



PARTNERSHIP TO FIGHT  
CHRONIC DISEASE

POLICY  
PLATFORM  
SEPTEMBER 2007

## **About the Partnership to Fight Chronic Disease:**

The Partnership to Fight Chronic Disease (PFCD) is a national coalition of more than 80 patient, provider, and community organizations, business and labor groups, and health policy experts committed to raising awareness of the number one cause of death, disability, and rising health care costs in the U.S.: rising rates of preventable and treatable chronic diseases.

## **About This Platform:**

The PFCD believes that rising rates of chronic health problems pose a significant and unsustainable burden on the U.S. health care system, and that the viability and strength of the system—presently and in the future—relies on a willingness to enact policies that help Americans better prevent and manage chronic illnesses. It is our hope that this platform will help to focus our nation's leaders—including the 2008 presidential candidates—on the crisis of chronic disease and highlight common-sense reforms that will help the nation to address this challenge.

## Facing the “Unhealthy Truth” of Chronic Disease

Americans have made it clear that health care is *the* domestic issue that they want their next president to pay attention to.<sup>1</sup> In particular, they want to know what the nation’s next leader will do to make health care more affordable. **While presidential candidates have a wide variety of options to consider, no single option will have as overwhelming an impact as addressing the growing crisis of chronic disease.**

The “unhealthy truth” is that chronic diseases—long-lasting, often preventable and treatable illnesses such as diabetes, heart disease, cancer, and depression—are the #1 cause of death and disability in the U.S., and the #1 driver of rising health care costs.

- **More Americans are affected by chronic diseases than voted in the last presidential election.** Almost half (45 percent) of the population (133 million Americans) has at least one chronic disease.<sup>2</sup> Chronic diseases are responsible for seven out of every 10 deaths in the U.S., killing more than 1.7 million Americans every year.<sup>3</sup>
- **75 cents of every dollar spent on health care in the U.S. is spent on patients with chronic diseases.**<sup>4</sup> In 2005, this amounted to \$1.5 trillion of the \$2 trillion spent on health care.<sup>5</sup> In public programs, patients with chronic diseases constitute an even higher portion of total spending: about 83 percent in Medicaid and 96 percent in Medicare.<sup>6</sup>
- **About two-thirds of the rise in health care spending over the past two decades is due to the rise in the prevalence of treated rates of chronic disease.**<sup>7</sup> Much of this spending could be prevented. For instance, the doubling of obesity rates alone accounted for nearly 30 percent of the rise in health care spending over that time.<sup>8</sup>

**While chronic disease exacts a huge toll on Americans today, the future is even more troubling.** Chronic diseases are affecting more and more Americans at younger and younger ages. In fact, the Centers for Disease Control and Prevention (CDC) predicts that **one in three of our nation’s second graders will develop diabetes over the course of their lifetimes.**<sup>9</sup> Those who do are expected to have a lower life expectancy than their parents – an astounding fact given the substantial health resources and technological advantages available to this younger generation.

**The end is nowhere in sight.**

**Why? Unfortunately, all those with a stake in Americans’ health—the government, the private sector, health care and social institutions, and we as individuals—have not yet effectively worked together to educate, motivate, and empower Americans to lead healthy, active lives and appropriately prevent, detect, and treat chronic diseases.**

**The good news is there is time and opportunity to make change.** While not all chronic diseases are preventable, many—including some of the most common and costly conditions—are. The CDC estimates 80 percent of heart disease and stroke, 80 percent of type 2 diabetes, and 40 percent of cancer could be prevented if Americans were to do three things: stop

smoking, develop healthy eating habits, and get in shape.<sup>10</sup> The vast majority (85 percent) of cases of Chronic Obstructive Pulmonary Disease (COPD) could be prevented by not smoking.<sup>11</sup> Management of chronic diseases could also be significantly improved, as chronically ill Americans receive only about half (56 percent) of the clinically recommended preventive services.<sup>12</sup>

**Better prevention and management of common chronic diseases and related conditions could save billions of dollars.** To get a handle on health care costs and make health insurance more affordable, we must get a handle on chronic disease. No matter what approach one advocates to finance health care—be it public or private, or some combination thereof—none will work without a coordinated, comprehensive approach to address this issue. In addition to the clear health benefits, the economic benefit to society-at-large is significant. Even modest improvements can make a big difference. Consider what would happen if the U.S. took comprehensive action to address obesity—a key precursor of many chronic diseases. **If the prevalence of obesity was the same today as in 1987, health care spending in the U.S. would be 10 percent lower per person—about \$200 billion less.**<sup>13</sup>

**To create a healthier future for all Americans, we must refocus our health system on preventing, detecting, and managing chronic disease.** In an era when we have the knowledge and expertise to prevent disease and to better treat chronic conditions, it simply doesn't make sense to have a "1960s" model health care system built around episodic and acute care—a system that, for instance, will pay to amputate a leg or perform open heart surgery but too often fails to provide preventive care and disease management that could prevent much more costly interventions down the road.

**If we want to address both affordability and quality of health care, it's time to rethink the way we do business: We don't need to spend more, we need to spend smarter.** We need to strive for excellence both in preventing illness, stopping problems early, *and* in caring for those who become acutely ill. While improving chronic care and prevention is not free, it has the potential to make health care more affordable and free up needed resources to provide world-class care to those who do become acutely ill. And by ensuring that we are actively managing disease, we can help to limit "unpredictable" and "catastrophic" events that make health care more expensive.

**Americans can no longer afford a "sick" care system. We deserve a health care system that lives up to its name;** one that encourages and incents all of us—individuals, providers, and payers alike—to prevent disease *before* it occurs, so that no more of our fellow Americans lose their lives to preventable and mismanaged chronic disease.

## Improving Americans' Ability to Fight Chronic Disease

To improve Americans' ability to fight chronic disease and control costs in the U.S. health care system, we advocate a common-sense course of action that:

- **Prioritizes Prevention and Chronic Care Management.** The health care system needs to be modernized so that incentives are aligned to encourage health care payers, employers, providers, and individuals to better prevent, detect, and treat chronic diseases—both physical and mental—before they become an acute problem.
- **Encourages Continuous Improvements in Health Care Delivery and Quality of Care.** Health care reform must be built around generating continuous enhancements in health care quality and outcomes, and innovations in clinical practices and technology, so Americans have the best chance of fighting chronic diseases today and tomorrow.
- **Improves Access to Quality Health Care.** To put Americans in the best position to effectively and efficiently prevent and manage chronic disease, every American must have access to quality health care.
- **Focuses on Promoting Prevention Across Generations.** Younger Americans are suffering from preventable chronic diseases at higher rates than their parents did at the same age and thus, focusing on this population must be a priority. But older Americans—baby boomers and the elderly—can also benefit substantially from preventive care and better management of disease.
- **Translates Knowledge Into Action.** While we still have a lot to learn about how to effectively promote wellness and improve disease prevention and management, we already have some good information about what works and what we need to do. We must act on this knowledge to drive positive change. We must also build on this base of understanding by making research into “best practices” in disease prevention and management across diseases, settings, and populations a priority.

