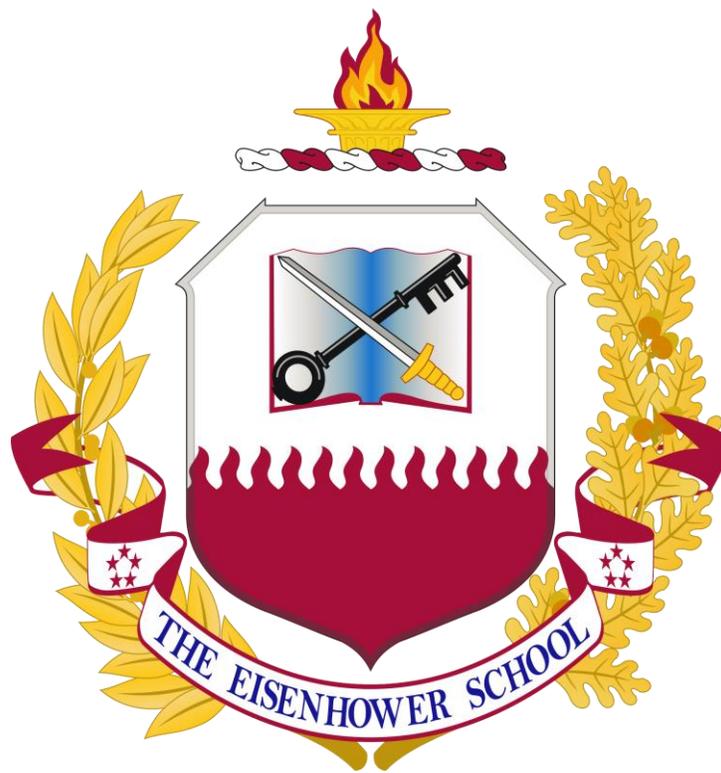


**Spring 2013  
Industry Study**

**Final Report  
*Health Care Industry***



**The Dwight D. Eisenhower School for National Security and Resource Strategy**

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# HEALTH CARE 2013

**Abstract.** The United States (U.S.) is one of the world's most prosperous and technologically advanced nations, yet in a 2013 study the U.S. health care system ranks last among 17 major developed countries.<sup>1</sup> The U.S. health care system is a compilation of fragmented industries. Specifically, it is comprised of pharmaceuticals, medical devices, medical distributors, health care facilities, health care providers, and health care insurance industries. As it currently functions, the cost of the system is unsustainable. Health care spending in the U.S. is presently over 17 percent of the Gross Domestic Product (GDP) and the spending per capita is the highest in the world.<sup>2</sup> As the proportions of spending on health care increases, and less discretionary funds are available for other requirements, there is an impending threat to national security. While the long-term impact of recent health care legislation remains unclear, the nation must provide opportunity for increased access while reducing cost and improving the quality of care.

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## **PLACES VISITED**

### **Domestic:**

La Clinica Del Pueblo, Washington, D.C.

Fort Belvoir Community Hospital, Fort Belvoir, VA

Johns Hopkins Health System, Baltimore, MD

George Washington University Medical Center, Washington, D.C.

Kaiser Permanente Capitol Hill Medical Center, Washington, D.C.

National Center for Medical Intelligence (NCMI), Fort Detrick, MD

U.S. Army Medical Research and Materiel Command (U.S.AMRMC), Fort Detrick, MD

Cardinal Health Corporate Headquarters, McGraw Park, IL

Baxter Corporate Headquarters, Deerfield, IL

Siemens Medical Solutions, Hoffman Estates, IL

Humana Vitality, Chicago, IL

Cook County Hospital (John H. Stroger, Jr. Hospital), Chicago, IL

Siemens Medical Solutions U.S.A, Malvern, PA

### **International:**

None



## Introduction

### *Purpose and Methodology*

The study team reviewed the United States (U.S.) health care system analyzing key industry components and comparing them with multiple foreign health care systems. The examination provides national leaders with a strategic analysis centered on health care cost, access, and quality. This inquiry identifies shortcomings in the U.S. system and offers practical recommendations to improve the overall value of a system that threatens national security through excessive economic burden. The team used site visits, expert interview and research methodologies to accomplish the following strategic objectives: analyze key industries of the U.S. health care system and assess their performance, identify competing health care demands, and review government policy impacts on the U.S. health care market.

### *Thesis*

The United States' health care system suffers from rising costs, limited access, and widely variable quality. The increasing cost of government funded health care programs threatens the stability of the national budget and the availability of discretionary funding for non-health care efforts. The spending required to sustain the current health care system adversely influences the ability of the U.S. to fund its national defense requirements. The U.S. health care system must balance three critical factors: cost, access, and quality. Ultimately, however, until health care costs are contained, the increasing expense of the U.S. system threatens the nation's capacity to fund all aspects of national security. The government's intervention into the U.S. market economy by way of monetary policy, fiscal policy, and various laws and regulation can have adverse effects. Nonetheless, the U.S. health care system would be a total market failure without government intervention. This study offers strategic recommendations that intend to maintain a market-based health care system and balance the three critical factors (i.e., cost, access and quality) while minimizing unintended consequences.

## National Security Concerns

*We the People of the United States, in Order to form a more perfect Union, establish Justice, insure domestic tranquility, provide for the common defense, promote the general welfare, and secure the blessings of Liberty to ourselves and our Posterity do establish this Constitution for the United States of America.<sup>3</sup>*

Preamble of the Constitution

The general purpose of the U.S. Constitution is stipulated in the Preamble. There are those that argue the provision of resources to universal health care coverage directly addresses the promotion of the general welfare. Others argue limited national resources are better applied to the common defense of our nation. Recent budget pressures and recognition of national resource limitations have placed these interests in direct competition. The 2010 National Security Strategy establishes priorities and identifies several objectives that require a strong national military posture: security



of the U.S. and its citizens; protection of their property; respect for universal values at home and across the world; and an international order advanced by U.S. leadership that promotes peace, security, and opportunity through stronger cooperation.<sup>4</sup> Maintenance of a strong military is in the national interest, but cannot be maintained at the expense of all other aspects of government. True national security can only be achieved with the right combination of government programs aimed at security, prosperity, and respect for human dignity.

In keeping with the principles of the Constitution, President Eisenhower stated in his *Farewell Address to the Nation*, that “Good judgment seeks balance and progress; lack of it eventually finds imbalance and frustration.”<sup>5</sup> Seeking balance and progress across national programs in order to avoid frustration is challenging. Individuals, groups, and factions may have different intentions and goals in order to achieve balance. They take maximum advantage of the open government processes in attempts to influence government decision makers. Each entity may have a different opinion on a certain program’s impact on national security and it is often difficult to resolve between competing interests. As the health care system includes issues of economic prosperity, human dignity, and protection of personal well-being, it provides an excellent example of the difficulty balancing national resources and interests and subsequent impacts on national security.

***The revenue for more health care exists in the form of defense expenditures...billions needed for reforming health will likely come, in one way or another, from cuts in defense spending.***<sup>6</sup>

Harvey Sapolsky

National budget, debt, and deficit discussions confirm an undisputable truth; the U.S. does not have unlimited financial resources. Based on current law and policy, the Congressional Budget Office (CBO) projects defense spending to decrease significantly over the coming decade and government spending on health related programs to grow.<sup>7</sup> Unless there is a change that either decreases spending or increases government revenues, defense will be funded lower than the historical average as a percentage of GDP. The U.S. is the sole global superpower with military, economic, and cultural influence around the world, making U.S. interests a target worldwide. Future international threats to national interests require the U.S. to maintain a strong military deterrent. Meanwhile the health care demands of the population continue to grow. The health of the nation’s populace is critical to supply a capable workforce for both military readiness and general economic productivity. The combination of defense and non-defense goals of the national security strategy require the nation to validate the resources dedicated to all government programs ensuring balance for overall success.

