health services into primary care covering adult, family practice, and pediatrics. The integrated health care team is able to treat the whole person — mind and body — in one setting.\(^{29}\)

**Cost Management**

Overall, the structural incentives and historical design of our current health care model are not well-suited for the prevention and management of chronic diseases. The system was developed to address acute episodes of illness, such as infectious diseases. Thus, it relied upon patients to seek care only when they showed physical signs of illness — a fever or worsening cough, for example — followed by a diagnosis and short course of treatment by a provider. Providers were then reimbursed for addressing the immediate health care need presented. With acute ailments, however, there is limited need for preventive care and, other than routine vaccinations for some populations, provider reimbursement for such efforts is limited.
Managing costs better while preserving or even improving the quality of care received requires continual evaluation of the system’s current incentives, which tend to perpetuate the episodic care model and drive costs. A realignment of those incentives could help to motivate change. The potential for improvement can be substantial, as even modest advances can make a big difference. Consider what would happen if the U.S. took comprehensive action to address obesity, and we returned to the obesity levels of 20 years ago. If the prevalence of obesity were the same today as in 1987, health care spending would be 10 percent less per person — about $200 billion less overall.  

Many programs captured in the literature are clinical and workplace programs because they are more likely than community- and school-based programs to fund studies and publish results. Also, cost-management strategies are increasingly aimed at assuring value for the investment by making evidence-based decisions on appropriate care. Examples show the potential impact:

- Stanford’s Chronic Disease Self-management Program used a randomized controlled trial to evaluate a community-based self-management program that assists people with chronic illness. The study cost approximately $200 per person for training, materials, and administration. In addition to improved health, researchers also found that the program saved between $390 and $520 per participant over a two-year study period, because participants used fewer health care services.  

- North Carolina’s Division of Medical Assistance Community Care of North Carolina program provides medical homes for Medicaid beneficiaries. When compared to historical fee-for-service program benchmarks, the state saved more than $230 million in 2004, a savings of more than $32 per member, per month.  

- Minnesota’s Reducing Environmental Triggers of Asthma (RETA) Home Intervention Project focused on reducing environmental triggers for children with asthma, and was shown to improve health outcomes and reduce health care costs. Average costs for the initial home assessment and product interventions were approximately $468 per child. Unscheduled physician office visits declined, with a net savings of approximately $1,960 per child.  

- Aetna’s internal audit of its diabetes and heart failure disease management program showed an overall return on investment of approximately three to one. The savings came from the sickest patients, such as those with heart disease, while asthma programs were close to breaking even.
Some evaluations of disease management programs found improvements in health care practice patterns, outcomes, and costs. For example, researchers found that Healthways, Inc. disease management program targeting adults with congestive heart failure led to increases in pharmacy and ACE inhibitor utilization, which indicated that the targeted interventions had the desired effect on the behavior of both patients and their physicians. The study found a per member, per month cost savings of 28 percent in total medical costs (excluding the cost of the program) for the first year.\textsuperscript{35}

**Productivity Gains**

Good health is a vital component of individual well-being, which is a prerequisite for optimal productivity, both in the workplace and in schools. People with chronic disease may have diminished productivity, both from missing work or school (“absenteeism”) or from not performing optimally when they are present (“presenteeism”). Literature suggests that output loss due to presenteeism is immense; some research suggests that for certain diseases, it can be up to 15 times greater than for absenteeism.\textsuperscript{36} Further, chronic disease affects more than just the individual — caregivers and other family members may also lose productivity through missed workdays and presenteeism. The gains in productivity often provide the greatest return on the investment in health improvement efforts. In fact, research from the Integrated Benefits Institute shows that corporate leaders would make different decisions concerning benefits if they had better information on health-related lost productivity.\textsuperscript{37} Some employers have realized significant savings by lowering absenteeism:

- Nevada’s Washoe County School District implemented a workplace wellness program that provides reductions in health care costs for those who participate in the “Annual Good Health Incentive Screening,” and take steps to address identified risk factors. **Evaluators found that the reduction in absenteeism had a return of $16 for every dollar spent on the program.**\textsuperscript{38}

- Facing a trend line of 20 percent increases in direct health care costs over four years, Caterpillar, Inc., is taking aggressive steps to improve the health of its employees, its retirees under age 65, and their dependents through its Healthy Balance Program. By developing a focused risk-management strategy to identify disease risks early and to intervene with evidence-based care, **Caterpillar reduced its disability days by half,**\textsuperscript{39} has reduced aggregate health risk scores among employees and dependents, and estimates that the program will save $700 million by 2015.\textsuperscript{40}
COMMONALITIES AMONG SUCCESSFUL POPULATION HEALTH IMPROVEMENT PROGRAMS

“There is a lot of debate about how to pay for health care, but there is a lot of agreement about the need for better prevention and management of chronic diseases that can yield better results for patients and overall cost savings.”

—Mark McClellan, M.D., Ph.D., former director, Centers for Medicare and Medicaid Services

Identifying Successful Programs

Program designs vary based on their focus, target population, sponsorship, location, and a host of other factors. They may be clinically-focused on disease management, prevention-oriented, geared to individuals with a specific chronic condition, or broad-based and more. This diversity creates challenges for determining “model” or effective initiatives and identifying the common elements that make them successful. For this analysis, we used three primary criteria for selecting exemplary programs, as described in the accompanying text box.
Successful population health improvement programs share essential elements that contribute to their success. (See Table 1.) We derived the essential elements from peer-reviewed literature, practical experience, and information from experts, program sponsors, and organizations focused on population health management. Together, these elements provide the foundation for model practices that other organizations can follow to address the burdens of chronic disease.

### Criteria for Program Selection

1. Presence of objective data, which demonstrate:
   - a. Health improvement/behavior change;
   - b. Cost savings or cost neutrality, and/or;
   - c. Achievement of program goals.
2. Duration of program exceeds three years.
3. Program replication is possible.

### Essential Elements of Successful Programs
<table>
<thead>
<tr>
<th>Essential Element</th>
<th>Explanation</th>
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<tbody>
<tr>
<td>1. Define problem and program objective</td>
<td>Identify and clearly describe problem, program objective and target population using relevant, reputable data. Success is defined at inception and measures included in plans.</td>
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<tr>
<td>2. Tailor program to the target population</td>
<td>Program and its resources are tailored to achieve objectives within the target population. Program materials and approach must reflect cultural sensitivities and health literacy levels, and be relevant to the target population.</td>
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<tr>
<td>3. Engage leadership</td>
<td>An individual or group is responsible for the program and its success. Leaders promote participation, shepherd resources, and provide overall, ongoing support. Engagement of leaders with particular influence over the target population is key. Leaders commit to engage for the length of time required to achieve the objective and are willing to experiment.</td>
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<tr>
<td>4. Coordinate among stakeholders and across settings</td>
<td>The program engages the target population and those who can help achieve program success. Coordination involves collaboration, consistent communication, and transparency of program processes, data, and goals among stakeholders and across settings. Stakeholders adopt the program’s objectives, and promote the program within their respective spheres of influence.</td>
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<tr>
<td>5. Integrate throughout the organization or community</td>
<td>Program becomes part of the culture, messages, and activities of the organization or sponsor and the target population.</td>
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<td>6. Empower target population</td>
<td>Program engages with the target population to develop knowledge needed to achieve the desired results. Programs promote engagement by identifying and removing informational, financial, procedural, and access barriers.</td>
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<tr>
<td>7. Motivate target population</td>
<td>Program regularly engages, encourages, assists, rewards, recognizes, and equips the target population to foster their involvement. Program further encourages participation by managing resistance to change, building individual accountability, and regularly communicating about the program, achievement of milestones, and individual successes.</td>
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<tr>
<td>8. Sustain and institutionalize program</td>
<td>Program is sustained and continues over time through support and appropriate focus from key leadership, and maintains financial viability. Changes to policy are achieved.</td>
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<tr>
<td>9. Measure, evaluate and refine program</td>
<td>Program includes ongoing evaluation and assessment of gaps between outcomes and stated goals, and evolves to improve outcomes, achieve refined goals, or meet evolving needs.</td>
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Source: Lewin analysis
While not every successful program will contain all of these components, the nine essential elements are relatively consistent across a variety of programs, settings, and populations. In this section, we define each element in general terms. In the next section, we adapt the explanations to each of the four categories of programs (communities, schools, health care systems, and workplaces) and include examples of the elements as they relate to programs within them.

**Essential Element 1: Define Problem and Program Objective**

Identify and clearly describe problem, program objective and target population using relevant, reputable data. Success is defined at inception and measures included in plans.