**To this end, the Partnership to Fight Chronic Disease proposes the following public policy recommendations to focus our nation's leaders—including the 2008 presidential candidates—on the crisis of chronic disease and highlight common-sense reforms that will help the nation to address this challenge:**

- **Advance sustainable “Next Generation” chronic disease prevention, early intervention, and management models throughout the health care system and public health infrastructure**
- **Promote healthy lifestyles and disease prevention and management in every community**
- **Encourage and reward continuous advances in clinical practice and research that improve the quality of care for those with prevalent and costly chronic diseases**
- **Accelerate improvements in the quality and availability of health information technology (HIT) throughout the health care system**
- **Reduce health disparities by focusing on barriers to good health**

## **POLICY RECOMMENDATION:**

### **Advance sustainable “Next Generation” chronic disease prevention, early intervention, and management models throughout the health care system and public health infrastructure**

#### **Background:**

As counterintuitive as it sounds, health is not always the highest priority in the current health care system. More often than not, delivery and payment is built around treating illness and responding to health problems only when they have become acute. Promotion of health and physical and mental wellbeing is not routinely practiced because it is not routinely rewarded. Yet, prevention and management of chronic disease are integral to the sustainability of our health care system’s financing, not to mention the quality of patients’ care, health, and lives.

Right now, there are far too many “missed opportunities”:

- While there is some good news that rates of screening among the Medicare population have increased over time, with majorities of female beneficiaries receiving individual screening services such as pap smears (72 percent) and mammograms (75 percent), the data also show that few beneficiaries receive comprehensive screening for multiple conditions. For instance, according to a General Accounting Office (GAO) study,<sup>14</sup> only 10 percent of female Medicare beneficiaries are screened for cervical, breast, and colon cancer and are immunized against influenza and pneumonia. As for male beneficiaries, just 27 percent receive colorectal screening and are immunized against influenza and pneumonia.
- Heart disease is the #1 killer of women and stroke is the #3 killer of women, yet 90 percent of primary care physicians don’t know that heart disease kills more women each year than men, and women are less likely to receive certain diagnostic testing and treatments. Relatively little funding is targeted at prevention or research.<sup>15</sup>
- Increased use of just five preventive services—colorectal and breast cancer screening, taking Aspirin everyday, getting flu shots, and quitting smoking—would save more than 100,000 lives every year in the United States.<sup>16</sup>
- By reducing smoking rates by just one percent, there would be more than 2 million fewer smokers, which would save \$655.9 million from fewer smoking-caused heart attacks and strokes in just five years. The projected long-term health savings for a one percentage point decline in smokers is \$16.7 billion.<sup>17</sup>

The nation simply cannot afford to continue down the path of “business as usual.” As the nearly 80 million baby boomers near retirement, the public health care system will face tremendous strain to accommodate a growing population of patients in need, many of whom have greater health needs than previous generations.<sup>18</sup> In public and private programs alike, costs are rising as more Americans develop chronic conditions that require long-term and costly treatments and interventions.

## **Ideas for Change:**

To make improvements, we need systemic changes in how we deliver and pay for health care. The current model is outdated and poorly suited to prevent disease and provide best-value health care for those with multiple chronic conditions. Incorporating population-based health programs in which clinicians are responsible for the use of health care services and outcomes of all members of a targeted group (*e.g.*, patients in a health plan) not just those who may seek treatment represents a step forward into new and innovative “next generation” models of care management, and a true opportunity for quality and cost improvements in the system.

To make change, we can:

### ✓ **Offer access to comprehensive prevention, early detection and intervention, and disease management resources in public and private health plans**

As a major purchaser of health care services, federal and state governments should ensure that prevention and disease management become routine in public programs. Private purchasers of health care can also help shape insurance benefits to bring about positive change.

To begin this process, we can:

- Assure that Medicare beneficiaries--the population that tends to suffer from the most chronic conditions--receive effective coordinated care by building on existing demonstration and pilot programs, such as Medicare Health Support (MHS).
  - For instance, the MHS pilot--Medicare's first population health improvement program--provides and coordinates care to meet the health care and humanistic needs of a population with greater than average health care needs. MHS is providing comprehensive, health care team-based care coordination services to more than 100,000 fee-for-service beneficiaries with diabetes and/or congestive heart failure who, on average, have 9 co-morbid (*i.e.*, chronic) conditions, see 11 doctors and specialists, and take 18 medications daily.
- Task the Centers for Disease Control and Prevention (CDC), the Institute of Medicine, and other agencies within the Dept. of Health and Human Services (HHS) to identify evidence-based prevention and care management interventions of proven value.
  - CDC has been a leader in the fight against chronic disease. Adequate support should be given to CDC and other agencies to allow them to fund and disseminate research on evidence about those interventions that have proven most successful in promoting healthy lifestyles and preventing and managing disease.<sup>19</sup>
- Disseminate this evidence to patients and their families, practitioners, communities, and public and private payers. Use research findings to build more effective interventions and benefit designs, including in Medicare and the Federal Employees Health Benefits Program (FEHBP).

- Work with states, private health plans, providers, and other stakeholders to find ways to quickly diffuse these models.

✓ **Facilitate and reward the provision of quality preventive care and care management**

Our nation’s primary health care providers—physicians, nurses, pharmacists, and other clinicians—are instrumental in delivering preventive services and encouraging healthy behaviors in patients. Unfortunately, the health care system is not organized in a way that fully supports them.

This is starting to change as the benefits of prevention and disease management become more widely recognized. For example, selected providers and large group practices are taking action.

- Physicians working at The Marshfield Clinic are now paid based on the quality of care they provide for common chronic illnesses such as heart disease and diabetes. For providing quality care, they earn up to 80 percent of the Medicare savings that resulted from their treatment. Early results from the study show a 50 percent increase in electronically documented foot exams for diabetics and a 29 percent decrease in hospitalizations.<sup>20</sup>

Some health plans are also making positive changes. For instance, some have:

- Implemented reimbursement strategies and financial incentives to encourage providers to focus more attention on prevention-related activities
- Educated providers and promoted clinical care protocols consistent with scientific evidence on prevention and disease management<sup>21</sup>
- Formed partnerships to offer web-based education, communication strategies, and reference tools that provide providers with quick access to expert guidelines for evaluating risk factors for chronic diseases<sup>22</sup>

Unfortunately, such programs are still the exception and not the rule. Similar models employed throughout the system could result in significant savings for all Americans.

✓ **Promote proven approaches to greater coordination of care and integrate the primary care provider more completely into the care management process to increase quality and efficiency**

When it comes to treatment and prevention of chronic illness, coordination, continuity of care, and care management are of paramount importance as they can help to facilitate the U.S. health system’s transition from an acute care, post-crisis model to one that is focused on prevention and early management of disease. Embracing care coordination arrangements has the potential to significantly improve the delivery of chronic and acute care and reduce errors and wasteful spending in the U.S. health system, as well as reduce disparities in care.

Three primary models exist for care coordination:

- The chronic care (or medical home) model



- The disease management model
- The physician group practice demonstration model

These models focus on integrating a fully-connected health care team and information technology components to improve communication among providers and improve patient understanding of health care conditions and adherence to care plans. These models seek to improve health care outcomes and reduce health care costs.

- MedPAC's June 2006 report outlines the key components of these care models and includes descriptions of the roles of key members of the health care team, including the beneficiary. Importantly, MedPAC concludes that care coordination, regardless of which model is utilized, has the potential to improve value in the Medicare program.
- The IMPACT model for Collaborative Depression Care, the largest controlled trial of disease management for depression, was more than twice as effective as usual care for depression in a wide range of primary care settings. The collaborative care program lowered the incidence of depression for different populations (*e.g.*, African Americans and Latinos, arthritis patients, patients with diabetes) while also lowering total health care costs over two years.<sup>23,24,25,26</sup>

✓ **Encourage Americans to be proactive about preventing, detecting, and managing chronic disease through education and targeted incentives, such as no or low cost-sharing on clinically-recommended preventive care**

A critical aspect of chronic disease prevention, detection, and management is engaging patients more directly in their own care. Right now, many Americans do not have the information, resources, or motivation needed to appropriately prevent and manage their conditions. Nearly half of all American adults—90 million people—have difficulty understanding and using health information, according to a report by the Institute of Medicine.<sup>27</sup> This problem, known as “low health literacy,” is associated with poorer health outcomes and higher use of health care services.