While rising national health care costs put pressure on discretionary funds available for national defense spending, the Department of Defense (DoD) budget suffers the same pressure of health care costs within the military medical system. The DoD’s TRICARE program faces growing demand from increasing numbers of retirees – and their families – and active duty and medically retired Wounded Warriors recovering from injuries after a decade of war.<sup>8</sup> “The cost of the military health care program has more than doubled since FY2001 [to FY2011], from \$24 billion (adjusted for inflation) to \$52.5 billion, and the Pentagon projects it to continue growing.”<sup>9</sup> As seen today, military operations lead to higher use of the health care system, and even when



operations end, the military's consumption of health care will be high dealing with the lingering effects.<sup>10</sup>

Admiral William J. Fallon, U.S. Navy Retired, recently stated, "It is now widely accepted that nations with healthy populations are more likely to be productive, prosperous and peaceful and conversely, that nations with high numbers of unhealthy citizens are more likely to be poor, badly governed, weak, and prone to instability or even conflict."<sup>11</sup> Instability of other nations can quickly become a national security issue for the U.S. It becomes an issue not only because of the risk of conflict as suggested by Admiral Fallon, or that the U.S. may be drawn in militarily, but also because individuals fleeing violence and health risks from other nations increase the probability of spreading disease and creating pandemics. The Admiral's statement highlights the debate between the need to provide for the general welfare and protection of the population, and the need to protect the nation in the event of conflict through a strong military defense posture.

## **The U.S. Health Care System**

The U.S. health care system is a complex, fragmented system that has evolved over time. Four separate models generally define health care systems throughout the world: the Beveridge model, the Bismarck model, the National Health Care Insurance model, and the Out-of-Pocket model.<sup>12</sup> Appendix A contains a detailed description of each model. The U.S. health care system, based on its evolutionary development, contains elements from all of these models and has been influenced by market forces, government regulation, culture, and shifts in population demographics. The U.S. health care system is comprised of consumers, providers, and several interdependent industries. Additionally, federal and state governments have a significant impact on the system through their roles as a provider, insurer, and regulator.

### ***Consumer Access to Health Care***

The U.S. health care system begins with the consumer. Health care consumers need services and products to maintain health and well-being. Health care services range from routine visits to a doctor to diagnostic tests to complex lifesaving operations, while health care products include pharmaceuticals and medical devices. U.S. health care consumers purchase services and products through insurance or direct out-of-pocket payments. U.S. health insurance includes both for-profit and not-for-profit private insurance companies, as well as, public insurance programs from the U.S. government. Private health insurance policies vary in benefits, but starting in 2014 they must meet the minimum essential benefits outlined in the Patient Protection and Affordable Care Act (hereafter the ACA) enacted in March 2010, and upheld in part by the Supreme Court in June 2012.<sup>13</sup> A consumer who desires access to a health care service or product may have an insurance policy that will pay for all or a portion of the desired service or product. If the insurance policy covers only a portion of the cost then the consumer may pay the balance out-of-pocket. The aforementioned payments can be defined in the insurance policy as a co-payment that is a defined dollar amount or a co-share, which is a specified percentage of the cost. Additionally, Medicare and most private insurance policies (both individual and employer-based) require the consumer to pay a defined dollar amount prior to the insurance company paying the bill. This payment is referred to as a deductible. If the consumer does not have insurance then the cost is paid entirely out-of-pocket.



## ***Health Care Providers, Suppliers, and Manufacturers***

The services and products desired by the U.S. consumer are provided through a number of sources. Providers of health care services include hospitals, urgent emergency care facilities, and outpatient and nursing care organizations, as well as, primary care physicians, specialty doctors, and home care providers. Health care product providers include medical and pharmaceutical supply and wholesalers, health insurers, medical device, instrument and supply manufacturers, and pharmaceutical and biotechnology companies. Providers of health care services and products are independent industries that interact in multiple and frequently complex ways: hospitals and outpatient clinics purchase medical supplies and devices; doctors purchase medical insurance; medical supply wholesalers purchase from medical device and supply manufacturers, for example. Detailed descriptions of these industries are provided in Appendix B.

## ***Financing the U.S. Health Care System***

The health care system is financed primarily through two funding streams: the collection of funds for health care (money coming in), and the reimbursement to providers for health care (money going out).<sup>14</sup> With the exception of limited direct out-of-pocket payments, public or private insurance manage both funding streams. Direct-out-of-pocket payments include consumer purchase of health care services and products with their own money and direct payment by one industry to another for products and services. Moreover, because the management of funding streams includes public and multiple private insurers the U.S. system is a “multi-payer system.”

Private insurance companies collect funds in the form of premiums paid by individual consumers or by employers who purchase group benefit plans. Government administered insurance is collected through payroll taxes paid by employers and employees to fund government programs, such as Medicare and Medicaid with the exception of Medicare Part B which is generally funded by premiums paid for by the consumers. Funds distributed by public and private insurance are paid directly to providers at a specific reimbursement rates. Reimbursement rates are negotiated separately by each private insurance plan or regulated by the government for public insurance programs. Figure 1 depicts the two funding streams.<sup>15</sup>

## ***Government Roles***

Governments at federal, state, and local levels are deeply involved in the U.S. health care system. Government roles include, but are not limited to provider, insurer, and regulator.

*As a Provider:* The federal government serves as a provider of health care for U.S. active duty and retired military members and their families through military hospitals and clinics. Additionally, it provides health care through Veterans Affairs (VA) hospitals and facilities for veterans and active duty military who meet specified criteria. Some of the criteria include combat veterans, former prisoners of war, Purple Heart recipients, veterans who receive Medicaid and veterans who have disabilities or are separated for medical reasons.<sup>16</sup>



*As an Insurer:* Alternatively, for those active duty and retired military members and their family members who cannot, or chose not, to use military hospitals and clinics the federal government provides insurance for their health care. Furthermore, most citizens over sixty-five are insured through Medicare, and many of the indigent are insured through Medicaid a joint effort between the federal and state governments. Finally, the State Children’s Health Insurance Program (S-CHIP) covers children whose families do not qualify for Medicaid but are unable to purchase private health insurance.<sup>17</sup> The federal and state governments also jointly fund S-CHIP.

*As a Regulator:* Federal and state governments provide oversight for the entire health care system through reporting requirements and medical licensure procedural mandates. However, the insurance sector regulations are probably most readily visible to the public. Insurance is highly regulated to include regulations on premiums, reimbursement rates, actuarial values, and essential benefits. The ACA provides additional regulatory requirements and contains an individual insurance mandate that requires all consumers to possess either public or private insurance.

*Other Roles:* State and federal government are involved in research and development (R&D) of pharmaceuticals, medical technology, and new medical procedures through funding (i.e., tax considerations or direct government funding) and government research laboratories. All levels of government manage and fund public health programs; efforts range from education on life-style choices and preventive health and wellness such as building bike paths and providing vaccination programs. “Public health is the practice of preventing disease and promoting good health within groups of people, from small communities to entire countries.”<sup>18</sup> At the national level, the ACA established the Prevention and Public Health Fund (PPHF) to “provide expanded and sustained national investments in prevention and public health, to improve health outcomes, and to enhance health care quality.”<sup>19</sup> The PPHF provides funding to national programs and state governments to address the entire spectrum of public and preventive health issues. Finally, the government collects and shares health care data with consumers, health care sectors of the industry, and providers. The data is used by consumers, providers, insurers, government agencies and private industry to analyze and move towards improving health care access, quality, and costs.

## **Current Conditions**

A thorough understanding of the current condition provides the basis to address the U.S. health care system. Effective policy solutions will improve negative aspects of the system while enhancing the positive. Demand for access to care is high. Unfortunately, cost and system complexity create barriers for new entrants who could increase supply of providers or develop new ideas for major advances in health care. The ACA incorporates new regulations and policies attempting to create higher quality and wider access, but the new regulations add to an already complex system. The following discussion describes the current relationships among supply, demand, quality, and the implemented provisions of the ACA.