Before any population health improvement program is put into place, leaders and stakeholders must agree on the problem and develop a clear overall objective. Model programs use data (e.g., public health morbidity and mortality data, population demographics, school absentee records, health-risk assessments and aggregate health claims data in workplaces) to identify health issues, target populations, and even program strategies. They create quantifiable objectives, and share a clear definition of success at the program’s inception. Leaders and stakeholders also identify milestones to track progress toward the overall objective and ways to measure interim results. This first essential element addresses the following program characteristics: What? Why? Who? How Much? When? Proof?

**Example:** King County, Wash., officials identified an increasing prevalence of uncontrolled asthma in its the county’s schoolchildren, and developed the “Healthy Homes Initiative” in response. Persistent asthma was defined as a caregiver report of persistent asthma symptoms in the child, in addition to a clinical asthma diagnosis. The target population was narrow: King County children aged 4 through 12, who had been diagnosed with asthma, and whose families had incomes below 200 percent of the federal poverty level. Participants were recruited from community and public health clinics, local hospitals, and emergency rooms, and referrals from community residents and agencies. Program materials were developed in English, Spanish, and Vietnamese. The program was specifically designed to reduce exposure to indoor asthma triggers, such as those from dust, pets, indoor tobacco use, and moisture.

Community health workers (CHWs) made initial assessments of households, which consisted of administering a questionnaire, conducting a visual inspection of the home along with the family, and taking environmental measurements. The CHWs also educated the family about knowledge of asthma triggers and access to medical care for asthma, among other things. After an initial assessment visit, outreach workers made nine visits over the next year to measure progress in reducing asthma triggers. Participating families used significantly fewer urgent health services and experienced fewer days with asthma symptoms.
Successful programs uniquely tailor and deploy initiatives to accommodate individual circumstances, cultural preferences, and needs within the target population. The efficacy of a particular intervention can vary by sex, age, race, geographic location, and other factors. The target population may be broad (e.g., all state residents) or specific (e.g., children with asthma in one county). When developing a successful program, leaders must address the challenges of reaching an audience with varying levels of health literacy, as well as particular language needs and cultural preferences. Societal issues, such as neighborhood safety, the cost of healthy food choices, and homelessness, may also affect program design. Additionally, special consideration may be required when programs target people with mental health conditions. Tailoring to the target population also means focusing resources on those with the greatest need and for whom the program will be most effective.

Some programs may not target people at risk for chronic disease at all, but rather focus on others who influence people with chronic illness. Programs may, for example, be focused on health care providers, to enable or incentivize them to prevent or treat chronic disease in their patients more effectively. For programs designed to improve children’s health, the target population may involve reaching out to parents, school nurses, teachers, or even peers.

Example: The South Carolina REACH 2010 initiative was aimed at African-Americans with diabetes. To reach its target audience, leaders partnered with the local chapter of Alpha Kappa Alpha sorority, a 100-year-old organization with a predominantly African-American membership. The sorority brings fraternal, professional, and social service organizations, as well as community leaders, into the initiative and assists as volunteers in REACH activities. The sorority also recruits volunteers to assist with the Summer Youth Program.
disease. Leaders also identify existing programs with similar objectives and/or target populations, and seek opportunities to join forces for the benefit of both efforts. Leaders need not be those traditionally committed to improving health. For example, religious leaders may recognize the impact of chronic disease on their congregations, or business leaders may notice rising absentee rates. The leader, however, should have influence within the population identified.

**Example:** In the early 1970s, community leaders in San Francisco came together to improve their ability to meet the long-term care needs of older immigrants from Italy, China, and the Philippines. Because of cultural preferences, many of these people declined nursing home care, despite having long-term care needs that were greater than family members could manage. Leaders brought together a range of providers and developed the Program of All-inclusive Care for the Elderly (PACE) to provide intensive adult day services. In the 1990s, the program was piloted in several states for Medicaid and Medicare dual-eligibles. As of 2007, there were 42 PACE programs in 22 states.

The range of potential stakeholders — especially for community programs that may rely on partners for a variety of financial and in-kind support — is broad. Community programs may engage health care providers, schools, faith-based organizations, and local businesses. In public health care programs, stakeholders may also include local, state, and federal policymakers. Within health systems, the type of stakeholders (providers, patients, families, insurers) may be less broad, but the settings in which each operates will differ, and coordination among these settings is critical to health improvement.

The growth of many successful programs comes from stakeholders’ commitments to bringing the programs’ objectives to bear within their own spheres of influence — both inside and outside an organization. Stakeholders can help reinforce messages about a program and spread them to other organizations and settings, but they can also be barriers to success, if they do not support a program’s goals. As such, early and continuing engagement is critically important. Regular communications can facilitate continued engagement by keeping stakeholders informed about their roles, program challenges, successes, and opportunities for additional involvement.

**Example:** The Steps to a Healthier U.S. program is a chronic disease prevention and health promotion program of the U.S. Centers for Disease Control and Prevention. The program relies on traditional and non-traditional partners, such as Chambers of
Commerce, transportation providers and the media to extend the reach of their programs. So-called “Steps communities” create action plans and evaluation strategies to address and implement evidence-based activities for six priority health challenges: obesity, diabetes, asthma, physical inactivity, poor nutrition, and tobacco use.

**Essential Element 5:**
**Integrate throughout the organization or community**

Program becomes part of the culture, messages, and activities of the organization or sponsor and the target population.

Successful programs are fully integrated into the workplace, health plan, school, physician’s office, or community. Integration reinforces program messages and goals, and the change the program is designed to achieve. Strategies for an embedded wellness program at work, for example, may include healthy food in the cafeteria, elevator signs urging employees to use the stairs, policies encouraging employee health-risk assessments, and eliminating copayments for preventive services.

**Example:** The evidence-based Coordinated Approach to Child Health (CATCH) program teaches children healthy behaviors by reinforcing those behaviors through coordinated efforts in the classroom, in physical education classes, at home, and in after-school programs.

Successful programs engage the target population to develop knowledge needed to achieve the desired results. Programs promote engagement by identifying and removing informational, financial, procedural, and access barriers.

**Essential Element 6:**
**Empower target population**

Program engages with the target population to develop knowledge needed to achieve the desired results. Programs promote engagement by identifying and removing informational, financial, procedural, and access barriers.

Successful programs engage people to assume responsibility for their health-related behaviors, such as exercising, eating properly, taking their medicines, keeping doctor or annual screening appointments, and not smoking. They educate their audience about the consequences of modifiable behaviors that can lead to chronic disease, or help people manage their chronic illness to prevent exacerbation. They remove barriers that would hinder participation, and promote personal responsibility in achieving individual and overall success. They may even provide transportation to screening appointments and translation services for non-English speaking members. Culturally-appropriate materials that are geared to a variety of literacy levels and disseminated through the “right” media are critical to empowering the target population.

Successful programs also use technology and other tools to help people make needed changes and track progress. For example, programs may provide pedometers to help people track their activity, logs for reviewing food intake, and glucose monitors so people with diabetes can track their blood-sugar levels. For populations with dementia or mental health conditions, programs may...
use unique tools and approaches, such as automated phone calls to remind participants to take medications at certain intervals.

Programs focused on providers may employ technology that facilitates the use of evidence-based guidelines for managing specific chronic diseases; patient registries; chart reminders for recommended screenings and tests; or; patient treatment and outcomes data. On a larger scale, information technology can be used to track changes in disease prevalence and predict trends in a community or a health plan.

**Example:** Kaiser Permanente offers health plan members a Web-based personal health record, “My Health Manager,” that empowers members with easy access to the same health information their health care providers see. The tool allows members to schedule appointments, order prescription refills, and review test results, immunization records, and eligibility and benefits information. Members can research health information online, track progress from test results, and also send secure e-mail messages to their health care providers with specific questions about their health from the site. As of April 2008, more than 2 million members were using the personal health record.41

Successful prevention and disease management programs motivate participants by recognizing that people’s willingness to change can vary, and by applying appropriate incentives and pressures to encourage necessary changes. People who are already committed to achieving a program’s goals, such as weight loss, are often self-motivated. Others respond to incentives and rewards. For example, some Medicaid health plans provide gift certificates to children and teens who obtain recommended screenings, and to pregnant women who obtain prenatal care.

Cultural sensitivity is paramount in effective motivation strategies for some participants. For students, an effective strategy may be using peer-educators or trusted adults, such as teachers or coaches. Another effective motivational strategy may be to appeal to group pride, such as wellness-promoting competitions between schools or communities. At the same time, individual accountability — captured through regular weigh-ins or clinical measures, such as blood-sugar levels and blood pressure — can also provide powerful motivation.