Improving Americans’ health literacy through patient education and support is critical to the fight against chronic diseases, as it can:

- Assist patients to choose a healthy diet, exercise, quit smoking, adhere to prescriptions, and ultimately become a better health care consumer
- Offer support from care managers such as physicians, pharmacists, nurse practitioners, or medical social workers to help patients improve their health
- Help patients set goals, make informed choices, and overcome barriers in care

Some effective chronic disease prevention programs engage patients through educational classes and activities and teach important self-management interventions, such as self-monitoring and healthy lifestyle changes.

- One successful school-based program combines school nutrition, physical education, classroom-based curricula, and at-home activities to encourage healthy behaviors.<sup>28</sup>

- Another successful program, which focuses on the Latin population and offers classes in Spanish, employs community health promoters that provide individuals with information they need to more effectively manage their own diseases.<sup>29</sup>

While education is fundamental to improvement in these areas, research has shown that incentives that directly affect consumer health care costs, such as discounts on insurance premiums for completing health risk assessments, participating in smoking cessation programs, or gym membership reimbursements, can also impact the likelihood that patients engage in healthy behaviors and in appropriate prevention and management of disease.<sup>30</sup> Such incentives have also been shown to have the potential to reduce overall health spending, as they help to ensure disease is better managed and thus less severe.

Some employers have begun to offer incentives to members who practice healthy behaviors, since financial barriers to receiving preventive services have been shown to prevent patients from seeking care.<sup>31</sup> Some employers are:

- Implementing programs that offer cash incentives or reduced premiums to employees who work toward adopting healthy behaviors
- Encouraging their employees to use preventive services by either covering those benefits in full or with nominal co-payments

The Asheville Project provides an important example of a sustainable, scalable program that reduced costs and improved management of chronic disease through a chronic care model employing self-management techniques and reductions in cost-sharing. The City of Asheville, North Carolina, a self-insured employer, partnered with the American Pharmacists Association (APhA) Foundation to provide education and personal oversight to employees with chronic diseases such as diabetes, asthma, hypertension, and high cholesterol. Co-payments on care for these chronic conditions were reduced to zero. Employees with chronic diseases learned to better manage their conditions, resulting in significant health improvements and cost savings for the employer: more than \$2,000 per year per enrolled patient and a 50 percent reduction in absenteeism.<sup>32</sup> The APhA Foundation is working to replicate this success using the Asheville model in ten other regions throughout the country.

### ✓ **Improve support for those with family caregiving responsibilities**

At some point in their lives, the majority of Americans will act as a caregiver for a family member or friend with a chronic illness or disability. In any given year, more than 50 million Americans find themselves doing just that.<sup>33</sup> Contrary to popular opinion, family caregivers—and not paid professionals and paraprofessionals—provide the vast majority (80 percent) of all long-term care services for those with a chronic illness or disability.<sup>34</sup> Almost one in five (17 percent) family caregivers provide 40 hours of care a week or more.<sup>35</sup>

The value of the services family caregivers provide is quite substantial—an estimated \$306 billion a year in the U.S. That is almost twice as much as the nation spends on homecare and nursing home services combined (\$158 billion).<sup>36</sup> But this caregiving is not without cost:

- Family caregivers suffer from depression at much greater rates than non-caregivers, twice as high for children of aging parents and as much as six times as high for spousal caregivers.<sup>37</sup>
- Family caregivers experiencing extreme stress have been shown to have weakened immune systems, be more prone to chronic disease themselves,<sup>38</sup> and age prematurely. This level of stress can take as much as 10 years off a family caregiver's life.<sup>39</sup>
- Caregiving families tend to have incomes that are \$15,000 less than non-caregiving families, yet they spend 2.5 times more on out of pocket medical expenses.<sup>40</sup>
- In 2000, working family caregivers lost \$109 per day in wages and health benefits due to the need to provide full time care at home.<sup>41</sup>

The costs of caregiving do not affect family caregivers alone. They have a very large impact on American businesses:

- Employers can lose as much as \$33 billion each year due to employees' need to care for loved ones 50 years of age and older.<sup>42</sup>

Facing the “silver tsunami” of aging baby boomers, we need to do a better job of providing assistance to family caregivers. To make improvements, we can:

- Enhance the availability and affordability of respite care (a short break from caring for a chronically ill family member)
- Provide working family caregivers with paid family leave
- Monitor family caregivers' health and provide them with the education and “health literacy” training they need to fulfill their caregiving responsibilities
- Enhance social support networks for caregivers and their loved ones as part of an integrated and holistic approach to caring for the chronically ill

**POLICY RECOMMENDATION:**  
**Promote healthy lifestyles and disease prevention and management in every community**

**Background:**

Unhealthy lifestyles contribute to the rising rates of chronic disease and skyrocketing health care costs in this country. In fact, between 70 and 90 percent of chronic diseases are believed to be caused by just three habits: poor nutrition, sedentary living and tobacco use.<sup>43</sup> By changing their everyday behavior, Americans can significantly improve their health, prevent disease and reduce health care costs. However, altering the lifestyles we are accustomed to will require significant effort and the commitment from many different groups with a stake in Americans' health to make change.

**Ideas for Change:**

One of the best ways to reduce susceptibility to chronic disease is by incorporating prevention and disease management strategies into daily routines. To do this, we can:

- ✓ **Gather evidence about which wellness and prevention programs have demonstrated effectiveness and provide incentives for their accelerated diffusion in the workplace, schools, and communities**

To make a difference in helping Americans prevent and manage chronic disease, we must know much more about what works and what doesn't. We can begin this process by tasking an independent group, such as the Institute of Medicine (IOM), to evaluate current programs in existence in workplaces, schools, and communities and develop the evidence to help leaders in these settings implement "best practices". Once we have established the components of "model" interventions, we can look to diffuse these models in communities across the U.S. Such diffusion could be encouraged through education and targeted incentives.