### ***The Relationship between Cost, Access and Demand for Health Care***



Demand pressure on the health care system is currently rising due to two critical issues: growing population with chronic diseases and an increasingly aging population demographic. While it is still unknown whether or not guaranteed access under the ACA leads to higher utilization, the debate sparked with passage of the ACA certainly increases public awareness of health care issues; present and future. The majority of the U.S. population consumes health care through insurance programs; 54% percent purchase insurance through their employer or as individuals in the marketplace, 30% participate through government or other public programs, and the remaining 16% are uninsured.<sup>20</sup>

One of the causal factors leading to higher cost and higher demand is the prevalence of chronic disease. The Milken Institute identifies seven conditions responsible for over 90% of all chronic disease incidences: cancer, diabetes, hypertension, stroke, heart disease, pulmonary conditions, and mental disorders. Of these, diabetes, hypertension, pulmonary, and heart disease can be partially attributed to life style and are the most preventable.<sup>21</sup> Twenty percent of Medicare patients were treated in the last year for five or more chronic diseases, and accounted for 50% of all Medicare spending.<sup>22</sup> The unhealthy life style of many Americans, combined with aversion to government intervention into personal choices, creates an environment for the growth of preventable chronic diseases. Four modifiable health risk behaviors - lack of physical activity, poor nutrition, tobacco use, and excessive alcohol consumption - are responsible for much of the illnesses, suffering, and early death related to preventable chronic diseases.<sup>23</sup> Today, more than half of all Americans are living with one or more serious chronic diseases and this number is expected to increase over the next two decades.<sup>24</sup> The cost of chronic disease is more than just the high consumption of care. There is a cost to the greater economy as well due to family and other caregiver implied costs and the economic opportunity losses of the patient and caregivers. For example, by itself, obesity is estimated to have cost the U.S. \$147 billion in 2008 with obese workers accounting for \$45 billion due to obesity related medical claims and excessive absenteeism.<sup>25</sup>

Currently, 10,000 individuals turn 65 every day moving many of them to the Medicare program from either the rolls of private insurance or the ranks of the uninsured.<sup>26</sup> By 2030, the percentage of the U.S. population over retirement age is projected to have grown from 13% to 18%.<sup>27</sup> These demographics will significantly increase Medicare participation. Conversely, according to World Bank statistics, the population of the U.S. is growing at less than 1% for at least the last four years.<sup>28</sup> Changes in demographics and government policies, like those in the ACA, create a high demand for access to the health care system without a growing working population to support it.

Recently, “the share of Americans without health insurance declined, with the number of uninsured dropping by 1.3 million people from 2010 to 2011. A major factor was an influx of newly insured young adults, many of whom benefitted from a provision in the ACA requiring insurers to let parents keep adult children on their plans up to age 26.”<sup>29</sup>

### ***The Relationship between Access, Quality and Supply of Health Care***

The supply of doctors in all specialties, including primary care, is projected to grow but not at a pace quick enough to keep up with demand. Table 1 depicts a current and future shortage of



doctors in all specialties.<sup>30</sup> The ACA dedicates the entirety of Title V to the health care work force, expanding the work force, understanding future needs, and work force training.

Year	Supply – All Specialties	Demand – All Specialties	Shortage – All Specialties	Shortage – Primary Care	Shortage – Non-Primary Care
2008	699,100	706,500	7,400	7,400	0
2010	709,700	723,400	13,700	9,000	4,700
2015	735,600	798,500	62,900	29,800	33,100
2020	759,800	851,300	91,500	45,400	46,100
2025	785,400	916,000	130,600	65,800	64,800

Table 1. Projected Supply and Demand, Full-time Equivalent Physicians Active in Patient Care, 2008-2025

Multiple provisions in the law focus on increasing the supply of medical professionals in primary care and in underserved areas or populations.<sup>31</sup> For example, the law supports health care workers through loan forgiveness for those who commit to serve medically underserved areas or populations.<sup>32</sup> Other sections address training and education of the health care work force by giving medical schools and universities grants to develop training that includes interdisciplinary care, patient centered medical homes, and cultural competency.<sup>33</sup> It is not enough to simply address the shortage of health care workers, but those workers must be trained to provide high quality care to patients.

In a free market economy, a dramatic gap between supply and demand would significantly shift prices. However, in the heavily regulated health care system, the government intervenes to suppress costs. Various industries within the health care system, like large insurance companies, use their size to extract discounts from other market sectors like hospitals; similar to how a company like Walmart might extract discounts from suppliers. For instance, the federal government sets state reimbursement rates for Medicaid based on overall state income levels and general economic indicators for the state, not the specific medical treatment market within the state.<sup>34</sup> This formula for setting prices skews the market forces. A market with wide gaps between supply and demand creates consequences like long waiting times or very short doctor-patient interaction time, both of which can reduce access and the quality of care. The ACA predominately addresses the demand-side of the equation but, even before full implementation of the ACA, there are already supply shortages across the country.

### ***Regulation of Health Care in Relation to Cost***

*The pervasive nature of health care regulation stems from the fundamental concerns that are at stake. Most observers acknowledge that some form of oversight is needed when factors as essential as life and health are involved. Even those who are especially suspicious of heavy-handed government bureaucracy see a public interest in some form of external supervision of this field.<sup>35</sup>*

Dr. Robert I. Field



Federal, state, and local governments and private organizations provide oversight and establish regulatory requirements in an attempt to increase access, lower costs, and improve quality of care. Regulatory agencies monitor health care practitioners and facilities, provide information about industry changes, promote safety, and ensure legal compliance and quality services. State government provides oversight to many of the central participants in the health care system, including physicians, hospitals, and insurance companies. Likewise, most public health programs, including sanitation, restaurant inspections, and investigations of epidemics, are the responsibility of state and local regulators with federal collaboration at the national level. Private regulators play a critical role in the oversight of the medical profession, including those that accredit medical schools, administer licensure examinations, and certify specialists. State medical boards use privately administered examinations in granting medical licenses, and the Medicare program relies on specialty certification as an indicator of physician quality.<sup>36</sup>

The maze of regulations has both positive and negative impacts. Its strengths include the fact that various levels of regulators (i.e. federal, state, local and private) each provide certain proficiencies. Private organizations, composed of field professionals, bring technical expertise to regulatory oversight while state agencies are closer to care delivery and better understand regional needs than federal agencies. Shortcomings include the potential for private entities' self-interest skewing oversight more towards protecting reputations rather than patients and the often-slow response from federal bureaucracies.<sup>37</sup> The federal, state, local, and private oversight organizations do not necessarily coordinate their regulatory or licensing activities, which can increase inefficiencies. A CATO Institute study in 2004 estimated the cost of health care regulation at \$1,500 per household and while measures of regulation cost may differ depending on how it is defined, it is complex and costly.<sup>38</sup>

The ACA addresses the lack of coordination by creating a National Health Care Workforce Commission responsible for identifying barriers and supporting solutions to increase coordination among federal and state agencies in the health care system. It provides grants for states to develop health work force strategies.<sup>39</sup> Yet even with the intent to improve coordination and reduce barriers within the system, the ACA institutes 181 new regulations, not including regulations the states will need to implement their exchanges for Medicaid expansion.<sup>40</sup> These new regulations could add to the complexity and cost of the health care system.

### ***The Relationship between Incentives and Cost of Health Care***

The “Fee-For-Service” (FFS) payment model currently ingrained in the health care system reimburses providers based on services delivered and therefore incentivizes health care providers to conduct more treatment. Neither the quality of the care provided, nor patient outcome, is a consideration in this payment model. The insurance provider, as intermediary for payment, disassociates the patient from an economic incentive to understand the cost. Faced with two treatments of equal efficacy the patient has no incentive to conserve resources and choose the less costly. Compounding the problem is the lack of transparency in price setting making it difficult for patients to make informed decisions even with an economic incentive. In a technologically advanced country where infrastructure is readily available, the strategic use of Information Technology (IT) assets is lacking. The misaligned and disassociated incentives, combined with



under-use of technological assets, raise costs and create barriers for market forces to work in the health care system.

### ***Relationship between Quality, Cost, Innovation, and High Technology of Health Care***

Even though U.S. health care is highly regulated, the market economy encourages innovation and entrepreneurial risk taking with high pay-offs for successful ventures. The world's largest and most innovative pharmaceutical companies Pfizer, Johnson & Johnson, and Merck are headquartered in the U.S.<sup>41</sup> Each company invests significant resources into R&D for the next break-through drug treatment and are thus leading the world in innovation. At the same time other pharmaceutical companies focus on different formulations of successful drugs or generics. Medical technology companies in the U.S. are highly regarded globally and invest in R&D at twice the rate of other domestic manufacturing sector.<sup>42</sup> This innovation and use of technology creates the most advanced, quality medical treatments in the world, but at a cost that limits availability to all. The high cost of innovation in the area of cancer drug treatments is an excellent example. The average U.S. cost of the latest cancer drugs range from \$5,000-10,000 per month, but the high cost and limited access to the latest technology leads to U.S. outcomes not substantially better than in other countries.<sup>43</sup>

### ***The Relationship between Cost, Quality, Access, and Culture***

The diversity of the U.S. population makes it unique from nearly every other country. The 2011 U.S. Census data depicted in Figure 2 illustrates that over thirty-seven percent of the population is identified as part of a racial or ethnic group minority.<sup>44</sup> The tradition of welcoming immigrants provides widely divergent cultures and different perceptions of health care and wellness. Racial and ethnic minorities tend to receive a lower quality of health care than non-minorities, even when access-related factors, such as insurance status and income, are taken into account.<sup>45</sup> Culturally competent care can alleviate disparities and is an essential element of quality care.<sup>46</sup> Cultural and linguistic competence is a set of consistent behaviors, attitudes, and policies that come together in a system, agency, or among professionals and enable effective work in cross-cultural situations.<sup>47</sup> Providing care that is culturally appropriate reduces wasteful duplication due to confusion between provider and patient, improves prevention, wellness, and outcomes as treatments are better followed, and improves access as patients seek care they understand.