As noted previously, the target population may not be the person with the chronic disease, but health care providers. For them, reimbursement incentives, contract requirements, and recognition are proven methods of motivation. Medicaid programs may, for example, require health plans and providers to meet standards for disease
management, or conduct outreach to ensure patients receive specific screenings and treatment according to recognized guidelines. Health plan pay-for-performance programs may provide financial incentives and public recognition for physicians whose patients obtain preventive health screenings, such as mammograms.

**Example:** Alegent HealthCare’s employee workplace wellness program, “Power to the Patient,” used financial incentives to motivate employees to engage in healthy behaviors. The company offered all preventive services — ranging from annual check-ups and routine childhood immunizations to mammograms and prostate specific antigen tests — at no cost to the employee. Further, the company offered financial incentives to encourage employees to enroll in health improvement activities (e.g., health coaching). In 2006, in recognition of the resulting reduction in health care expenditures, Alegent returned $700,000 of its savings to employees through $100 rebates to employees who improved their health.

**Example:** Healthier Florida, Florida’s Medicaid Section 1115 demonstration program, includes enhanced benefit accounts, in which beneficiaries accrue up to $125 in credits annually for participating in healthy behaviors, such as obtaining preventive care, smoking cessation, or drug treatment. Beneficiaries can use the credits to purchase over-the-counter drugs and other items at any Medicaid-participating pharmacy. By December 2007, Medicaid participants had earned more than $9 million in credits.

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**Essential Element 8: Sustain and Institutionalize Program**

Program is sustained and continues over time through support and appropriate focus from key leadership, and maintains financial viability. Changes to policy are achieved.

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Program continuation over time can be challenging, but is a critical element of success. Ongoing programs succeed because leaders planned for a sustained effort from program inception. They embedded it, provided funding (perhaps through public-private partnerships for community and local government programs), utilized effective tools, fostered stakeholder advocacy for the program, achieved results, and set new goals. Sustainability may require public policy changes, as well. In Medicaid, for example, disease management programs often begin as
pilot projects and, once proven, evolve over time into statewide initiatives. Successful programs appear to recognize that improving health and health care is an evolution instead of a revolution, and take steps to adapt, add objectives or increase reach, learn from mistakes, and build upon successes.

**Example:** The National Institute of Health’s National Heart, Lung, and Blood Institute and the National Recreation and Park Association initially developed the Hearts and Parks program to encourage participants to aim for healthy weight, follow a heart-healthy eating plan, and engage in regular physical activity. Since its inception in 1999 in two communities, the program has grown to more than 50 communities.

Some of the program’s prolonged success can be attributed to the ease with which its components can be incorporated into existing community health and wellness programs. The program found that children’s attitudes towards physical activity improved significantly, and children reported learning new ways to be physically active. Adolescents improved in heart-healthy eating and in their attitudes toward heart-healthy eating.
Adult participants finished programs with improvements in heart-healthy nutrition, reduction in overweight/obesity risks and blood pressure, engagement in proper physical activity, and control of high cholesterol.

**Essential Element 9: Measure, Evaluate and Refine Program**

Program includes evaluation and assessment of gaps between outcomes and stated goals, and evolves to improve outcomes, achieve refined goals, or meet changed needs.

Before a program begins, leaders have defined their measures of success, and determined the data and sources of data needed for evaluation. Interim results also provide opportunities for adaptation. Sponsors of model population health management programs evaluate the programs to:

- determine whether they are effective and why; achieve goals; demonstrate value (in terms of improved health, changed behavior, and/or money saved);
- reach the target population, and/or; require change.

Stratifying results for different groups can assist in identifying changes needed to achieve higher overall results. For some clinically focused disease management programs, there are standards promulgated by national organizations for assessing program results — accepted quality measures and evidence based practice guidelines, for example. Corporations may use health claims, expenditure and even productivity data.

**Example:** USAA’s employee wellness program, “Take Care of Your Health,” combines methods ranging from onsite fitness centers and healthy cafeteria food choices to integrated disability management and health-risk assessments. Program leaders evaluate the program’s impact using a customized data warehouse that captures the full spectrum of employee health and wellness information, including demographics, population health consumption, health and wellness participation, and intervention outcomes. Data analysis provides ongoing opportunities to fine-tune all wellness initiatives and health benefits programs to continue improving the health of employees and their families. The program has also saved USAA money. The company has experienced reductions in the frequency, rate, and severity of workers’ compensation claims, and declines in workplace absences, with an estimated three-year net savings of more than $105 million.42

**Example:** IBM not only relies upon data to promote the health and wellness of its 350,000 employees, but it also offers employees access to their individual medical and pharmacy claims data through its Web-based “Personal Health Records.”
Ultimately, the system will include access to lab data, and provide emergency access to providers, as well. IBM also offers employees incentives to complete health-risk assessments, to engage in healthy behaviors, and to recognize achievements from participation in evidence-based disease management programs. With its multifaceted approach to improving the health and productivity of its workforce, IBM estimates health and wellness programs have saved the company more than $175 million a year. As a result, employees and the company enjoy lower health care premiums.
The right way to control costs is also the right way to bring better and more efficient care. ...It involves four fundamental principles — using information technology, paying for results, improving quality, and investing in prevention.”

– U.S. Sen. Edward Kennedy (Mass.)

The essential elements of model programs apply to a variety of types of population health management programs and initiatives. In the next section, the explanation of these critical components has been adapted to four common program settings:

- Communities
- Schools
- Health care systems
- Workplaces

While successful programs incorporate the essential elements discussed in Section IV, they target different populations, and have varying goals, strategies, and kinds of interventions. Despite the large variety of effective population health management programs, they do share elements essential to developing winning strategies. The sections below explain each of these
key elements within the context of the setting. The explanations are by no means all-inclusive, but they illustrate the ways model programs implement these practices. It is important to note that the tables reflect components common to model programs, but do not address specific strategies and interventions, as those vary according to the goal of individual programs.

**Promote physical activity.** These include campaigns that promote exercise, such as creating walking and biking trails, improving parks, or sponsoring communitywide races or other activity challenges. For example, the Chicago Park District partnered with the mayor to challenge all Chicagoans to lead a healthy lifestyle, and kicked off the event with a challenge to exercise 30 minutes a day, five days a week.

**Promote healthy behavior.** These programs are usually geared toward preventing and reducing the growth of specific chronic diseases. They may include improving access to fresh fruits and vegetables, or banning smoking in restaurants. For example, the YMCA of Greater Pittsburgh partnered with GoodApples to provide low-cost fresh fruits and vegetables to 42 after-school programs, several corporate wellness sites, and some local YMCAs, which set up markets in underresourced communities.

**Offer prevention services such as screenings.** Communities can also organize screening programs for those chronic diseases for which early detection can be critical. For example, as part of the New York Colorectal Cancer screening program, 43 counties provide colorectal cancer screening, along with screening- and treatment-related education. Also, the American Cancer Society provides patient
navigation services for people seeking screenings, helps identify resources for appropriate follow-up care, and provides assistance with coverage issues for treatment.

- **Reduce health disparities.** Communities may design programs aimed at reducing health disparities and their attendant risk factors. Successful programs are sensitive to cultural needs and differences, language barriers, and health literacy levels. For example, because physical activity can be more difficult for people with disabilities, the Florida Disabled Outdoor’s Association and the Florida Department of Health developed resources to help people with disabilities identify recreational opportunities.