- ✓ **Promote wellness in the workplace**

Chronic diseases are a primary driver of employer health care costs, and are responsible for higher rates of absenteeism and lower productivity in the work place. For example:

- Overweight and obese employees have high absenteeism rates and higher health care costs than non-obese employees.<sup>44</sup>
- Depression causes an estimated 10-90 missed work days per year, and is also responsible for lower productivity while on the job.<sup>45</sup>
- Employees who smoke miss almost twice as much work as employees who do not smoke.<sup>46</sup>

Offering employees health promotion and wellness programs can make a big difference in employees' health and in the bottom line. Employees who participate in health promotion programs at work have been shown to have lower overall health care costs, miss fewer days, and be more productive while on the job:

- A review of 32 health promotion programs found that the average program may be able to save as much as \$3.48 for every dollar spent on programming.<sup>47</sup>

Not enough employers have yet embraced a comprehensive approach to wellness in the workplace. A 2006 survey of nearly 500 employers by the International Foundation of Employee Benefit Plans found that 62 percent of respondents offer wellness initiatives. But not all programs are created equal. A survey of a representative sample of 1,500 workplaces found that employers indeed offered a wide range of health promotion activities to their workers but that only 7 percent of the sample offered five key elements comprising a comprehensive program:

1. Health education
2. Links to related employee services
3. Supportive physical and social environments for health improvement
4. Integration of health promotion into the organization's culture
5. Employee screenings with adequate treatment and follow up.<sup>48</sup>

Those who have taken a comprehensive approach are realizing value. For example:

- The United Services Automobile Association (USAA) developed a wellness program called "Take Care of Your Health." This comprehensive program has multiple components that include more than 20 unique wellness initiatives, ranging from on-site fitness centers and healthy food choices in cafeterias to integrated disability management and health risk assessments. Evaluation highlights from this program include:
  - Program participants have experienced statistically significant decreases in weight, smoking rate, and health risk factors
  - Participants have seen statistically significant increases in worksite productivity
  - Workplace absences have decreased, with an estimated three-year savings of more than \$105 million
  - Workers' compensation has seen reductions of 3 percent in frequency, 8 percent in rate, and 24 percent in severity, with 427 days of potential-gained productivity<sup>49</sup>
- Johnson & Johnson also has benefited from its health promotion program, which has been offered since 1979. The program integrates employee health and wellness and emphasizes health promotion and disease prevention. A 5-year retrospective evaluation of the program found:
  - Spending on outpatient and office visits fell by \$45.17 per employee per year
  - Mental health visit expenditures decreased by \$70.69 per employee per year
  - Inpatient hospital day expenditures decreased by \$119.67 per employee per year
  - Across all categories, total savings were \$224.66 per employee per year<sup>50</sup>

- ✓ **Incorporate health promotion and disease prevention and management into the everyday routines of American children and families**

When it comes to health, we are failing our children. The rate of chronic disease in American children has quadrupled since 1960.<sup>51</sup> One-sixth (16 percent) are overweight, and another third (34 percent) are at risk of becoming overweight. Two million adolescents (or 1 in 6 overweight adolescents) aged 12-19 have pre-diabetes,<sup>52</sup> and another 5.1 million school-aged children have asthma.<sup>53</sup> Clearly, we need to start reversing these trends.

For too long, too many schools have de-emphasized health, nutrition, and physical education, but many are beginning to refocus on these areas by:

- *Providing basic health education and information to children and families.* Classroom-based education focused on reducing the risk for chronic disease has been effective in increasing general health and exercise-related knowledge, and in decreasing body mass index (BMI) among boys and girls.<sup>54</sup> Providing information to parents can also help to facilitate change.
- *Supporting physical education and after-school sports activities.* There is also strong evidence that school-based physical education is effective in increasing levels of physical activity and improving fitness, even outside of the classroom.
- *Providing healthier options in the cafeteria and snack machines.* Many school systems, including the New York City public schools, have begun to explore options to reduce the presence of unhealthy foods in schools.

Schools should look to model programs for guidance on how to introduce and structure these changes. For example:

- The CATCH program, managed by the University of Texas School of Public Health, has been labeled a breakthrough elementary school obesity prevention and child health program. Created in the late 1980s and implemented statewide in 1996, the program has managed to change the fat content in school lunches, increase moderate-to-vigorous activity in physical education classes and improve nutrition and exercise habits in children.<sup>55,56</sup>
- The Asthma-Friendly Schools Initiative--a project of the American Lung Association, the National Association of School Nurses, the American Academy of Pediatrics, and the National Education Association Health Information Network--aims to create comprehensive systems in schools across the U.S. to target the #1 cause of missed school days: asthma. The program offers a planning toolkit for free on its Web site ([www.lungusa.org](http://www.lungusa.org)). The toolkit presents a framework and provides the tools for community organizations and schools to assess the school's needs, including review of current capabilities and opportunities to strengthen infrastructure, education, and support to ensure that children with asthma are healthy, in school, and ready to learn.

✓ **Promote community-based programs for prevention, early intervention, and disease management**

The availability of “healthy” resources where Americans live can have a significant impact on their health. According to numerous studies, people who live in activity-friendly environments are more likely to be physically active.<sup>57</sup> An online survey of

Americans conducted in 2005 found that 7 in 10 Americans believe their community environment influences their level of physical activity and overall health. More than half (56 percent) of survey respondents ranked walkable routes in the community as the first or second most important factor positively influencing their physical activity, followed by access to local parks (28 percent) and community bike paths (26 percent).

The CDC has demonstrated that creating and improving places for physical activity (*e.g.*, parks, local gyms) can result in a 25 percent increase in the number of people who exercise at least three times per week.<sup>58</sup> The CDC also found that community-based programs have proven to be effective in preventing children from starting to smoke, helping smokers to quit, and in reducing tobacco-related disparities, and thus have included community-based efforts as a cornerstone of its Best Practices for Comprehensive Tobacco Control Programs.

Community-based programs with proven success include:

- The National Recreation and Park Association’s “Step Up To Health” program. This initiative has launched in dozens of cities across the country, such as Rockville, Maryland. Walk Rockville designed walking paths around schools, parks, neighborhoods and businesses so that residents could engage in physical activity in their own neighborhood.<sup>59</sup> Studies of similar community-wide campaigns for physical activity noted that the percentage of active people increased up to 9.4 percent, and knowledge about exercise increased by almost 20 percent.<sup>60</sup>
- The YMCA’s “Activate America: Pioneering Healthier Communities” project. Since 2004, this innovative initiative has aimed to empower local communities across the U.S. with proven strategies and models that will allow them to create and sustain positive, lasting change around healthy living. The program engages a diverse sector of local leaders committed to promoting healthy eating and active living including those from government (local, state, and federal), education (superintendents, universities, and K–12 schools), health care (hospitals, doctors, and insurance companies), transportation, food-related industries (restaurants and grocery stores), religion (houses of worship and faith-based groups), parks and recreation departments, and foundations and not-for-profit organizations as well as health-related not-for-profits. The diversity of this approach helps to shape lasting change, as city planners work alongside architects, public health officials, and community groups to ensure that when developing a new subdivision, for example, there are safe and walkable sidewalks, trails, and bike paths for public use.<sup>61</sup>

## **POLICY RECOMMENDATION:**

### **Encourage and reward continuous advances in clinical practice and research that improve the quality of care for those with prevalent and costly chronic diseases**

#### **Background:**

One of the hallmarks of the U.S. health care system is the scope and pace of clinical innovation and discovery. The nation's investments in both public and private research and development (R&D) activities have translated into new technologies and clinical interventions that have improved patient outcomes more effectively and efficiently, extending the frontiers of life expectancy and improving quality of life.

To have the greatest potential to prevent and treat chronic disease, scientific and clinical advancements must be translated into practical applications that providers and patients can understand and use. This process is time-consuming and challenging due to myriad financial, organizational, and other barriers, but mitigating these barriers will result in patients receiving higher quality and potentially more affordable care as new prevention and management strategies and treatments will be developed, tested, and brought into clinical practice.