## **Outlook for the Health Care Industry**

Individuals, governments, and private businesses are expected to adjust their behaviors as the ACA is implemented and changes to the health care system occur. These changes potentially affect cost, quality, and access in the U.S. health care system. In addition, national security threats and general economic trends will affect the health care system as competition for limited financial resources intensifies.

### ***Impacts on Health Care Industry due to Significantly Reduced Defense Spending***



The reduction of defense spending will directly affect the care that is provided to military members and their families. The impact on the rest of the health care industry is relatively minor. Moreover, most manufacturers and distributors of medical devices, medical supplies, and pharmaceuticals count on the DoD for only a small portion of their business.

The growing cost of DoD health care is a significant issue. Between fiscal year 2001 and fiscal year 2012, the military health care budget more than doubled and now consumes about 10 percent of the baseline defense budget.<sup>48</sup> Because of this, the Pentagon's fiscal year 2013 budget proposal include requests for multiple reforms in the DoD health care system. These reforms include increases in premiums and deductibles for working age retirees, the implementation of an enrollment fee for TRICARE for Life, and other measures designed to reduce DoD health care costs. If implemented by Congress, the Pentagon's proposals could slow the projected growth of the military's health care costs, allowing savings of \$12.9 billion between FY 2013 and FY 2017.<sup>49</sup>

DoD health care costs combined with compensation and military retirement benefits are all targets of reforms and cost cutting in today's constrained budget environment. "The threat that mounting personnel costs pose to military readiness has not gone unnoticed by the nation's political and military leaders. In the Pentagon's FY 2013 budget request, Secretary of Defense Leon Panetta and the Joint Chiefs of Staff highlight the need for significant changes to the Defense Department's existing pay, health care, and retirement systems."<sup>50</sup> If proposed reforms are not accepted, increasing costs of DoD health care are likely to consume an even larger portion of a shrinking DoD budget and could significantly impact operational readiness and capabilities.

### ***Supply and Demand: Demographics, Preventative Care, and Healthy Life-style Choices***

The effort to reduce the uninsured population strengthens with a provision in the ACA that expands Medicaid coverage in 2014. While some states have opted not to expand Medicaid coverage, many states will increase Medicaid coverage taking advantage of the high level of federal funds for the expanded population. One state, Oregon, has had experience with Medicaid expansion. They found that those individuals with Medicaid consumed more health care, with a focus on primary care, versus people without any insurance.<sup>51</sup> Based on these findings it is expected that expansion of Medicaid across the country will increase demand and utilization of health care substantially. Cost controls envisioned in the ACA could mitigate possible increased costs, but further changes to the law may be necessary.

Likewise, the growing elderly population will increase the Medicare population and their use of health care. The U.S. health care cost per capita is roughly comparable to European health care systems with similar outcomes until the age of sixty; at that point the lines significantly diverge and the U.S. spends an estimated \$40,000 per capita whereas Germany only spends \$10,000.<sup>52</sup>

Improved life-style choices, screenings, and tests are effective options for reducing health care costs. The ACA provides incentives for consumers to take responsibility for their own health. Under the ACA, 54 million Americans will now be covered for preventive services with no co-pay or deductible to encourage them to obtain preventive care.<sup>53</sup> A Health Affairs study reviewed 20 screening tests and estimated that "increasing the use of these services from current levels to 90 percent...would result in total savings of \$3.7 billion, or 0.2 percent of U.S. personal health



care spending.”<sup>54</sup> While the savings in health care costs may seem small, another advantage to incentivizing preventive measures vice curative measures is mitigating lost work hours and healthier communities. The projected loss in economic productivity could be between \$390 billion and \$580 billion annually by 2030.<sup>55</sup>

The costs associated with preventable obesity will continue to burden the U.S. health care system. In fact, Figure 3 projects that the trends of obesity rates will continue to rise within the U.S.<sup>56</sup> Changing attitudes and culture surrounding health issues, like diet and exercise, require a long-term strategy to change the overall health of society. Incentives in the ACA to improve preventive care as well as public health initiatives to educate and change the trend in chronic disease aim to curtail this increasing health care demand.

### ***Incentives: Payment System, Transparency, and Health Outcomes***

The ACA provides incentives for hospitals, clinics, and other providers to form Patient Centered Medical Homes (PCMHs) and Accountable Care Organizations (ACOs) in which coordinated care is executed. The PCMH model represents a transformation in primary care in which physicians have an on-going and collaborative relationship with a patient. The physician is “responsible for providing for all the patient’s health care needs or taking responsibility for appropriately arranging care with other qualified professionals.”<sup>57</sup> The PCMH moves away from a pure FFS payment system and towards capitation or value-based incentive systems that reduce costs by improving outcomes and reducing unnecessary or redundant care. PCMH demonstrations are incentivized by the ACA through grants based on performance. ACOs accomplish the same effect of coordinated and outcome focused care by unifying multiple providers into one organization.

PCMH and ACO demonstrations are already occurring throughout the country. Insurance companies such as Blue Cross and Blue Shield (BCBS) have PCMH initiatives in 40 states across the country and Washington, D.C. that explore effective means of provider reimbursement and integrate quality improvement, care management, and patient educational tools into primary care practices.<sup>58</sup> The ACA is causing behavior change that could trend the U.S. away from the traditional FFS model reducing inefficiencies that unnecessarily raise costs. The movement towards PCMH and ACO does not address patient awareness of pricing, but does at least encourage cost informed decision-making by providers. The recent release of hospital pricing lists by the Department of Health and Human Services (HHS) is a step towards transparency and allows patients to make more informed pricing decisions.<sup>59</sup> The more critical information is reimbursement rates provided by insurance plans. Although there are no plans for that level of transparency, it is foreseeable given advancing IT systems.

### ***Innovation and Technology Solutions: Reducing Inefficiencies***

Using technology to develop a standard Electronic Health Record (EHR) system has the potential to improve quality of patient care, accuracy of diagnosis, health outcomes, care coordination, provider practice efficiencies, and cost savings. The Health Information Technology for Economic and Clinical Health (HITECH) Act encourages physicians and hospitals to implement EHR systems. Over the next ten years, the HITECH Act provides up to \$27 billion of



incentives for installing and effectively using qualified EHR systems.<sup>60</sup> One study estimates that 40,000-80,000 thousand deaths occur in U.S. hospitals annually due to misdiagnosis.<sup>61</sup> Clinical Decision Support algorithms within an EHR system can help reduce diagnostic error rates. In support of EHR cost savings, studies done by RAND and the Center for Information Technology estimate annual net savings to the health care system of about \$80 billion (in 2005 dollars), relative to total spending for health care of about \$2 trillion per year.<sup>62</sup>

A prominent provision within the ACA regarding research is the establishment of the Patient-Centered Outcomes Research Institute (PCORI). It expands on Comparative Effectiveness Research (CER) that compares alternative methods of preventing, diagnosing, treating, and managing medical conditions.<sup>63</sup> The use of CER can reduce inefficiencies and produce better outcomes for patients. Prior to the ACA, the Recovery and Reinvestment Act of 2009 appropriated over one billion dollars for CER projects. Organizations like HHS and the National Institutes of Health quickly obligated the funds to support this initiative; it is still too soon to understand the effectiveness of these efforts.<sup>64</sup>

## **Challenges for the Health Care System**

The main challenge for the health care system in the U.S. is to address the negative aspects of performance while maintaining the positive features, effectively keeping the good and discarding the bad. It is a tenuous environment in which increasing costs, demand for access, and regulations complicate future planning. Strategically, the U.S. must foster wellness and reinforce healthy life-style choices, minimize administrative and medical inefficiencies and redundancies, and leverage technological, data and IT solutions to decrease cost and improve quality. Simultaneously, the policies implemented to reduce the negative conditions within the system should avoid unintentionally harming the positive attributes within the system: the innovation, quality, and effective messaging of public health issues. These concepts support the ultimate strategic objectives to control health care costs from crowding out other efforts at the national, state and individual level as well as increase the productivity and well-being of the population. The current environment creates challenges of cost, access, and quality that, if balanced properly, will go a long way towards ensuring that the U.S. health care system is more equitable, effective, and viable.