- **Support people with chronic illness.** Some community programs enable self-management through education and other support. For example, LotsaHelpingHands.com has developed a free online tool that helps chronically ill patients and their caregivers coordinate volunteers for the supportive help they need, such as transportation, meals, and child care.44

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**The Community Guide**

CDC’s landmark Guide to Community Preventive Services is an important resource for launching effective community programs. The guide reviews evidenced-based strategies for changing risky behaviors, addressing environmental challenges, and managing specific diseases, injury, and impairment. [www.thecommunityguide.org](http://www.thecommunityguide.org)
### Table 2. Essential Elements of Successful Community-based Population Health Improvement Programs

<table>
<thead>
<tr>
<th>Essential Elements</th>
<th>Element Adapted for Community-based Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define problem and program objective</td>
<td>Identify and clearly describe problem, program objective, and target population through public health data and other information specific to community. Sources include hospital discharges, health surveys, community demographics, parks and planning resources information, housing data, and quantified health disparities. Public policy changes and needs are identified, and plans are developed to address them. Success is defined at inception and measures to evaluate success are included in plans.</td>
</tr>
<tr>
<td>Tailor program to the target population</td>
<td>Program and its resources take into account community realities and resources and are tailored to achieve the objectives set. Program materials and approach are culturally competent and meet health literacy needs of target population. Program interventions are relevant for community in general, and target population in particular.</td>
</tr>
<tr>
<td>Engage leadership</td>
<td>Leaders in the community are engaged in the process. “Community leader” is defined broadly to include those public and private sector leaders who are most influential among target population, and who can champion efforts for change, provide ongoing support, and bring resources to bear for program duration.</td>
</tr>
<tr>
<td>Coordinate among stakeholders and across settings</td>
<td>Program engages target population and those active in the community who influence target population and interact with its members. A common understanding and commitment to achieve program’s objectives, and regular, ongoing coordination are critical. Stakeholders may build upon efforts by promoting program and its objectives within their spheres of influence. Engage with others working on similar activities and/or the same population to coordinate and enhance efforts.</td>
</tr>
<tr>
<td>Integrate throughout the organization or community</td>
<td>Program and/or its messages are integrated into community activities, appropriate organizations and institutions, and/or government entities and policies, and may be codified by regulation, policies, or legislation.</td>
</tr>
<tr>
<td>Empower target population</td>
<td>Program engages the target population through culturally-appropriate, relevant communication channels. Outreach explains program, its importance, and how and why to participate, and identifies and removes known barriers to participation from the community.</td>
</tr>
<tr>
<td>Motivate target population</td>
<td>Program motivates participation through recognition relevant to target population, such as media recognition (publicity), rewards (raffles or prizes), or community pride events (celebrating milestones).</td>
</tr>
<tr>
<td>Sustain and institutionalize program</td>
<td>Program continues over time through ongoing support and publicity. High visibility aids understanding and acceptance in the community, and helps with policy changes. Changes in public policy and commitment of public resources may follow successful pilot programs, and facilitate adoption in other communities.</td>
</tr>
<tr>
<td>Measure, evaluate and refine program</td>
<td>Program is evaluated against the stated objective at regular intervals and adjustments are made, as needed. Publicity around results, including both milestone achievements and final outcomes, sustains community engagement. Measures may include walking path utilization, clinical results (weight lost, cholesterol levels improved), or decline in teen smoking rates, for example.</td>
</tr>
</tbody>
</table>
Examples of Community-based Programs

The following example highlights some essential components at work in successful community-based population health improvement programs:

**Project Dulce** is a model community program that provides outreach, education, screening, diagnosis, and clinical care to underserved minority adults with Type 1 and Type 2 diabetes.

Relying on public health data, leadership in the San Diego community identified a trend of higher rates of diabetes among certain minority groups, especially among people who were low-income, and uninsured or underinsured. They *defined the problem and program objective*, and set the program goal as achieving improvements in HbA1C, blood pressure, and lipid parameters. *The program was tailored to meet the needs of the target population*, by involving culturally-sensitive case management and peer education. For example, its services include offering a multilingual medical assistant to help patients understand the recommended treatment and to help the providers understand patient concerns.

It also incorporates community health workers, or *promotoras*, recruited from within the community to be peer educators, raise awareness about health issues, and overcome ethnic and cultural barriers. Project Dulce *coordinates across multiple stakeholders*, including health plans, universities, and community health advocacy groups.

### ADDITIONAL EXAMPLES OF COMMUNITY-BASED POPULATION HEALTH IMPROVEMENT PROGRAMS

<table>
<thead>
<tr>
<th>In SHAPE</th>
<th>HealthyTown</th>
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<tbody>
<tr>
<td>In SHAPE, a health improvement program for people with serious mental illness, pairs participants with a trained health mentor who empowers and motivates participants to develop and follow an individual health action plan. Evaluation of the pilot program showed participants increased activity levels and had reductions of waist circumference, in blood pressure, and in depressive symptoms. The program, now expanded, attributes success to the relationship with mentors and development of personalized plans that meet the needs and abilities of participants. Regular celebrations at which participants receive recognition for their efforts, and other incentives to build motivation and engagement among participants.</td>
<td>HealthyTown was a community-based effort that featured a broad array of health improvement efforts, including enhancing patient-provider communications, simplifying and streamlining consumer health materials, and leveraging the support of the entire community. A key finding from these initiatives was that leadership should come from within the community to increase credibility, trust, and rapport among the participants, and should include a broad representation of community stakeholders who would take responsibility for initiating change.</td>
</tr>
</tbody>
</table>
The program empowers participants to take ownership of their health. For example, program participants learn how to use medications properly. Additionally, all services are scheduled for the same clinic visit, which limits time- and transportation-related barriers.

Participants are motivated by results, such as improvements in HbA1C, blood pressure, and lipid parameters. The program, started in 1997, has been sustained and is still in place today.

School-based Population Health Improvement Programs

Establishing healthy habits in childhood can help prevent many chronic health problems later in life. Because these habits are formed early in life, schools can play an important role in improving the health of children. To define the problem, set goals, and measure success, school-based programs rely on public health information, student records and health data, and student body health- and behavior-related issues. Schools are located in communities that encompass every socioeconomic, racial, and ethnic group, and, therefore, can effectively reach many at-risk groups.

Like community-based programs, there is a wide range of school-based population health improvement programs. These programs may:

- Educate students about healthy nutrition. Schools are ideally suited for interventions that focus on healthy nutrition (e.g., healthier options in the cafeteria and in vending machines). Schools can employ nutrition strategies in the classroom, in health education classes, in the cafeteria, and in the home, by providing information to families on wellness behaviors.

For example, the Alliance for a Healthier Generation’s “Healthy School Framework” provides specific goals for schools, such as offering more nutritious options for meals and snacks; providing skill-based instruction on healthy eating and physical activity, and; incorporating opportunities for physical activity for students during the school day. As of September 2007, some 92 percent of all California schools participating in the program had made measureable progress in changing the health of their school environment.45

- Promote physical activity. School is an ideal place for children to learn about the benefits of physical activity, through physical education classes, recess, and after-school sports. These programs have the potential to change behavior both in school and outside of school. For instance, Hawaii’s “Fun 5” program increased active time during after-school programs, as well as significantly increased the amount of moderate physical activity children engaged in during leisure time away from the program.
• **Organize other prevention activities.** Schools can be instrumental in organizing annual health screenings for students, and measuring data on the student population that can be compared from year to year. For example, in 2003, Arkansas implemented an annual body mass index screening for all school-aged children, in conjunction with other wellness activities. Since its inception, the program has seen decreases in obesity and excessive weight among schoolchildren.46

• **Help school personnel and students manage chronic disease.** School staff members from teachers and administrators to school nurses and even coaches play an important role in helping students prevent and manage chronic diseases. School programs may, therefore, focus on training staff to identify and appropriately respond to students having asthma attacks, seizures, or other manifestations of a chronic condition. They may also focus on helping students understand and manage chronic illness, by teaching them, for example, to recognize the signs of an asthma attack and to manage it properly with medication.

Schools also benefit from examining their physical infrastructures and policies to help children manage conditions. For example, removing asthma triggers, or allowing students ready access to their medications can facilitate disease control.

Ultimately, these programs can lead to improved school attendance and student performance, fewer emergency room visits, and a healthier population with lower health care expenditures.

For example, Ridgefield Public Schools in Connecticut implemented the Environmental Protection Agency’s “Indoor Air Quality Tools for Schools” program. Since its implementation, the school has noted fewer teacher and staff health issues, fewer student visits to the school nurse for breathing difficulties, and a decline in absenteeism.47
Table 3. Essential Elements of Successful School-based Population Health Improvement Programs