#### **Ideas for Change:**

There are many possible approaches for accelerating the process of encouraging and rewarding continuous advances in clinical practice and research that can improve care quality. For instance, we can:

✓ **Reward evidence-based practice with payments to providers tailored to promote the delivery of high-quality care that improves patient outcomes**

Health care providers, including hospitals, physicians, and other clinicians, need accurate, timely information at the point of care, as well as resources and incentives to deliver the highest-quality, evidence-based care. Our health system must not only assure that evidence is available for patients and providers to make effective clinical decisions, but provide the infrastructure to support its use. For example:

- Some health plans and employers are working with physicians and other clinicians to ensure that incentives are appropriately aligned to promote coordinated care and treatment to widely accepted guidelines
- Researchers are exploring ways to redesign processes of care to identify the key steps to improve clinical quality

✓ **Bring clinical best practices to the bedside and promote greater knowledge-sharing between researchers and clinical practitioners**

Translational research – which is the clinical application of scientific medical research, from the lab to the bedside – can be encouraged and funded to leverage knowledge transfer from scientific and clinical settings. This is important because it helps to ensure that health care stakeholders have the most appropriate, current, and evidence-based



information and tools necessary to make a positive impact on health and health care. Research institutions can be given more resources and flexibility to foster productive collaborations among experts in different fields, both in the scientific laboratory context and in numerous clinical settings at the front-line of patient care.

- For example, to create greater opportunities to catalyze the development of a new discipline of clinical and translational science, the National Institutes of Health (NIH) launched its Clinical and Translational Science Awards (CTSA) Consortium in October 2006.<sup>62</sup> The CTSA Consortium focuses 12 U.S. academic medical centers on the goal of promoting clinical and translational science.

✓ **Support greater opportunities for education on providing quality care to chronically ill patients**

With the aging of the population and the tremendous impact of chronic illness on the health system, we must make chronic disease prevention and management a greater priority of clinical education.

Several studies have shown the impact of combining provider education with other disease management interventions in caring for people with chronic disease. One study that examined the impact of provider asthma education, for example, found that physicians were more likely to encourage patients to be physically active and to set goals for treatment. It also found that their patients had a greater decrease in days limited by asthma symptoms and in emergency department visits.

To facilitate positive change, we could:

- Offer grants, scholarships, and education to promote study in prevention and management of chronically ill patients among doctors, nurses, and other clinicians

✓ **Provide greater funding and support for research and innovation in the fight against the nation's most prevalent and costly chronic diseases**

The value of innovations in medical treatments and technology cannot be underestimated in the fight against chronic disease. Clinical discoveries such as screening tests, vaccines and medications, and medical devices have had a tremendous impact Americans' ability to lead long and healthy lives. The sequencing of the human genome is yielding exciting new tools to help providers tailor treatments to individuals and their disease, and this powerful new capability, called personalized medicine, holds great potential to prevent and treatment chronic conditions more effectively.

But there is more to be done. For example, we can:

- Refocus efforts on basic research on those chronic diseases that are among the most deadly and costly to Americans through greater public and private funding
- Support the FDA's Critical Path Initiative to provide clear, efficient regulatory pathways for new diagnostics and targeted therapies

- Foster greater collaboration between academia, the public and the private sectors, by, for instance, supporting efforts to discover and validate biomarkers that will help accelerate the discovery of new medical treatments and cures
- Ensure federal, state and private payment policies support the development, coverage and rapid diffusion of new technologies

✓ **Expand the research base on best practices in chronic disease prevention, early intervention, and management and use data to define and measure performance**

Disease prevention and management programs, care coordination, and benefit designs all have the potential to influence health care and cost trends. Unfortunately, we don't yet know enough about what works and what doesn't in prevention and care management. Evidence regarding activities is mixed depending on specific programs, patient populations, and clinical contexts. In part, this is because many of the potential benefits of successful programs are likely to materialize over a longer period than most short-term evaluations are able to capture.

To fully investigate the long-term effects of prevention and disease management programs on affordability of health care and health outcomes, additional and more rigorous research is needed in these areas. Accurate and timely data and knowledge regarding the most effective interventions and benefit designs is critical as data derived from experience can be used to improve the design and implementation of new prevention programs and disease management initiatives.

Some groups have started this process on their own. For example:

- One large corporation regularly monitors key indicators from its comprehensive wellness program and is often cited as a model employer program for wellness and prevention.<sup>63</sup> The company's data collection and analysis allow the company to identify the wellness strategies that are successful in improving health status and reducing health care costs.
- Other employers use data to monitor the degree to which their programs are associated with health risk reductions, increases in healthy behaviors, increased productivity, and reduced costs.

## **POLICY RECOMMENDATION:**

### **Accelerate improvements in the quality and availability of health information technology throughout the health system**

#### **Background:**

The United States Department of Health and Human Services says, “Information technology (IT) is key to reforming health care in America.”<sup>64</sup> When it comes to caring for chronically ill patients, this is especially true. Health information technology (HIT) is the backbone of prevention and care management because it:

- Provides easy access to comprehensive patient records electronically, thus making it easier to see a patient’s medical history
- Helps providers track patient care in order to reduce duplication of services, address patient issues, and coordinate care with care managers
- Offers providers access to reference materials during a patient visit
- Provides clinicians real-time guidance on standards of care
- Sends reminders and prompts to patients about visits, tests, and recommendations and prescriptions<sup>65</sup>

Unfortunately, the health system is not yet routinely using HIT to improve Americans’ care quality. Only one in five (20 percent) U.S. patients has computerized health records.<sup>66</sup> The growing population of chronically ill Americans, many of whom see numerous providers, highlights the need to improve health information technology to facilitate better coordination of care.

#### **Ideas for Change:**

There are many approaches to enhancing the availability and use of health information and technology, including providing leadership, incentives and resources to providers and individuals. For example:

- ✓ **Provide incentives for providers to implement HIT improvements to improve the quality of care and help overcome cost barriers**

HIT can enable providers to obtain information, coordinate and manage care, assist patients with chronic diseases with self-management, reduce errors, improve administrative practices and control costs over time. HIT adoption by providers, such as physicians, has been slow for numerous reasons including cost, practice disruption and lack of uniformity in payer requirements, among others. Providing incentives could motivate providers to adopt HIT more expeditiously.

There are several examples of such programs, including one that CMS is implementing for physicians participating in the Medicare program. The 2003 Medicare Modernization Act Doctor’s Office Quality – Information Technology project was implemented to promote the adoption of electronic health record systems and

information technology. To participate in the program, physicians must be the main provider of primary care to at least 50 fee-for-service Medicare beneficiaries and meet specific requirements, such as the adoption of information technology practices and care management. This program aims to increase the use of health information technology over a short time frame and therefore requires physicians to phase in health information technology to manage clinical care and electronic reporting of clinical quality and outcomes measures data over three years.<sup>67</sup>

✓ **Ensure that HIT is seamless across health care providers and settings**

To be effective in coordinating care and ensuring access to patient and clinical information across a delivery system, HIT must be seamless--interoperable, accessible, usable--wherever the patient obtains services. Such a seamless HIT system is key to managing the care of patients with chronic illness since they typically see many providers, use the emergency room, take multiple prescription medications, have more complex medical records and require monitoring.

While the U.S. has not yet developed a set of national standards for HIT systems, stakeholders within the health care delivery system are implementing systems or system components that can be used across providers and settings. For example, Kaiser Permanente developed a health information technology infrastructure in which electronic health records play a large role. Kaiser's electronic health record, HealthConnect, connects more than eight million people to their health care providers and their personal health information. This system allows the patient's medical information to be available when and where it's needed and, because the system includes more comprehensive patient information, it helps providers address multiple problems in a single visit, reducing the need for multiple appointments. The Kaiser Permanente HealthConnect system has been cited as a model health information technology strategy.<sup>68</sup>

✓ **Encourage providers to use HIT in providing preventive and chronic health care and tracking quality of care**

Health information coupled with HIT, including dissemination of evidenced-based practice guidelines, is critical for improving the quality of care and health outcomes.