### ***Building Communities to Respond to Access, Cost, and Quality***

Demographics, chronic disease, and life-style choices impact health care demand, and, because health care is more than simple interaction with a health care provider, community and societal influences matter. Communities provide encouragement and support for better health. The challenge is encouraging community development and integration of health care beyond the provider's office.

In France, there is an emphasis on community care through regional associations that results in better outcomes at lower costs. A 2004 study comparing treatment protocols of severe lung disease in France and the U.S, showed better outcomes at a lower cost in the French model of care focused on the community rather than in the U.S. model providing care in a hospital or institution.<sup>65</sup> Germany and the Netherlands created a joint program with an integrated approach to combat childhood obesity. While it was considered a health care program, it was based in thirty-nine



schools providing education on health and nutrition and physical activity, including active commuting to school.<sup>66</sup> Community-based efforts integrate health care into the larger social, ethnic, or local community. The ACA highlights ACO and PCMH as models to explore and support in the U.S. health care system. ACOs and PCMHs could promote the community approach to health care with the intent to treat the person, not only the illness. Successful health care strategies require ideas that stretch traditional medical care and expand into the community with public health, education, and cultural and societal awareness.

The ACA attempts to bring all Americans into the health care community by providing access to medical insurance, but just providing access to insurance is not enough. Building communities that include those on the fringe is the next step. The assumption by many experts is that better results from Medicaid expansion, like that in the ACA, will require more aggressive community outreach and coordinated care; complementary actions to encourage health.<sup>67</sup> When the mandatory insurance coverage provision of the ACA is implemented, there will still be a portion of the population that remains without access to medical insurance. Focusing on efforts to build more care that is effective and making access to insurance stretch into access to care is a holistic approach to developing communities. With health care integrated into strong communities a better understanding of the meaningful access dilemma will be developed and suitably addressed.

Health care providers are a critical element to improve access and quality in health care when exploring ways to build stronger communities that are more connected. Incorporating all providers, not just doctors, into the larger community and providing education on the culture of the community makes it easier for the health care thread to spread. One study showed that culturally tailored HIV/AIDS education materials led African-American women to more testing, increased preventative behaviors and more discussions with their friends on the topic.<sup>68</sup> Ensuring cultural training for providers or working with them to understand the sensitivity of culturally appropriate health materials to deliver care that is more effective remains a challenge for the health care system.

### ***Providing Symmetric, Accessible, Transferable Information to Increase Access, Quality, and Lower Cost***

U.S. health care has not consistently implemented technology resources across the system. The use of high technology in medical diagnostics and medical treatment is among the best in the world. Conversely, the employment of IT on the administrative and business side of health care lags behind much of the developed world.<sup>69</sup> Effective use of IT could positively affect access to care, the quality of care, and eliminate system inefficiencies. The challenge is to consistently and effectively employ technology throughout the health care system.

Although developed on a market-based economic framework, many factors make it difficult for market mechanisms to work in the U.S. health care system. A properly functioning market requires some level of information symmetry providing roughly equal information so no one stakeholder has an information advantage in the market place. Transparency and accessibility of data can bring symmetry needed for a healthy market. Information on costs, payment process, outcomes, and patient and provider statistics should be accessible and transferable. If the goal of the health market is to provide the best care, to the most people, at a market-clearing price then the current structure



fails to support these goals. The payment system hides the cost from consumers and even some providers. Conversely, insurers and providers are not completely aware of the patient's (i.e. consumer's) health. Policies making pricing models and cost more transparent would provide a level of balance needed for both providers and consumers to make more cost-informed decisions about care.

In addition to applying technology to support changes in cost, pricing, and effectiveness, improved usage of technology in the business of health care could fix the fractured nature of patient information. Previous challenges addressed transparency and sharing of general data to reduce costs and increase quality. Instituting secure ways to share specific patient information could increase efficiency and effectiveness of care on an individual level, and has the potential to drive down costs. The complexity of the environment, including regulations from multiple governmental levels, the need for privacy, and the speed of technological advances makes this a difficult proposition. System flexibility is a primary need as technology and medical care advances.<sup>70</sup> Access to patient data in any health care setting increases the opportunity to eliminate unnecessary or redundant care and ensures a provider has basic patient information. Implementing IT in a more effective manner on the business side of health care will break down the asymmetry and realign business structure with proper incentives to provide quality care, to the most patients, at a good market price.<sup>71</sup> The need to share data spans the health care system and is the responsibility of all participants to make information symmetric, accessible, and transferable.

### ***Maintain Innovative Momentum***

The U.S. health care industry leads the world in innovation and provides the highest quality care in many areas. Similar to innovative companies in other sectors those on the leading edge of advanced medicine invest significant resources and take enormous risks. When the risks lead to breakthrough medical advancements the pay-off can be large. This is the same as other industries; but if medical innovation limits those who can access the system, based on price, could mean the difference in life or death. The ultimate challenge of the U.S. health care system is to respond to these issues without compromising the innovative environment that allows for medical and pharmaceutical advancements.

## **Policy Recommendations**

If not addressed, the previously identified challenges of building healthy communities, utilizing information technology, and maintaining innovative advantages could have adverse effects on cost, access, and quality of health care. Overcoming these challenges will require coordinated effort between federal, state, and local governments, providers, and patients. Each challenge is multi-dimensional and frequently overlapping. A potential solution for one may have positive or negative impacts on another. For that reason, health care policy options must be considered using a holistic approach across the three primary aspects of the health care system; cost, quality, and access.



## ***Rate Setting***

Creating policy that balances cost, access, and quality is difficult. Addressing the challenges of one can have adverse effects on the other two. A policy that focuses on cost could have adverse effects quality and access. Efforts to mitigate adverse effects on quality and access should be made prior to cost focused policy implementation. One policy option available to the federal government is a proactive policy addressing hospital and clinical rate setting. A study in the January 2012 edition of *Health Affairs*, reported over half of the nation's health care spending went towards these two areas; 31% in hospital services and 20% for physician and clinical services.<sup>72</sup> There are potentially positive and negative effects of rate setting. However, the State of Maryland has adopted such a policy and provides a current, working model to examine this policy recommendation.

In 1977, Maryland addressed acute care facility costs at the state level using an independent agency to set rates. By establishing the Maryland Health Services Cost Review Commission, the state Legislature set reasonable prices while generating funds for patients who could not pay their medical bills. The commission sets rates for the state's acute-care hospitals and for privately insured patients at the state's specialty hospitals. The rates take into account each hospital's wages, charity care and severity of patient illnesses.<sup>73</sup> Medicare, Medicaid, private insurance companies and out-of-pocket payers are billed at the same rate, which eliminates cost shifting found in other states where private insurers are billed more to make up for lower Medicare and Medicaid reimbursement rates. Figure 4 illustrates that Maryland held their hospital costs significantly below the national average.<sup>74</sup>

Maryland used this policy to reduce hospital and clinical costs while maintaining quality of care. The Commonwealth Fund's 2009 ranking of Maryland's health care system was seventeen of fifty-one. This rating assessed cost, quality, and access. Even with lower prices, Maryland's hospitals still maintain an operating margin above two percent while maintaining acceptable quality and access.<sup>75</sup>

This rate setting policy directly supports pricing transparency requirements in the ACA. The ACA requires by January 2014 all hospitals annually publish a public list of the hospital's standard charges for items and services as well as implement and publicize a written financial assistance policy.<sup>76</sup> Maryland sets rates for each facility and reports those rates to the federal government. Publishing the rate list improves transparency and consumerism within the community. The ability to research pricing and quality metrics fits well into the U.S. free market system and reduces asymmetry in information between providers and consumers.