<table>
<thead>
<tr>
<th>Essential Elements</th>
<th>Element Adapted for School-based Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define problem and program objective</td>
<td>Identify and clearly describe problem, program objective and target population based on individual school information, including student health and attendance records, student/family demographics, school facilities and resources, school curriculum, and staff-identified issues. Success is defined relevant to school's situation, and measurements of achievement are included in plans. Understanding pertinent legal requirements is critical.</td>
</tr>
<tr>
<td>Tailor program to the target population</td>
<td>Program and resources are focused on specific target populations and tailored to specific schools’ and populations’ needs. Interventions for children may involve students, parents, teachers, school nurses, other school staff, and health care providers.</td>
</tr>
<tr>
<td>Engage leadership</td>
<td>Engagement of the board of education, superintendent of schools, local health department, school principals, teachers, school nurses, parents, PTA, and others may all be required to champion the effort. Implementation may require policy changes and political leadership.</td>
</tr>
<tr>
<td>Coordinate among stakeholders and across settings</td>
<td>Program brings together families, teachers, school nurses, sports teams, administrators, clubs, and other staff members who interact with the target population and can help achieve program success. Stakeholders who interact with the target population need a clear understanding of their specific roles, progress made, and areas needing improvement.</td>
</tr>
<tr>
<td>Integrate throughout the organization or community</td>
<td>School staff, operations, classes, activities, facilities and publications all support and reflect the program. Integration may involve providing and encouraging healthy food choices, promoting physical activity, through health- and healthy behavior-related curriculum, and providing a supportive physical environment.</td>
</tr>
<tr>
<td>Empower target population</td>
<td>Program equips target population (e.g. students, teachers, school nurses) with age-appropriate and culturally-sensitive messages and tools, language-appropriate information and self-management tools, and removal of barriers to participation. The program may provide information, training and activities specific to the roles of parents, teachers, coaches, physicians or others who can assist the target population in participating or changing behavior.</td>
</tr>
<tr>
<td>Motivate target population</td>
<td>Program continually motivates the target population to participate, through incentives and rewards (e.g. recognition, gifts, celebrations, special privileges, or certification for personnel). School attendance awards, integration into health and other policies, and curriculum and health requirements may also motivate participation.</td>
</tr>
<tr>
<td>Sustain and institutionalize program</td>
<td>Program continues over time through consistent support, resource allocation, established standards, and modification to meet changing needs. Required policy changes are achieved. Activities and progress are regularly communicated.</td>
</tr>
<tr>
<td>Measure, evaluate and refine program</td>
<td>Program includes evaluation; assessment of gaps between outcomes and stated goals (such as improved attendance, decline in asthma attacks, higher activity levels); communication and celebration of success, and; revisions to improve outcomes, refine goals or meet changed needs.</td>
</tr>
</tbody>
</table>

Population Health Improvement
Examples of School-based Programs

The following example highlights some essential components at work in a successful school-based population health improvement program:

The Coronary Artery Risk Detection in Appalachian Communities (CARDIAC) project is a chronic disease risk-surveillance and intervention initiative designed to combat the high prevalence of heart disease and diabetes in West Virginia.

Engaged leaders, including state health officials, boards of education and the community-based West Virginia Rural Health Education Partnership, defined the problem after state-level public health data showed high rates of heart disease and diabetes among children in the state. School nurses screen for heart disease and diabetes risk factors among children in kindergarten, second grade and fifth grade. School staff and parents are also invited to be screened. West Virginia Health Sciences students (who have requirements for community-based training) help implement the screenings, alongside school nurses — an example of coordination among relevant stakeholders.

The program also empowers children and families with education on how to maintain a healthy lifestyle. The state and local schools measure and monitor trends using the collected data. Initially piloted in three rural counties, CARDIAC is now sustained through statewide implementation.

<table>
<thead>
<tr>
<th>Walking School Bus</th>
<th>Coordinated Approach to Child Health (CATCH)</th>
<th>Arkansas Assessment of Childhood and Adolescent Obesity</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Walking School Bus Program in Seattle is designed to encourage children to walk to school under the supervision of adults. Children who normally ride the bus can be dropped off several blocks from the school. The program involves school staff, parents, bus drivers, and other adults.</td>
<td>Recognized as a model program, CATCH focuses on physical activity and good nutrition among elementary and middle school children. It has been adopted in schools in 24 states. CATCH modified school lunches, increased physical activity in physical education classes, and improved nutrition and exercise habits in children during three school years.</td>
<td>Arkansas Gov. Mike Huckabee championed legislation to improve access to healthy foods in schools, and also to measure individual students' body mass indexes annually. Since the program was implemented, the percentage of overweight children in Arkansas has decreased.</td>
</tr>
</tbody>
</table>
A third group of interventions, known as health care system population health improvement programs, encompasses a variety of approaches, including those sponsored by government agencies, health plans, and providers.

**Government Programs**

Federal, state, and local government entities are involved in efforts to promote prevention and disease management activities, both to improve population health and to contain spiraling health care costs within government programs.

Using national health, entitlement program and health expenditure data, the U.S. Congress, the Centers for Medicare and Medicaid Services (CMS), state legislatures, and various other agencies, develop initiatives to combat chronic disease within government programs. Government has the tools — such as laws, regulations, payment methodologies, and contracts with providers — to require and set goals for prevention and chronic disease management activities, and the abilities to publicize results and realign incentives to promote broader adoption of those activities.

For example, Medicare is sponsoring a three-year group physician practice demonstration project aimed at improving health outcomes and lowering costs for beneficiaries with specific chronic conditions. Providers who achieve high-quality results, as well as savings above a threshold percentage, share in the savings to Medicare.

As a major purchaser of health care services through Medicare, Medicaid, the State Children’s Health Insurance Program (SCHIP), the Veteran’s Administration, the Bureau of Indian Affairs, and other public programs and agencies, the federal government can exercise its market influence to adopt and encourage a population health agenda. Federal policy plays an important role in increasing Medicare and Medicaid reimbursement rates to providers for such services as screenings, immunizations, and counseling. Moreover, because of the federal government’s large role with public health care programs, it wields a great deal of influence over private health care practices and coverage.

States also play a key role in population health management, both because they purchase health care services through Medicaid, SCHIP, and public employee health plans, and because they enact policies and pass legislation that can influence prevention and disease management practices. State governments are in an advantageous position to develop population health improvement strategies that target the specific needs of their states and cities. They are focused on the impact that chronic disease has on health care costs and, as a result, many state health departments and Medicaid agencies not only offer prevention programs geared toward
obesity, smoking, and physical activity, but they also provide disease management programs that focus on specific chronic diseases. To encourage healthy behaviors, some states even provide their government employees or Medicaid beneficiaries with a reduction in premiums or a reward if they participate in a health-risk assessment, or attain a personal health goal.48

In addition to their role as purchasers of health care, states can also pass legislation to improve health status and prevent illness and death due to chronic disease. For example, some states are involved in efforts to restrict or ban smoking in workplaces and other public areas to reduce exposure to secondhand smoke.49 Additionally, states and localities can influence the food served in schools by implementing dietary standards for meals and encouraging healthy vending machine choices on school campuses.50

Examples of Government Programs

The following examples highlight how some government-sponsored population health improvement programs make use of the identified essential components:

- **Community Care of North Carolina**

  is a model Medicaid population health improvement program. Medicaid officials defined the problem after identifying the rise in chronic disease among its beneficiaries — specifically asthma, diabetes, heart failure, and mental health problems — and rising costs among its aged, blind, and disabled populations. Engaged leaders implemented improved coordination of care for these beneficiaries by contracting with community health networks organized and operated by community physicians, hospitals, health departments, and departments of social services to provide medical homes for the Medicaid population.

  The network of stakeholders includes more than 3,000 physicians and local social services agencies. Each network utilizes information gathered both locally and through the state’s Medicaid claims system to assess the needs and severity of the conditions of local Medicaid enrollees, and develops tailored care and disease management initiatives for those enrollees at greatest risk.

  Through these care and disease management efforts, enrollees are empowered to improve their health outcomes. The program, which started in 2002, saves the North Carolina Medicaid program millions of dollars each year (e.g., more than $230 million dollars in 2004 — a savings of more than $32 per member per month) and has been sustained.

- **The Marshfield Clinic’s actions**, as part of the Medicare group physician practice demonstration, provide another example of a well-designed, government-related population health improvement program. Marshfield Clinic, a network of more than 40 Wisconsin clinics, instituted
### Table 4. Essential Elements of Successful Government-based Population Health Improvement Programs