An example of a physician education program that relies on technology and incentivizes physicians is The Bridges to Excellence (BTE) program--a coalition of physicians, health plans, and large employers. It rewards physicians based on their use of clinical information systems and evidence-based medicine. This program aims to provide a health information technology infrastructure that will lead to more efficient and higher-quality care. The BTE program includes Diabetes Care Link--a module that tests the effectiveness and impact of the health information technology infrastructure by using diabetes-related HEDIS® measures for patients being treated for diabetes by participating physicians. Based on BTE's preliminary data, savings are currently estimated at 13 percent of the average cost for treating an individual with diabetes.<sup>69</sup>

✓ **Facilitate Americans' ability to track their own health and to obtain information on conditions, treatment options, and quality through technology**

Web-based electronic medical records and computer-based personal health records are important tools for helping patients track their own health. Kaiser Permanente and several health plans are enabling their members to create, store and retrieve their health information electronically.

✓ **Maximize use of HIT to expand consumer participation in clinical trials and health surveillance systems**

HIT can benefit patients by using electronic health records to educate and notify doctors and potential participants about appropriate clinical trial opportunities. Also, personal health records can be used as a broader education tools to educate about the clinical research process.

HIT will expand the data gathering opportunities around what happens when a drug goes from clinical trials to an FDA approval and into the marketplace.

## **POLICY RECOMMENDATION:** **Reduce health disparities by focusing on barriers to good health**

### **Background:**

Not every American has an equal likelihood of living a long and healthy life. Health status varies by geographic location, gender, race/ethnicity, education and income, and disability, among other things. Disparities are common, and among Americans with chronic diseases, minorities are more likely to suffer poor health outcomes. For instance:

- Blacks and Hispanics receive poorer quality care than whites on more than 70 percent of measures, according to a report by the Agency for Health Care Research and Quality.<sup>70</sup>
- Former U.S. Surgeon General David Satcher estimated that nearly 84,000 deaths a year could be prevented if gaps in mortality between blacks and whites were eliminated.<sup>71</sup>

### **Ideas for Change:**

To improve the future health of the entire U.S., we must focus on eliminating health disparities. To do this, we can:

✓ **Embrace models of care coordination and management shown to improve health among Americans of all backgrounds and situations**

As noted earlier, the medical home concept, the disease management model, and the physician group practice demonstration model have the potential to reduce and even eliminate disparities in health care and should be a key component of care delivery.<sup>72,73</sup>

✓ **Improve “cultural competency” in care**

Many providers need help understanding how to improve their communications skills with patients of varied backgrounds and linguistic abilities.

✓ **Employ “community-based” approaches to addressing health disparities**

Over the past decade, community-based approaches have been shown to be successful in helping to eliminate health disparities, both in broader community-wide settings, and in targeted settings, such as schools and worksites. Examples of successful programs are:

- The HHS “Steps to a HealthierUS” initiative. This effort guides states and communities to address diabetes, obesity, and asthma, and risk factors such as poor nutrition, physical inactivity, and tobacco use.
- CDC's REACH Program (Racial and Ethnic Approaches to Community Health). One example of a successful program coming out of REACH is the Chicago Southeast Diabetes Community Action Coalition, which focused on a minority community with a high burden of disease. This intervention focused on building an understanding among the target community of the burden of diabetes, and how to make improvements in individuals' health management and self-advocacy. This “participatory action research” model—in which the participant is also the researcher—helped to generate positive change in the community.<sup>74</sup>

✓ **Fund research on the measurement of, causes of, and solutions to health disparities**

The causes of health disparities are not fully known. It should be a priority to continue funding of research into the root causes, and evaluations of programs to address, this critical issue through the work of such organizations as The Agency for Health Care Research and Quality (AHRQ) and the Institute of Medicine (IOM). We must also improve data collection to understand how different groups are being affected and how their situations differ.