However, rate setting could negatively impact quality if rates are set too low and do not cover hospital overhead costs, medical professional's salaries, and administrative costs. Japan employs an aggressive rate setting model and provides an example of the potential negative repercussions. The Japanese model is effective in setting prices and controlling costs as evidenced by their per capita expenditures of \$3,958 as compared to the U.S. per capita expenditures of \$8,606.<sup>77</sup> However, the Japanese have many hospitals and clinics that are in financial trouble. T.R. Reid, in his book *"The Healing of America,"* stated that Japan actually pays too little for its health care.<sup>78</sup>



One of the keys to avoiding this issue is ensuring that the state commission or board acknowledge the cost of living and population demographics during rate setting.

While Maryland's system has effectively contained its overall costs, it does increase total Medicare expenditure for the State of Maryland. As part of an agreement with the federal government, Medicare pays state-established rates, which include a subsidy to cover charity care, as long as Maryland's hospital costs grow slower than Medicare payments nationwide.<sup>79</sup> A May 2013 CMS report that lists Medicare hospital billing and payment data for the top one hundred most frequently billed charges demonstrates the differences in pricing and hospital costs.<sup>80</sup> While the average amount paid per procedure between states is similar, the average amount billed is higher in the other states than in Maryland. The difference between the amount paid and the amount billed is lost revenue to the hospital. Hospitals in other states compensate for the lost revenue by cost shifting (i.e., billing higher rates) to people with employer-based or private insurance plans.

Recommendation - The federal government adopt a rate setting policy that:

- Incentivizes each state through Medicare and Medicaid payments to establish an independent board that operates similar to the Maryland commission and sets rates for hospital services.
- Creates national standards for hospital costs and cost growth (possibly through CMS).
- Requires federal inspection of each state's rate setting program to ensure that rate setting is accomplished and ensure that rates are being enforced at each facility.
- Provides higher Medicare reimbursement for states meeting nationally developed standards for hospital costs and cost growth.
- Increases Medicaid funding to states that meet national standards for hospital costs and cost growth.
- Requires hospitals and clinics to receive the same reimbursement rate for Medicare, Medicaid, private insurance companies, and uninsured patients. This would enable hospitals to develop budgets that are more accurate and allow consumers to shop for their care.

### ***Evidence-Based Medicine***

Quality issues in health care are measured through numerous metrics by different organizations. An example of a metric used for measuring quality is hospital readmission rates for a patient who returns in less than thirty days after treatment ends.<sup>81</sup> One reason for hospital readmissions is errors in diagnosis and treatment. Reasons for these errors include failure to follow the most effective diagnosis/treatment procedures and/or lack of knowledge of the most effective diagnostic/treatment procedures. One method that can be used to lower rates of misdiagnosis and incorrect treatment is the practice of Evidence-Based Medicine (EBM).

Implementation and employment of Evidence-Based Medicine (EBM) improves the quality of outcomes. EBM is the practice of medicine in which physicians find, assess, and implement methods of diagnosis and treatment based on the best available research, their clinical expertise, and the needs and preferences of the patient.<sup>82</sup> Many studies have proven EBM is effective in



treating specific medical procedures. A 2000 study by investigators at Hackensack University Medical Center and the University of Medicine and Dentistry of New Jersey reviewed the impact of evidence-based procedures on patients with pneumonia and pulmonary disease.<sup>83</sup> The study found the use of EBM produced significant reductions in length of stay and increased revenue resulted without incurring an increase in readmission rates.<sup>84</sup> EBM has been used effectively for treatment and can be expanded to achieve cost savings while maintaining quality outcomes in hospitals, clinics, and other outpatient facilities. However, the use of EBM must overcome resistance from physicians and health care professionals that view medicine as an art vice a science, and therefore believe the standardized practice of EBM stifles innovation.

Recommendation - The federal government adopt an EBM policy that:

- Establishes national standards for EBM to include performance criteria and ensure standards are supported by sufficient data.
- Integrates EBM into medical universities curriculum and licensing exams for physicians, nurse practitioner, physician assistants, and nurses.
- Provides grants and subsidies to medical universities, hospitals, clinics, and individual physicians upon meeting national standards for EBM.
- Establishes EBM standards on which medical services can be provided by a nurse practitioner without a physician's oversight.
- Penalizes physicians failing to meet EBM standards and possibly suspension of licenses to practice medicine.
- Develops a web-based database that contains EBM performance standards and EBM procedures to enable easy access.
- Requires hospitals and clinics to provide patients the ability to connect electronically to a nurse practitioner and receive guidance based on EBM practices in order to eliminate unnecessary visits to the emergency room and build patient confidence.
- Directs DoD to test EBM as its culture supports the use of checklists and performance standards.

### ***Information Technology***

To decrease medical errors and increase patient safety providers must have the right patient information. When a patient enters a hospital, the individual's medical information should always be accessible. EHR is an effective way to share and gain access to patient information via electronic means. The HITECH Act provides policy on the establishment of EHR. However, it does not direct a national system that enables all health care facilities to access the EHR of any patient in the country. Two concepts that can contribute to a successful national EHR are smart cards and cloud based technology.

The first concept, a smart card, is a small wallet-sized card or similar device with an embedded integrated circuit chip. The chip is a powerful minicomputer that can be programmed for different applications.<sup>85</sup> A national health care smart card would contain information required to receive health care in any facility. Canada and Taiwan use this technology to mitigate administrative costs and improve access.<sup>86</sup>



The second concept is the accessibility of EHR at any health care facility in the U.S. As previously stated, the HITECH Act is moving the U.S. towards a national EHR, but has experienced difficulties in implementation due to interoperability and costs issues. Any national EHR concept will be costly, but one recommendation to move forward is to use cloud technology to mitigate interoperability issues. Cloud computing is internet based computing, whereby shared resources, software and information are provided to computers and other devices on-demand, like electricity.<sup>87</sup> One advantage of cloud technology is that any web-enabled device can gain access.<sup>88</sup> Access to the national cloud would be strictly controlled via national access standards with States acting as the executor of the policy.

Recommendation - The federal government adopt an EHR policy that:

- Requires every insured individual to have a smart card in order improve quality and access, and reduce administrative costs. Implementation of the smart card would be challenging. Issuance of smart cards could be done at the state level while following national guidelines. This could be done in a similar manner as a driver's license. People would get their smart card at a driver's license issue point similar to a voting identification card. Children could get their smart card from the hospital when they are born.
- Mandates a national cloud-based EHR system.

### ***Prevention: Reducing Demand and Increasing Access***

Kevin Bloye, a spokesperson for the Georgia Hospital Association, said, "We're not ready. There simply aren't enough resources in the current health care system to meet the oncoming demand for care, not just in Georgia but everywhere."<sup>89</sup> Increased demand for curative health care has multiple adverse effects that include shortages in providers, increase in health care spending, longer wait times to access health care facilities, and possible decrease in quality of care due to large patient volumes, which increase provider to patient ratios. One mitigation technique is to lower demand through public health efforts. The U.S. should attack the problem (i.e., why people are getting sick) instead of treating the symptoms of the problem (i.e., the illness itself). Public health programs have the greatest potential for protecting the public and reducing demand for expensive health care products and services.<sup>90</sup> Prevention is a subset of public health and includes measures such as vaccination programs, school nutrition programs, and programs to fight childhood obesity.<sup>91</sup>

An example of a current preventive health program is "Let's Move!" "Let's Move!" is a comprehensive initiative, launched by the First Lady, and dedicated to solving the challenge of childhood obesity within a generation.<sup>92</sup> Similar to previous public health campaigns to change societal attitudes about smoking, the "Let's Move!" campaign attacks the scourge of chronic health issues brought on by obesity before they start. Monetary incentives that influence life style choices can reinforce preventive health programs. Taxes are a form of monetary incentive available to federal and state governments. "Tobacco research has shown that smoking rates have dropped off dramatically after cigarette prices rose nearly 50 percent in the past decade, and other food studies have concluded that a 10 percent tax leads to about a 10 percent reduction in calories consumed of the taxed product."<sup>93</sup> The U.S should pursue a comprehensive preventive health policy to promote



better life style choices and healthy living. The policy should include monetary incentives, education, and an advertising campaign. The ACA and other existing policies and programs contain provisions aimed at improving preventive health. The policy recommendations in this paper are intended to complement the ACA.