<table>
<thead>
<tr>
<th>Essential Elements</th>
<th>Element Adapted for Government-based Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define problem and program objective</td>
<td>Identify and clearly describe program, program objective, and target population through health-risk assessments (managed care), claims and cost data, provider practice information (HEDIS, CAPH scores), predictive modeling, public health data, and member demographics. Measurement and success are based on data, standards, and benchmarks, including comparisons with control groups and predicted trends, when available.</td>
</tr>
<tr>
<td>Tailor program to the target population</td>
<td>Program and resources are focused on specific populations or entities (e.g., Medicaid or Medicare health plan), health care providers, or beneficiaries. Materials are relevant to the target, and provide culturally-competent, understandable, and actionable information.</td>
</tr>
<tr>
<td>Engage leadership</td>
<td>Champion could be governor, state Medicaid director, federal oversight agency (e.g., Centers for Medicare and Medicaid Services), health plan leadership, or providers. Engaged leadership’s influence within target population is critical.</td>
</tr>
<tr>
<td>Coordinate among stakeholders and across settings</td>
<td>Patient-centered care coordination is key and requires coordination among providers and public health agencies. Utilization of health information technology to share information eases care coordination.</td>
</tr>
<tr>
<td>Integrate throughout the organization or community</td>
<td>Health plan initiatives embed care management and prevention throughout their administrative, financial, clinical and outreach functions, and in contractual requirements for their provider networks. Medicaid agencies integrate initiatives in fee-for-service programs through coordination among providers, including hospital systems, public health clinics and others, pharmacy benefit programs, and disease management contractors.</td>
</tr>
<tr>
<td>Empower target population</td>
<td>Programs engage enrollee, providers, case managers, community agencies, and people significant to enrollee; develop disease self-management skills and promote behavior change through understanding and removal of barriers to change; provide culturally-sensitive education for providers and enrollees; foster use of appropriate care settings; provide high-value health care services, and remove barriers to their access. Technology supports these efforts. For providers, technology gives ready access to pertinent data and evidence-based guidelines, fosters care coordination, and assists in benchmarking.</td>
</tr>
<tr>
<td>Motivate target population</td>
<td>Programs provide rewards and/or penalties (e.g., lower copays, additional benefits, gift certificates) for obtaining preventive health screenings, keeping appointments, and complying with disease management programs. They may auto-enroll beneficiaries and require opt-out. Providers may be motivated through contractual requirements, pay-for-performance programs, and public recognition.</td>
</tr>
<tr>
<td>Sustain and institutionalize program</td>
<td>Program continuation may be based on legislation, regulation, waivers, and health plan and provider contracts. State may require ongoing reporting to monitor health results and cost impact.</td>
</tr>
<tr>
<td>Measure, evaluate and refine program</td>
<td>Programs include evaluation, assessment of gaps between outcomes and stated goals (e.g., reduced use/cost of emergency room visits, appropriate medication use or care according to guidelines) and revision to improve outcomes and refine goals.</td>
</tr>
</tbody>
</table>
a telephonic nurse case-management program to assist patients who are identified as not meeting clinical goals. The nurses have access to patients’ electronic medical records, doctors’ standing orders for the patient, patient education materials, and approved guidelines for treatment.

Nurses empower participants by providing disease education and information about dietary needs, and may even check in with patients daily to see how they are feeling and facilitate follow-up care, as needed.

Integrated throughout Marshfield Clinic, the program also provided computers to primary care physicians. Marshfield Clinic evaluates physician groups against a cumulative set of quality measures in diabetes, heart failure, hypertension, and prevention treatment.

Evaluation of the first year’s results showed better health outcomes for patients with diabetes and lower costs to Medicare, compared to a control group. Specifically, the number of hospitalizations among these patients decreased from 350 to 315 per 1,000 during the two-year period of the Medicare project. With 17,500 Marshfield Clinic patients living with diabetes, an estimated 770 fewer people needed hospitalizations annually. Through the results of the Marshfield Clinic and the University of Michigan Faculty Medical Group (another provider group that participated in the demonstration), Medicare saved $9 million in the first year — more than $200 per participant.51

Health Plans

Health plans are key players in the health care delivery system, and they interact with providers, health departments, schools, and employers. Health plans use a myriad of programs to improve the health of their members, including:

- Promoting provider adherence to evidence-based practice guidelines.

Many health plans have partnered with organizations to help promote clinical care protocols consistent with scientific evidence, and to educate physicians about guidelines that highlight evidence-based prevention and disease management. Aetna, for example, sends those providing primary care for patients with congestive heart failure information about its case management program, and posts the
• Providing incentives for prevention and disease management activities. Some health plans have implemented reimbursement strategies and financial incentives to encourage providers to focus on prevention and disease management activities, and to encourage health plan members to participate. Surveys of health plans published by the Leapfrog Group show that health plans adopt pay-for-performance strategies as a part of holistic efforts to improve the quality of care and to manage costs.53

• Encouraging healthy behavior at the individual level. Health plans provide tools and resources to help members improve their health. Health plans may offer programs that offer cash incentives or reduced premiums to members who are at risk for chronic disease, but who adopt healthy behaviors. For example, Health Partners of Minnesota sends pedometers to participants in its healthy weight initiative to track activity levels, and it enters participants’ activity and nutrition information into drawings for prizes.54

• Creating value-based benefit designs. Responding to the growing demand among employers, these benefit packages have been developed to eliminate or reduce consumer cost-sharing for preventive services and medications that treat chronic diseases. Plans are responding to the growing demand among employers for these offerings. According to Hewitt Associates, almost 19 percent of large companies offer value-based benefit design plans, and another 40 percent are interested in learning more about them.55

• Utilizing data to identify opportunities for disease management. Health plans aggregate data from health-risk assessments and claims, and use predictive modeling to determine which members may benefit from disease management and other evidence-based interventions to reduce risks. They target specific segments of members, conduct outreach, and enroll them in care management programs. For example, Blue Cross Blue Shield of Tennessee identified compliance issues among people with hepatitis C and implemented a comprehensive program that reduced costs by $1.6 million in one year.56

• Using health information technology. Health plans use information technology...
Table 5. Essential Elements of Successful Health Plan-based Population Health Improvement Programs

<table>
<thead>
<tr>
<th>Essential Elements</th>
<th>Element Adapted for Health Plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define problem and program objective</td>
<td>Identify and clearly describe program, program objective, and target population, based on health-risk assessments, claims/encounter data, predictive modeling, and plan sponsor (e.g., employer, union) needs, and usually focus on high-cost and/or prevalent conditions. Measurement and success are defined, based on data, standards, and benchmarks.</td>
</tr>
<tr>
<td>Tailor program to the target population</td>
<td>Program and resources target plan members with specific chronic diseases or risk factors for those diseases, or health care providers. Plan focuses interventions on factors causing negative health outcomes and high costs. Programs are adapted to meet unique needs of different populations within the health plan.</td>
</tr>
<tr>
<td>Engage leadership</td>
<td>Champion may be health plan administrator or medical leadership, or leadership within the plan sponsor (e.g., employer) who can drive the program, institutionalize it through policies and procedures, and commit resources.</td>
</tr>
<tr>
<td>Coordinate among stakeholders and across settings</td>
<td>Plan coordinates staff across all functions (e.g., enrollment, quality assurance, member services, utilization, and case management) at all levels and external stakeholders (e.g., network physicians, pharmacy benefit managers, care management vendors, members' families). The plan sponsor provides input, direction for program design and implementation, and internal coordination.</td>
</tr>
<tr>
<td>Integrate throughout the organization or community</td>
<td>Health plan integrates the program into benefit package design (e.g., no copay for preventive services, required health-risk assessments) across all functions and departments. Sets requirements for provider networks. Member and provider communications assist in driving the program internally.</td>
</tr>
<tr>
<td>Empower target population</td>
<td>Health plan provides members with disease management services, and tailors information about chronic disease, behavior change, and disease self-management, making it available through culturally-competent, health-literate materials. Plan offers health-lines or coaching for patients at risk, and promotes relationships with primary care providers and specialists. It removes barriers to high-value screenings and disease management services. For provider-focused programs, the plan makes practice, patient and cost data, and evidence-based guidelines available, fostering the use of health information technology. Also, the plan provides feedback to individual providers through profiling and benchmarking.</td>
</tr>
<tr>
<td>Motivate target population</td>
<td>Plan motivates the target population through incentives and removal of access barriers (e.g., lower copays for drugs that control chronic conditions and for preventive screenings, or reduced premiums for health improvement), reminders about disease management services, and rewards for completing health-risk assessments and engaging in healthy behaviors. Providers may be motivated through reimbursement levels, contractual requirements, pay-for-performance programs, and public recognition.</td>
</tr>
</tbody>
</table>
to engage members in managing their health, to identify trends among members, to encourage use of evidence-based services and guidelines in care provision, to evaluate performance, and to deploy other disease management efforts. For example, Kaiser Permanente offers members an online health management tool that allows patients to review test results, e-mail providers, order prescription refills, and schedule appointments.57

**Examples of Health Plan Programs**

The following example highlights how one successful health plan population health improvement program demonstrates the identified essential components:

**Aetna’s Chronic Heart Failure** program uses a risk stratification model to identify members with chronic diseases and stratify them according to severity levels. Stratification allows Aetna’s disease management staff to tailor services, such as education and related assistance for low-risk members and case management services for high-risk members. The intervention includes empowering members using several avenues, including providing journals, in which participants record such symptoms as shortness of breath or chest pain. The program also empowers participants through the use of health coaches, who provide members with information about congestive heart failure, help them follow treatment plans, and promote lifestyle changes such as smoking cessation and weight loss to improve health. The program also sends primary care physicians information about

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**Table 5. Essential Elements of Successful Health Plan Population Health Improvement Programs (continued)**

<table>
<thead>
<tr>
<th>Essential Elements</th>
<th>Element Adapted for Health Plans</th>
</tr>
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<tbody>
<tr>
<td>Sustain and institutionalize program</td>
<td>Health plan builds on program success, adapting it as member-related claims, health status, and program participation data suggest. Plan sponsor continues to include the program in the health plan’s benefit package.</td>
</tr>
<tr>
<td>Measure, evaluate and refine program</td>
<td>Plan measures member participation, changes in health outcomes and costs, provider practices, and patient impact, and assesses the gaps between outcomes and stated goals (e.g., diabetes medication compliance, rate of mammography screening, cost trends). The plan uses the results to change the program to meet its goals. Plans benchmark results against other plans, and adjust to deliver value and remain competitive.</td>
</tr>
</tbody>
</table>
the program and posts clinical practice guidelines for chronic heart failure on the health plan’s physician Web site. The initiative is continually evaluated using information from Aetna’s medical, dental, laboratory, pharmacy, and group/life claims data warehouses.