## Endnotes:

- <sup>1</sup> The Kaiser Family Foundation. Kaiser Health Tracking Poll: Election 2008. June 2007. Available at: [http://www.kff.org/kaiserpolls/pomr062007pkg\\_v2.cfm](http://www.kff.org/kaiserpolls/pomr062007pkg_v2.cfm). Accessed August 29, 2007
- <sup>2</sup> Wu S, Green A, "Projection of Chronic Illness Prevalence and Cost Inflation." RAND Corporation, October 2000.
- <sup>3</sup> Centers for Disease Control and Prevention. Chronic Disease Overview page. Available at: <http://www.cdc.gov/nccdphp/overview.htm>. Accessed April 6, 2007.
- <sup>4</sup> Centers for Disease Control and Prevention. Chronic Disease Overview page. Available at: <http://www.cdc.gov/nccdphp/overview.htm>. Accessed April 6, 2007.
- <sup>5</sup> Centers for Medicare and Medicaid Studies. Historical Overview of National Health Expenditures. Available at: [http://www.cms.hhs.gov/NationalHealthExpendData/02\\_NationalHealthAccountsHistorical.asp#TopOfPage](http://www.cms.hhs.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp#TopOfPage). Accessed on April 17, 2007.
- <sup>6</sup> Partnership for Solutions. Chronic Conditions: Making the Case for Ongoing Care. September 2004 Update. Available at: [www.partnershipforsolutions.org/DMS/files/chronicbook2004.pdf](http://www.partnershipforsolutions.org/DMS/files/chronicbook2004.pdf). Accessed on April 17, 2007.
- <sup>7</sup> Thorpe K, "The Rise In Health Care Spending And What To Do About It." *Health Affairs*.2005;6:1436-1445. Also, Thorpe K, Florence CS, Joski P, "Which Medical Conditions Account For The Rise In Health Care Spending?"
- <sup>8</sup> Thorpe K, Florence C, Howard D, Joski P, "The Impact of Obesity in Rising Medical Spending." *Health Affairs*. 2004.
- <sup>9</sup> Laino C. One in three kids will develop diabetes. Web MD [serial online]. June 16, 2003.
- <sup>10</sup> Mensah G, "Global and Domestic Health Priorities: Spotlight on Chronic Disease." National Business Group on Health Webinar. May 23, 2006. Available at: [www.businessgrouphealth.org/pdfs/preventing\\_chronic\\_disease\\_issue\\_brief.pdf](http://www.businessgrouphealth.org/pdfs/preventing_chronic_disease_issue_brief.pdf). Accessed April 17, 2007.
- <sup>11</sup> The National Lung Education Program. FAQs. Available at: <http://www.nlhep.org/faqs.html>. Accessed August 9, 2007.
- <sup>12</sup> McGlynn E, Asch S, Adams J, Keesey J, Hicks J, DeCristofaro A, Kerr E, "The Quality of Health Care Delivered to Adults in the United States." *New England Journal of Medicine*. 2003.
- <sup>13</sup> Thorpe K, Florence, C, Howard, D, Joski, P, "The Impact of Obesity in Rising Medical Spending." *Health Affairs*. 2004.
- <sup>14</sup> General Accounting Office. Medicare Beneficiary Use of Clinical Preventive Services. April 2002. Available at: <http://www.gao.gov/new.items/d02422.pdf>. Accessed August 9, 2007.
- <sup>15</sup> WomenHeart and the Society for Women's Health Research. The 10Q Report. Available at: [http://www.womenheart.org/10\\_Q\\_Report\\_06.asp](http://www.womenheart.org/10_Q_Report_06.asp). Accessed September 20, 2007.
- <sup>16</sup> Partnership for Prevention. Preventive Care: A National Profile on Use, Disparities, and Health Benefits. Available at: <http://www.prevent.org/content/view/full/129/72/>. Accessed September 20, 2007.
- <sup>17</sup> Centers for Disease Control and Prevention. Smoking Rates and Deaths. CDC, State Highlights 2002: Impact and Opportunity, April 2002, <http://www.cdc.gov/tobacco/StateHighlights.htm>. CDC, "Annual Smoking- Attributable Mortality, Years of Potential Life Lose, and Economic Costs – United States 1995-1999," MMWR, April 11, 2002, <http://www.cdc.gov/mmwr>. Heart Attack & Stroke Savings. Lightwood, J. & S. Glantz, "Short-Term Economic and Health Benefits of Smoking Cessation – Myocardial Infarction and Stroke," *Circulation* 96(4): 1089-1096, August 19, 1997. and Longer-Term Health Savings. Hodgson, T., "Cigarette Smoking and Lifetime Medical Expenditures," *The Millbank Quarterly* 70(1) (1992). U.S. Department of the Treasury, *The Economic Costs of Smoking in the U.S. and the Benefits of Comprehensive Tobacco Legislation*, 1998. Miller, L., et al., "State Estimates of Total Medical Expenditures Attributable to Cigarette Smoking, 1993," *Public Health Reports* 113: 447-58, Sept./Oct. 1998. Warner, K.E., et al., "Medical Costs of Smoking in the United States: Estimates, Their Validity, and Their Implications," *Tobacco Control* 8(3): 290-300, Autumn 1999.
- <sup>18</sup> Stein, Rob "Baby Boomers Appear Less Healthy Than Parents." *The Washington Post*, April 20, 2007.
- <sup>19</sup> Centers for Disease Control and Prevention. Chronic Disease Prevention Major Accomplishments. Available at: <http://www.cdc.gov/nccdphp/accomplishments.htm>. Accessed August 28, 2007.
- <sup>20</sup> McCarthy D, "Case Study: Improving Quality and Efficiency in Response to Pay-for Performance Incentives Under the Medicare Physician Group Practice Demonstration." March, 2007. Available at: [http://www.commonwealthfund.org/innovations/innovations\\_show.htm?doc\\_id=468900](http://www.commonwealthfund.org/innovations/innovations_show.htm?doc_id=468900). Accessed August 29, 2007.
- <sup>21</sup> Dietz W, et al, "Health Plans' Role in Preventing Overweight in Children and Adolescents." *School & Society*. 430-440, March/April 2007.
- <sup>22</sup> Ibid.
- <sup>23</sup> Unützer J, et al, "Collaborative-care Management of Late-life depression in the Primary Care Setting: a Randomized Controlled Trial." *Journal of the American Medical Association (JAMA)*. 2002; 288:2836-2845.
- <sup>24</sup> Areán PA, et al., "Improving Depression Care for Older, Minority Patients in Primary Care: A Randomized Trial." *Medical Care*. 2005 April;43(4):381-390.
- <sup>25</sup> Williams J Jr., et al., "The effectiveness of depression care management on diabetes-related outcomes in older patients." *Annals of Internal Medicine*. 2004 Jun 15;140(12):1015-24.
- <sup>26</sup> Lin EHB, et al., "Effect of improving depression care on pain and function among older adults with arthritis." *Journal of the American Medical Association (JAMA)*. 2003; 290(18):2428-2803.
- <sup>27</sup> The Institute of Medicine. A Prescription to End Confusion. Available at: <http://www.iom.edu/?id=19750>. Accessed September 20, 2007.
- <sup>28</sup> CATCH Texas. FAQ. Available at: [http://www.sph.uth.tmc.edu/catch/about\\_FAQ.htm](http://www.sph.uth.tmc.edu/catch/about_FAQ.htm). Accessed August 15, 2007.



- 
- <sup>29</sup> California Healthcare Foundation. Building Peer Support Programs to Manage Chronic Disease: Seven Models for Success. December 2006. Available at: <http://www.chcf.org/documents/chronicdisease/BuildingPeerSupportPrograms.pdf>. Accessed August 27, 2007.
- <sup>30</sup> Goetzel, R., et al., "Promising Practices in Employer Health and Productivity Management Efforts: Findings From a Benchmarking Study." *Journal of Occupational and Environmental Medicine*. 2007 49 (2); 111-130.
- <sup>31</sup> National Business Group on Health. Preventing Chronic Disease in the United States and Abroad. December 2006.
- <sup>32</sup> Cranor C, Bunting B, Christensen D, "The Asheville Project: Long-Term Clinical and Economic Outcomes of a Community Pharmacy Diabetes Care Program." *Journal of American Pharmaceutical Association*. March 2003. Available at: [http://www.aphafoundation.org/programs/Asheville\\_Project/](http://www.aphafoundation.org/programs/Asheville_Project/). Accessed August 29, 2007.
- <sup>33</sup> Department of Health and Human Services. *Informal Caregiving: Compassion in Action*. Based on data from the National Survey of Families and Households (NSFH), 1998 and National Family Caregivers Association, *Random Sample Survey of Family Caregivers*, Summer 2000, Unpublished.
- <sup>34</sup> Thompson L., "Long-term care: Support for family caregivers [Issue Brief]." Washington, DC: Georgetown University, 2004 and U.S. Agency for Healthcare Research and Quality. Long-Term Care Financing Project, Long-term Care Users Range in Age and Most Do Not Live in Nursing Homes. November 8, 2000.
- <sup>35</sup> National Alliance for Caregiving and AARP. Caregiving in the U.S: 2004... Available at: [www.caregiving.org/data/04finalreport.pdf](http://www.caregiving.org/data/04finalreport.pdf). Accessed September 20, 2007.
- <sup>36</sup> Arno PS, "Economic Value of Informal Caregiving," presented at the Care Coordination and the Caregiving Forum, Dept. of Veterans Affairs, NIH, Bethesda, MD, January 25-27, 2006.
- <sup>37</sup> Cannuscio CC, Jones C, Kawachi I, Colditz G.A., Berkman L and Rimm E, "Reverberation of family illness: A longitudinal assessment of informal caregiver and mental health status in the nurses' health study." *American Journal of Public Health*. 92:305-311, 2002.
- <sup>38</sup> Glaser, JK and Glaser, R. "Chronic stress and age-related increases in the proinflammatory cytokine IL-6." Proceedings of the National Academy of Sciences, June 30, 2003.
- <sup>39</sup> Epel ES, Dept of Psychiatry, Univ. of California, San Francisco, et al, From the Proceedings of the National Academy of Science, Dec 7, 2004, Vol. 101, No. 49.
- <sup>40</sup> Disability and American Families: 2000, *Census 2000 Special Reports*, July 2005. and Drs. Altman, Cooper and Cunningham, "The Case of Disability in the Family: Impact on Health Care Utilization and Expenditures for Non-disabled Members," *Milbank Quarterly* 77 (1) pages 39 - 75, 1999.
- <sup>41</sup> Stucki BR and Mulvey J, "Can Aging Baby Boomers Avoid the Nursing Home? Long-term Care Insurance for Aging in Place." *American Council of Life Insurers*. March 2000.
- <sup>42</sup> MetLife Mature Market Institute and National Alliance for Caregiving, MetLife. Caregiving Cost Study: Productivity Losses to U.S. Business. July 2006.
- <sup>43</sup> Aldana S, Greenlaw R, Salberg A, Ohmine S, "The Behavioral and Clinical Effects of Therapeutic Lifestyle Change on Middle-aged Adults." *Preventing Chronic Disease* January 2006. Vol. 3 No. 1.
- <sup>44</sup> Aldana S, "Financial Impact of Health Promotion Programs: A Comprehensive Review of the Literature." *American Journal of Health Promotion* 15 (5); 296-320, 2001.
- <sup>45</sup> Kessler et al., "Prevalence and Effects of Mood Disorders on Work Performance in a Nationally Representative Sample of U.S. Workers." *The American Journal of Psychiatry* 2006, 163: 9, 1561-1568 and Stewart et al., "Cost of lost productive work time among US workers with depression." *JAMA* 2003, 289(23): 3135-3144.
- <sup>46</sup> Halpern MT, Shikar R, Rentz AM, Khan ZM, "Impact of smoking status on workplace absenteeism and productivity," *Tobacco Control* 10(3): 233-238, September 2001.
- <sup>47</sup> Aldana S, "Financial Impact of Health Promotion Programs: A Comprehensive Review of the Literature." *American Journal of Health Promotion* 15 (5); 296-320, 2001.
- <sup>48</sup> Goetzel R, "Promising Practices in Employer Health and Productivity Management Efforts: Findings from a Benchmarking Study." *Journal of Occupational and Environmental Medicine*. Volume 49, Number 2, February 2007.
- <sup>49</sup> The Health Project. C. Everett Koop National Health Award Winners. Available at: <http://healthproject.stanford.edu/koop/work.html>. Accessed August 13, 2007.
- <sup>50</sup> Department of Health and Human Services. Prevention Makes Common Cents (2003). Available at: <http://www.aspe.hhs.gov/health/prevention/prevention.pdf>. Accessed August 8, 2007.
- <sup>51</sup> Perrin et al., "The Increase of Childhood Chronic Conditions in the United States." *JAMA*, June 2007.
- <sup>52</sup> American Diabetes Association. Total prevalence of diabetes and pre-diabetes. Available at: <http://www.diabetes.org/diabetes-statistics/prevalence.jsp>. Accessed July 31, 2006.
- <sup>53</sup> National Center for Health Statistics. National Health Interview Survey 2003. Available at: <http://www.cdc.gov/nchs/>. Accessed July 29, 2006.
- <sup>54</sup> Kahn E, et al., "The Effectiveness of Interventions to Increase Physical Activity," *American Journal of Preventive Medicine* 22 (4S); 73-107, 2002.
- <sup>55</sup> Luepker R, et al., "Outcomes of a field trial to improve children's dietary patterns and physical activity," The Child and Adolescent Trial for Cardiovascular Health, CATCH collaborative group, *JAMA* 275 (10), 1996.