Recommendation - The federal government adopt additional preventive health policies that:

- Incorporate a value added tax on unhealthy foods (e.g., foods with unhealthy amounts of sugar, salt, caffeine, or trans fats, etc.). The aim of this tax is to discourage consumption of unhealthy foods. The Food and Drug Administration would decide which foods and/or amounts of unhealthy ingredients are subject to the tax.
- Implement a national education campaign explaining the adverse effects of unhealthy lifestyle choices and the correlation to healthy living, better life style choices, and lower health care costs. This is already being done to address cigarette smoking. The new campaign would target the relationship of poor diet, sedentary life style, proper sleep habits, etc. to chronic disease, long term health, and health care costs.
- Incentivize providers to recommend early intervention activities and/or prevention activities that can detect and lower chronic disease incidence. Providers would be incentivized through greater reimbursement rates for preventive services.
- Incentivize consumers to use preventive services through the elimination of co-payments or co-shares for preventive services. Private insurance would be subsidized by the government for making preventive services free. Medicare and Medicaid patients would receive the same preventive services for free.

### ***Maintaining Momentum in Innovation***

As addressed early in the paper, innovation in the U.S. is an important part of maintaining quality in the health care system. The U.S. is one of the world's most technologically advanced nations, yet actions intended to reduce health care spending and the national debt can have unintended consequences of stifling innovation. Increased taxes on medical devices or pharmaceuticals can reduce a company's profit margins and operating budgets. If companies are forced to absorb these costs, they may reduce research and development funding and subsequently experience a loss in innovation and new technology. A similar drop in innovation will occur if the federal government, when faced with budget deficits, reduces federal research and development funding to hospitals and universities for medical research.

Recommendation - The federal government adopt health care innovation policies that:

- Reward companies, health care facilities, and universities through subsidies for future research and development each time the organization creates new technology or products that are proven to enhance health outcomes.
- Extend the existing research and development tax credit that expires in December 2013 to incentivize research and development that produces innovative technologies.

## **Conclusion**



The U.S. health care system is complex, expensive, and fragmented and the U.S. government fills a number of roles. If no changes are made, costs are expected to increase exponentially over the next 30 years. Rising national health care costs pressurize discretionary funds available for defense spending and threaten the ability to provide for the common defense of the nation. Creation and implementation of health care policy to challenge these trends is difficult, because competing views and interests must all be considered during debate. Many of the recommended policies will be opposed by one or more interest groups within the U.S.

Pursuit of these recommended policies to improve cost, access, and quality of U.S. health care are essential to sustaining the general welfare of the population. The ACA, the most recent attempt at health care reform policy, will likely require additional legislation as consumers, providers, insurers, state governments, and various members of industry react to the implemented reforms. The recommended policies in this paper form a starting point from which policy makers can continue health care reform. Failure to address the issues associated with the current health care system could negatively impact the American populace, because of lower quality, decreased access, and increasing disparities where only those who can pay for health care themselves can gain access to high quality care. A decline in welfare of the population could adversely affect National Security and other public sectors. For these reasons, health care reform in the U.S. must continue to be pursued by public policy makers.



## Four Models of Health Care

In *The Healing of America*, T.R. Reid analyzes various health care systems throughout the world and compares those systems to the U.S. health care system. He offers recommendations to be considered for future change to the U.S. health care system; some of which are already being implemented through the ACA. Additionally, he describes four different health care systems. The descriptions of each model found below are excerpts from *The Healing of America*.

### The Beveridge Model

This system is named after William Beveridge, the daring social reformer who designed Britain's National Health Service. In this system, health care is provided and financed by the government through tax payments, just like the police force or the public library.

Many, but not all, hospitals and clinics are owned by the government; some doctors are government employees, but there are also private doctors who collect their fees from the government. In Britain, one never receives a doctor bill. These systems tend to have low costs per capita, because the government, as the sole payer, controls what doctors can do and what they can charge.

Countries using the Beveridge plan or variations on it include its birthplace Great Britain, Spain, most of Scandinavia and New Zealand. Hong Kong still has its own Beveridge-style health care, because the populace simply refused to give it up when the Chinese took over that former British colony in 1997. Cuba represents the extreme application of the Beveridge approach; it is probably the world's purest example of total government control.

### The Bismarck Model

This model is named for the Prussian Chancellor Otto von Bismarck, who invented the welfare state as part of the unification of Germany in the 19th century. Despite its European heritage, this system of providing health care would look familiar to Americans. It uses an insurance system — the insurers are called “sickness funds” — usually financed jointly by employers and employees through payroll deduction.

Unlike the U.S. insurance industry, though, Bismarck-type health insurance plans have to cover everybody, and they do not make a profit. Doctors and hospitals tend to be private in Bismarck countries; Japan has more private hospitals than the U.S. Although this is a multi-payer model — Germany has about 240 different funds — tight regulation gives government much of the cost-control influence that the single-payer Beveridge Model provides.

The Bismarck model is found in Germany, France, Belgium, the Netherlands, Japan, Switzerland, and, to a degree, in Latin America.



### **The National Health Insurance Model**

This system has elements of both Beveridge and Bismarck. It uses private-sector providers, but payment comes from a government-run insurance program into which citizens pay. Since there is no need for marketing, no financial motive to deny claims, and no profit, these universal insurance programs tend to be cheaper and much simpler administratively than American-style for-profit insurance.

The single payer model has considerable market power to negotiate for lower prices; Canada's system, for example, has negotiated such low prices from pharmaceutical companies that Americans have spurned their own drug stores to buy medicines in Canada. National Health Insurance (NHI) plans also control costs by limiting the medical services they will pay for, or by making patients wait to be treated.

The classic NHI system is found in Canada, but some newly industrialized countries — Taiwan and South Korea, for example — have also adopted the NHI model.

### **The Out-of-Pocket Model**

Only the developed, industrialized countries — perhaps 40 of the world's 200 countries — have established health care systems. Most nations are too poor and disorganized to provide mass medical care. The basic rule in such countries is that the rich get medical care; the poor stay sick or die.

In rural regions of Africa, India, China, and South America, hundreds of millions of people go their whole lives without ever seeing a doctor. They may have access, though, to a village healer using home-brewed remedies that may or not be effective against disease. In the poor world, patients can sometimes accumulate enough money to pay a doctor bill; otherwise, they pay in potatoes or goat's milk or child care or whatever else they may have to trade. If they have nothing, they do not get medical care.

These four models should be fairly easy for Americans to understand because the U.S. contains elements of all of them in our fragmented national health care apparatus. When treating U.S. veterans, the U.S. is a classic Beveridge model like Britain or Cuba. For Americans over the age of 65 on Medicare, the U.S. employs a NHI system similar to Canada. Working Americans who get insurance on the job are in a Bismarck model, as used in Germany. For the 15 percent of the population who have no health insurance, the U.S. is Cambodia or Burkina Faso or rural India, access to a doctor is available if the individual can pay the bill out-of-pocket at the time of treatment or if you're sick enough to be admitted to the emergency ward at the public hospital.

The U.S. is unlike every other country because it maintains so many separate systems for separate groups of people. Other countries have settled primarily on one model for everybody. This is much simpler than the U.S. system; it is fairer and cheaper, as well.



## **Industries of the U.S. Health Care System**

The North American Industry Classification System (NAICS) from the IBIS World website provides standard industry definitions. NAICS was developed in conjunction with Canada and Mexico to create a conceptual framework for statistical analysis of economic activity.<sup>94</sup> NAICS provides generally accepted descriptions and size of each industry. The industries of the U.S. health care system are: hospital, emergency, outpatient and nursing care; Medical supply and pharmaceutical wholesale; health and medical insurance; primary care and specialty doctors, and home care provider; Pharmaceutical and biotechnology; and medical device, instrument and supply manufacturing. A basic knowledge of these industries is useful in making policy recommendations that impact the health care system.