**Provider Interventions**

Hospitals, physicians, nurses, physician assistants, pharmacists, and others are instrumental in delivering preventive services, encouraging healthy behaviors and treatment compliance in their patient populations, and providing disease and care management. Engaged providers can influence health status, health care costs, and the use of appropriate health care services and settings. Among the services that various provider programs offer are:

- **Care Coordination.** People with chronic disease, especially those with multiple chronic conditions, may regularly visit multiple specialists, a general practitioner, and other clinical staff, such as therapists. They may also require referral to community-based assistance programs, such as those providing social services or transportation. A central provider can help establish a “health care home,” by coordinating care and providing care management to ensure that the individual’s needs are met without duplication or contradiction.

For example, in the APN Transitional Care Model, advance practice nurses work with a patient’s care team to develop a hospital...
discharge plan before a patient leaves the hospital, and then helps to implement it upon the patient’s discharge. Greater communication among providers and health care agencies, along with improved patient and caregiver education, reduced the number of readmissions, lengthened the time between readmissions, and resulted in shorter stays and patient higher satisfaction. In a four-year trial involving elderly patients with heart failure, the program saved Medicare $500,000 in hospitalization costs.

- **Counseling on tobacco cessation and active living.** Literature suggests that providers should screen all patients for tobacco use and suggest effective treatments. Providers can help patients stop smoking through counseling and smoking cessation treatments. Additionally, counseling adult smokers can be cost effective; a recent study found that counseling smokers about quitting saves approximately $500 per smoker counseled.\(^58\) Similarly, a recent survey showed that two-thirds of patients would be more interested in exercising to stay healthy if they were advised by their doctors and given additional resources.\(^59\)

Mercy Memorial Hospital System in Monroe, Mich., offered community residents a smoking cessation program that incorporated counseling and medication. By counseling patients to develop a new response to their individual smoking triggers, hospital staff helped hundreds of people stop smoking.\(^60\)

- **Encouragement to follow recommended screening guidelines.** Research also suggests that providers can increase the number of patients receiving recommended screenings, such as mammograms and cervical cancer screenings, by reminding patients through letters, postcards, or phone calls.\(^61\) Making screenings readily available also increases participation.

In its Dare to C.A.R.E. program, University Hospitals Bedford Medical Center in Bedford, Ohio, has provided free vascular disease screenings to more than 10,000 people at risk in the community. More than half of those screened had some clinical pathology for cardiovascular disease, including 2 to 3 percent whose clinical pathology was critical enough to require immediate medical attention.\(^62\)

- **Enhanced patient management through health information technology.** In clinics and provider networks, providers can develop systems that ease coordination of care, by allowing providers to have access to information about an individual’s other treatments.
## Table 6. Essential Elements of Successful Provider-based Population Health Improvement Programs

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Define problem and program objective</td>
<td>Program’s target population is determined by data on provider/health system/clinic patient population. Program bases definitions of success on target patient populations’ adherence to treatment and their clinical health outcomes, as well as health professionals’ provision of evidence-based care.</td>
</tr>
<tr>
<td>Tailor program to the target population</td>
<td>Program targets both patients with chronic diseases and the providers who treat them. Clinical intervention includes identifying target patients, and implementing new treatment protocols and strategies for patient education. Program develops strategies to overcome barriers to success, such as low treatment adherence and low health literacy among patients, and to resolve reimbursement and care coordination issues for providers.</td>
</tr>
<tr>
<td>Engage leadership</td>
<td>Leader may be provider/health system/clinic leaders or payers. Leaders allocate funding and provide training and education to participating providers. Engagement and participation of providers is critical.</td>
</tr>
<tr>
<td>Coordinate among stakeholders and across settings</td>
<td>Program encourages patient-centered coordination across various providers within the system to ensure that providers are aware of the full range of care the patient receives. Program is coordinated among specialists, primary care providers, office staff, nurses, pharmacists, and other members of the care team. Use of health information technology facilitates coordination.</td>
</tr>
<tr>
<td>Integrate throughout the organization or community</td>
<td>Staff members who interact with patients are engaged in program and trained to provide needed support. Understanding of patient needs and recommended care is shared and supported by providers.</td>
</tr>
<tr>
<td>Empower target population</td>
<td>Providers are empowered with access to easy-to-use technology that informs treatment decisions (e.g., hand-held devices that can display potential drug interactions, evidence-based guidelines, and chart-reminders to facilitate guideline compliance). Technology can also be employed to provide access to participants’ electronic health records, so providers are aware of a participant’s full range of treatments.</td>
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<tr>
<td>Motivate target population</td>
<td>Program uses reimbursement and other financial incentives (e.g., pay-for-performance), and recognition among peer providers (e.g., report cards or rankings showing management of chronic disease in each provider’s patient population). Program may also use requirements and mandates.</td>
</tr>
<tr>
<td>Sustain and institutionalize program</td>
<td>By improving health status for participants, new treatment protocols become adopted and institutionalized. Infrastructure supports patient-centered care, and adoption and application of new medical technology.</td>
</tr>
<tr>
<td>Measure, evaluate and refine program</td>
<td>Evaluation results drive modifications to the program for some or all participants. Results are used to inform program changes. Programs are adapted to reflect the advances in medical technology and knowledge.</td>
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</table>
For example, Hudson River Healthcare, a federally-qualified health center, provides all patients with electronic health records that facilitate open scheduling, help coordinate services, and provide high-quality care to medically underserved communities in the Hudson Valley. In addition to being used on an individual basis, health information technology data can also be used to identify trends in chronic disease prevalence across a provider’s patient population or to indicate how providers compare with each other.

Example of Health Care Provider Programs

The following example highlights how a provider-focused population health improvement program includes essential components, although the approach in this example is not an intervention:

Researchers at the Mayo Clinic have implemented a coordinated approach to improve patient care. The method includes integrating specialties and developing a culture that attracts physicians with an interest in patient-focused care. The model empowers physicians, by ensuring that they are educated about the latest clinical practice guidelines. And, physicians maintain one electronic record for each patient, which means every provider is working from, adding to, and repeatedly peer-reviewing the same set of information. Information on the patient’s treatment is shared with the patient’s primary care provider if that provider is not at the Mayo Clinic. This program has been sustained and continually refined since the clinic opened. The Dartmouth Atlas Medicare study showed that the Mayo Clinic provides better quality at a lower cost than many other hospitals that serve Medicare patients.63

Employers understand the effects of chronic disease not only on the health of their employees, but also on their ability to achieve business goals. Concerned with rising coverage costs, employers are doing more to identify the drivers of those costs, and are integrating health improvement strategies into benefits packages through participation incentives, onsite offerings, and work processes. They recognize that health improvement programs can lower absenteeism and “presenteeism,” reduce health care costs, and improve productivity and the bottom line. They are also in a position to measure health care costs, absenteeism, productivity, and other data that captures the range of effectiveness of that health improvement programs can provide. Some researchers, including Ron Goetzel at Emory University, have developed a body of
### Table 7. Essential Elements of Successful Workplace-based Population Health Improvement Programs