- 
- <sup>56</sup> CATCH. Coordinated Approach to Child Health. Available at: <http://www.catchinfo.org//whatis.html>. Accessed August 7, 2007.
- <sup>57</sup> Centers for Disease Control and Prevention. Creating or Improving Access to Places for Physical Activity is Strongly Recommended to Increase Physical Activity - Guide to Community Preventive Services (2002). Available at: [www.thecommunityguide.org/pa/default.htm](http://www.thecommunityguide.org/pa/default.htm). Accessed August 8, 2007.
- <sup>58</sup> Ibid.
- <sup>59</sup> National Recreation and Park Association. Step Up to Health 2006. Available at: <http://www.nrpa.org/content/default.aspx?documentId=5868>. Accessed August 13, 2007.
- <sup>60</sup> Kahn E, et al., "The Effectiveness of Interventions to Increase Physical Activity," *American Journal of Preventive Medicine* 22 (4S); 73-107, 2002.
- <sup>61</sup> YMCA. Pioneering Healthy Communities Lessons Learned Report. Available at: [www.ymca.net/downloads/aa\\_phc\\_lessons\\_learned\\_report.pdf](http://www.ymca.net/downloads/aa_phc_lessons_learned_report.pdf) Accessed September 20, 2007.
- <sup>62</sup> National Institutes of Health Roadmap for Medical Research. Re-Engineering the Clinical Research Enterprise. Available at: <http://nihroadmap.nih.gov/clinicalresearch/overview-translational.asp>. Accessed September 20, 2007.
- <sup>63</sup> Department of Health and Human Services. Prevention Makes Common Cents (2003). Available at: <http://www.aspe.hhs.gov/health/prevention/prevention.pdf>. Accessed August 8, 2007.
- <sup>64</sup> Department of Health and Human Services. Health IT Standards. Available at: <http://www.hhs.gov/transparency/fourcornerstones/healthit/index.html>. Accessed September 20, 2007.
- <sup>65</sup> California Healthcare Foundation. Using Computerized Registries in Chronic Disease Care (2004). Available at: [www.chcf.org/documents/chronicdisease/ComputerizedRegistriesInChronicDisease.pdf](http://www.chcf.org/documents/chronicdisease/ComputerizedRegistriesInChronicDisease.pdf). Accessed September 20, 2007.
- <sup>66</sup> Lohr S, "Google and Microsoft Look to Change Health Care." *New York Times*. August 14, 2007. Available at: <http://www.nytimes.com/2007/08/14/technology/14healthnet.html?ex=1188532800&en=bb936cae12b3a1f5&ei=5070>. Accessed August 29, 2007.
- <sup>67</sup> Centers for Medicare and Medicaid Services. Press Release: Medicare Adds Performance-based payments for physicians. Available at: <http://www.cms.hhs.gov/apps/media/press/release.asp?Counter=2038>. Accessed September 20, 2007.
- <sup>68</sup> Kaiser Permanente HealthConnet™. Available at: <http://xnet.kp.org/newscenter/kphealthconnect/patientsafety.html>. Accessed September 20, 2007.
- <sup>69</sup> Foundation for Health Initiative and the Health Strategies Consultancy. Financial Incentives: Innovative Payment for Health Information Technology. Available at: [http://www.avalerehealth.net/research/docs/HIT\\_Incentives\\_Report\\_Foundation\\_for\\_eHI.pdf](http://www.avalerehealth.net/research/docs/HIT_Incentives_Report_Foundation_for_eHI.pdf). Accessed September 20, 2007.
- <sup>70</sup> Agency for Healthcare Research and Quality. National Healthcare Disparities Report 2006. Available at: <http://www.ahrq.gov/qual/measurix.htm#disparity>. Accessed September 20, 2007.
- <sup>71</sup> Institute of Medicine. Addressing Racial and Ethnic Health Care Disparities: Where Do We Go From Here? Mar. 2006.
- <sup>72</sup> Beal A, et al. Closing the Divide: How Medical Homes Promote Equity in Health Care. Results from the 2006 Commonwealth Fund Health Quality Survey. June 2007.
- <sup>73</sup> Coberley CR, Puckrein, Gary A., Dobbs, Angela C., McGinnis, Matthew A., Coberley, Sadie S., Shurney, Dexter W.. *Disease Management*. 2007, 10(3): 147-155. doi:10.1089/dis.2007.641. Available at: <http://www.liebertonline.com/doi/abs/10.1089/dis.2007.641>. Accessed September 20, 2007.
- <sup>74</sup> Giachello A, et al., "Reducing Diabetes Health Disparities Through Participatory Action Research." *Public Health Reports*. July-August 2003; vol. 118. Available at: [http://www.publichealthreports.org/userfiles/118\\_4/118309.pdf](http://www.publichealthreports.org/userfiles/118_4/118309.pdf). Accessed September 20, 2007.