<table>
<thead>
<tr>
<th>Essential Elements</th>
<th>Element Adapted for Workplaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define problem and program objective</td>
<td>Program, program objectives, and target population are determined by largest direct (health-related) and indirect (productivity-related) cost drivers to the organizations, and the proportion and direction of trends. Program uses data from health-risk assessments, employee surveys, absentee and productivity information, and claims data. Program design is consistent with the employer’s business goals. Employer defines success measures, such as reduced health expenditures and absenteeism.</td>
</tr>
<tr>
<td>Tailor program to the target population</td>
<td>Program focuses interventions, messages, and health promotion activities on those factors that cause negative health outcomes. Employer facilitates participation of target population, and considers involving employees’ families and other influencers of employee behavior. Target population may also include dependents, retirees, and providers of services to people covered.</td>
</tr>
<tr>
<td>Engage leadership</td>
<td>Leaders from different segments of the organization are engaged in the program, and incorporate aspects of it as a part of regular business practices. Leaders are visible participants in health-related activities.</td>
</tr>
<tr>
<td>Coordinate among stakeholders and across settings</td>
<td>Program brings together management, human resources, food service, facilities, communications, and union personnel to participate in program, and support its design, implementation, and employee participation. Open, regular communication about the program, its purpose, objectives, and results aid coordination and achievement of objectives. External stakeholders — such as health benefits vendors, retirees, and employees’ families — are often engaged.</td>
</tr>
<tr>
<td>Integrate throughout the organization or community</td>
<td>Program permeates company operations, including activities, cafeteria menus, communication, personnel policies, benefits, and physical plant design. The program and its objectives are embedded into regular business practices.</td>
</tr>
<tr>
<td>Empower target population</td>
<td>Continually provide education and knowledge about how personal behavior affects health and influences health care costs; equip staff with tools they need to participate (e.g., onsite gym, healthy cafeteria food, onsite health screenings) and facilitate access to these tools (e.g., training for Web-based applications).</td>
</tr>
<tr>
<td>Motivate target population</td>
<td>Program rewards employee participation (e.g., financial incentives for achieving and sustaining milestones; health insurance with zero copays for preventive services and medications; employee recognition; free health coaching). It may require policy changes, such as making facilities smoke-free. Program must meet any legal requirements.</td>
</tr>
<tr>
<td>Sustain and institutionalize program</td>
<td>Program is structured to withstand leadership changes and staff turnover. Program changes as the initiative evolves. Milestones are visibly recognized and communicated on a regular basis.</td>
</tr>
<tr>
<td>Measure, evaluate and refine program</td>
<td>Program uses employee health claims, health expenditure, and other data (e.g., absentee rates, staff turnover, productivity, workers’ compensation claims) to evaluate its effectiveness, assess gaps between outcomes and goals, and make modifications. Success is shared and celebrated; challenges are noted, and; stakeholders are engaged.</td>
</tr>
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</table>
literature identifying and analyzing effective workplace programs.\textsuperscript{64}

Workplace programs commonly include at-work screenings, encouraging physical activity and smoking cessation, providing healthier food choices, and supporting employees’ mental well-being and stress management. The focus for more targeted efforts is identified through employee health risk assessments and claims data, company health care expenditures, and employee records.

Employers and workplaces implement a myriad of programs, including ones that:

- **Promote physical activity and healthy eating.** Since both diet and exercise affect many chronic conditions, employers implement strategies that encourage good nutrition and physical activity; they may develop healthy cafeteria menus, encourage the use of stairs, create walking paths and walking clubs, or provide access to gyms or sports clubs.

For example, the city of Farmers Branch, Texas, (population 20,000) developed “Hip-Hop to Wellness,” a program that encourages city employees to become more active. Employees who completed an online health-risk assessment, participated in three free health screenings provided by the city, received a preventive physical exam, and participated in four Hip-Hop events received a free yearlong membership to the local recreation center. After the first year, the city’s insurance renewal cost dropped from 15 percent to 8.5.

- **Incorporate wellness in health benefits packages and offer incentives.** Some employers incorporate incentives for healthy behavior in their health benefits packages. For example, they offer health plans with no or nominal employee cost for preventive services, or reduced premiums for employees who complete smoking cessation or weight loss programs. Programs and other benefits that promote stress management and mental well-being are often made available, too. Literature
suggests that even while preventive services may provide significant health benefits for employees, financial barriers (e.g., high copayments, out-of-pocket expenses) may stop patients from seeking preventive services. Both Safeway Inc. (205,000 employees) and the Buffalo Supply Company (21 employees) cover 100 percent of the cost of preventive care.

Examples of Workplace Programs

The following example highlights how successful workplace population health improvement programs can make use of the identified essential components:

USAA’s “Take Care of Your Health” program is a model workplace program. USAA uses an integrated approach to wellness, encompassing more than 20 unique wellness initiatives and activities, ranging from onsite fitness centers and healthy food choices in cafeterias to integrated disability management and health-risk assessments. USAA’s wellness program instituted a cross-company team of partners and stakeholders, including those from fitness, food services, corporate safety, and corporate communications. This team, referred to as the “USAA Wellness Council,” meets regularly to strategize, plan, and review program results.

Results are collected via a customized data warehouse, which pulls together the full spectrum of employee health and wellness information by capturing demographic data, population health consumption data, health and wellness participation data, and

- Offer onsite, telephonic, or compensated time for screening, wellness activities, and disease management. Employers may have an onsite health facility, bring in professionals to conduct screenings, offer flu shots, or provide health coaching. Many provide health lines through their health benefits vendors, where nurses answer employees’ health questions and provide advice 24 hours a day.

For example, DonahueFavret Contractors, Inc., allows its 55 employees to earn additional time off by participating in wellness programs and covers the cost of smoking cessation programs while giving employees paid time off to attend. This and other benefits allowed DonahueFavret a 75 percent decline in health care utilization in 2005-06, and no premium increases in 2006-07.
The Asheville Project
Employees of the city of Asheville, N.C., were provided intensive education through the Mission-St. Joseph’s Diabetes Health Education Center. Participants were partnered with community pharmacists, who managed medication adherence. Employees, retirees, and other dependents with diabetes experienced improved HbA1C levels, lower health-related costs, increased productivity, and increased satisfaction with pharmacists.

IBM
IBM offers employees a comprehensive health and wellness program that promotes employee engagement in health-risk assessments, exercise and nutrition programs through rebates; employs targeted disease management programs, and; tracks performance milestones. Improved health-risk levels contributed up to $20 million in savings in 2005 by reducing emergency room visits, hospital admissions, and medical and pharmacy costs.

Data analysis provides ongoing opportunities to fine-tune all wellness initiatives and benefits programs in order to continually improve the health of employees and their families. The program garnered sustained funding because of savings accrued from the disease management and wellness initiatives.
“We spend 90 percent of $2 trillion (that’s 16 percent of the gross national product) on getting people well after they get sick — less than 10 percent of the money keeping you out of the hospital, out of the nursing home. Does anybody in America think that’s a smart idea?”

— Tommy Thompson, former secretary, U.S. Department of Health & Human Services; former Wisconsin Governor

Chronic diseases create a significant burden on quality of life, productivity, and the cost of health care. Prevention and health improvement initiatives can contribute to changing unhealthy behaviors, improving health, and mitigating costs. Health improvement initiatives reach people through a variety of settings — where they work, where they live, where they study — and within the health care system itself. Across these settings, effective programs appear to share a set of common essential elements attributable to their success. Because successful population health improvement efforts require tailoring to meet the unique opportunities and challenges they are designed to address, there is no template for program design that works for all settings or circumstances. Understanding the essential elements of successful programs, however, can help in developing effective population health improvement initiatives.
Catalog of programs

A catalog of examples of population health improvement programs accompanies this document. The catalog is the result of collaborative efforts led by the Lewin Group with the partners and staff of the Partnership to Fight Chronic Disease. The catalog is not exhaustive, but is intended to illustrate types of programs, and show how they can be sponsored and constructed, and which programs work and why. The catalog also seeks to spark interest in and ideas for preventing and managing chronic disease.

The catalog provides examples of programs based in communities, schools, the health system, and workplaces. It divides the programs into Programs That Work, Programs with Promise, and Programs to Watch. Programs that Work have demonstrated results and sustainability by operating for more than three years. Programs with Promise appear to be effective, but may have not yet shown results or been in existence for more than three years. Programs to Watch are examples of interesting or innovative approaches to population health improvement that did not have sufficient data available to allow an evaluation of their overall effect.


Centers for Disease Control and Prevention. *op. cit.*


56 PDFs/Innovations_InCC_07.pdf (accessed 29 April 2008).


65 National Business Group on Health, Preventing Chronic Disease.
Essential Elements of Successful Programs

www.fightchronicdisease.org/promisingpractices
info@fightchronicdisease.org