### **Hospital, emergency, outpatient and nursing care industries (\$985B annual revenue)<sup>95</sup>**

The largest cost sector of the health care system in the U.S. “Hospitals maintain inpatient beds and usually provide other services such as outpatient services, operating room services and pharmacy services. The emergency and outpatient care industries include facilities with medical staff primarily engaged in providing emergency, general or specialized outpatient care. The nursing home industry provides living quarters, inpatient nursing and rehabilitation services for people with a chronic illness or disability. The care is usually provided for an extended period to individuals who require help with day-to-day activities, but who do not need to be in a hospital.”<sup>96</sup> In many cases, the uninsured use emergency rooms as their primary access point, driving up the costs for this sector of the health care system.

### **Medical supply and pharmaceutical wholesaler industries (\$836B annual revenue)<sup>97</sup>**

“Medical supply and pharmaceutical wholesalers purchase large volumes of medical and surgical equipment, instruments, supplies and pharmaceuticals from suppliers, store these items at their distribution centers and provide delivery of these products and related services to medical and dental practitioners, clinics and hospitals, etc.”<sup>98</sup> The health care supply chain is global and complex. The medical supply and pharmaceutical wholesaler industry is a high revenue industry, but profit for medical supply distributors relies on efficiencies in the supply chain process.

### **Health and medical insurance industry (\$742B annual revenue)<sup>99</sup>**

“This industry underwrites (assumes the risks of and assigns premiums for) health and medical insurance policies. Operators also provide administrative services for self-funded insurance plans (whereby an employer provides health benefits to employees with its own funds).”<sup>100</sup> The majority of the U.S. population gains access to the health care system through private sector insurance. Any person not covered through this industry is either covered by a government sponsored insurance program (e.g., Medicaid or Medicare) or is uninsured.



**Primary care and specialty doctors and home care provider industries** (\$486B annual revenue)<sup>101</sup>

“The primary care doctor industry practice is based on a broad understanding of all illnesses and do not restrict practice to any particular field of medicine. The specialist doctor industry includes physicians whose practice is limited to a particular branch of medicine or surgery. They primarily practice specialized medicine (e.g., anesthesiology, oncology or ophthalmology) or surgery. While health care practitioners include nurse practitioners, physician assistants, nurses, and technicians, doctors are the core of medical practice. Medical practitioners at large are the heart of the health care system.”<sup>102</sup>

**Pharmaceutical and biotechnology industries** (\$298B annual revenue)<sup>103</sup>

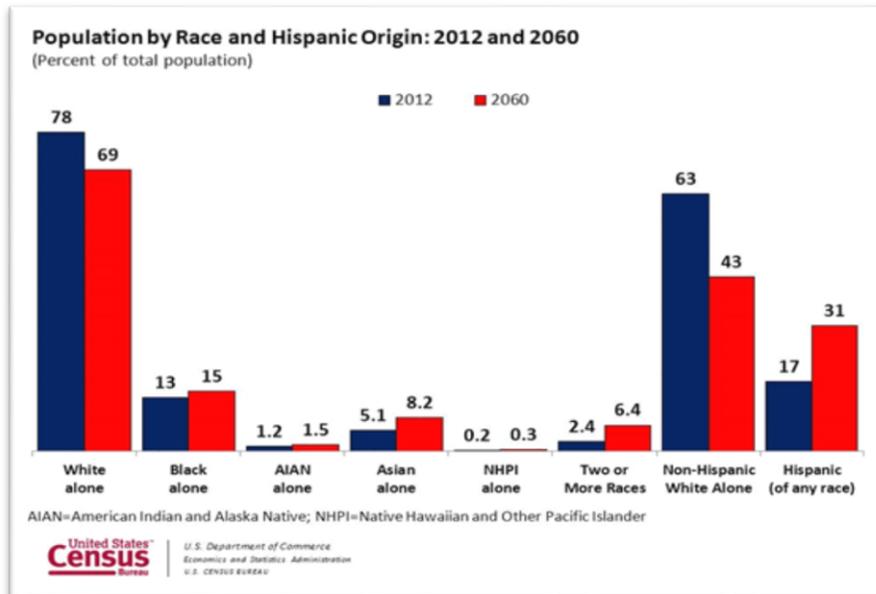
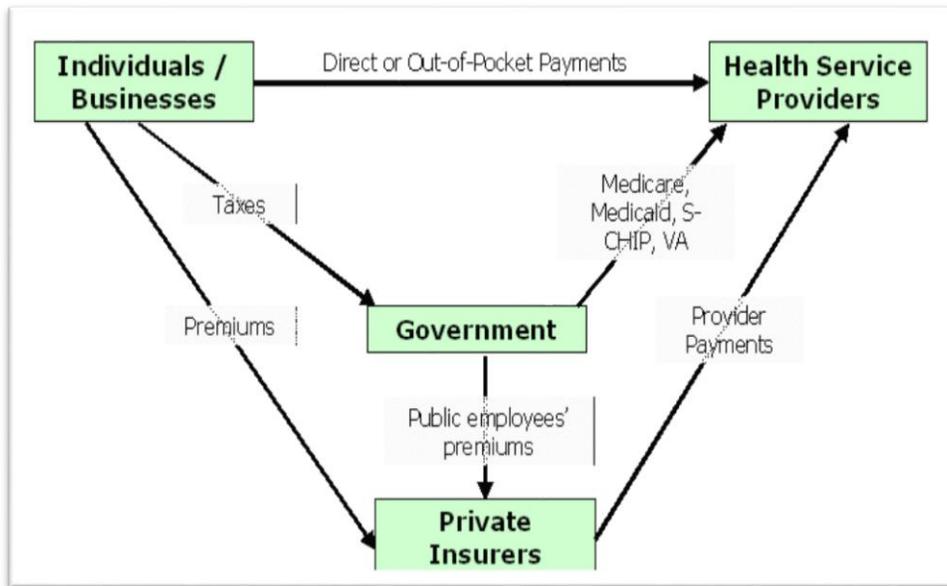
“Pharmaceutical manufacturers develop prescription and over-the-counter products that are used to prevent or treat illnesses. Brand-name drugs and medication have patent protection. Generic drugs are produced and distributed without patent protection, and industry operators are not significantly engaged in the research and development of new drugs.”<sup>104</sup>

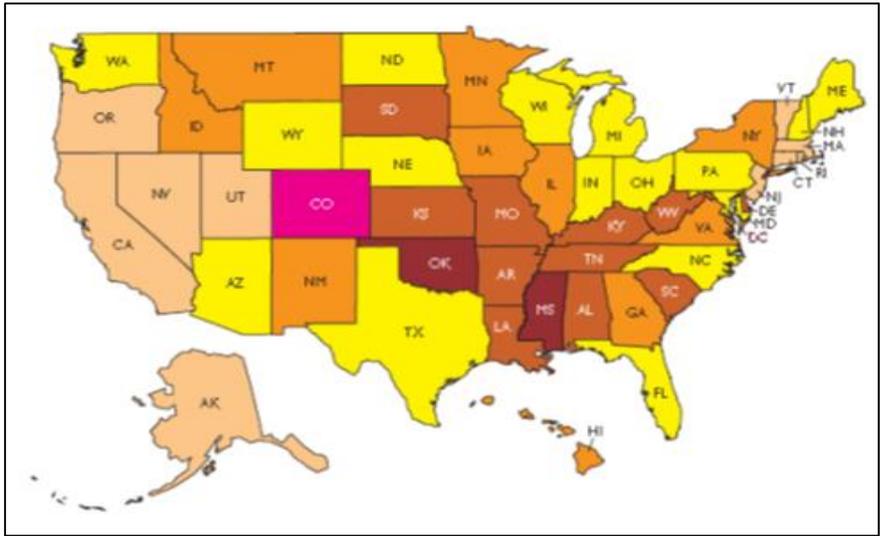
“Biotechnology firms primarily use living organisms or molecular and cellular techniques to provide chemicals, food and services that meet human needs.”<sup>105</sup> Major pharmaceutical companies invest significant resources in the R&D and experience high failure to success rates in their endeavors. According to the Pharmaceutical Research and Manufacturers of America (PhRMA), out of 5,000-10,000 screened compounds, only 250 enter preclinical testing, five enter human clinical trials and one is approved by the FDA. The process from early discovery or design to development to regulatory approval can take more than ten years.<sup>106</sup> The pharmaceutical and biotechnology industries innovate for more advanced medical treatments improving quality, but access to the latest treatment requires significant costs.

**Medical device, instrument and supply manufacturing industries** (\$127B annual revenue)<sup>107</sup>

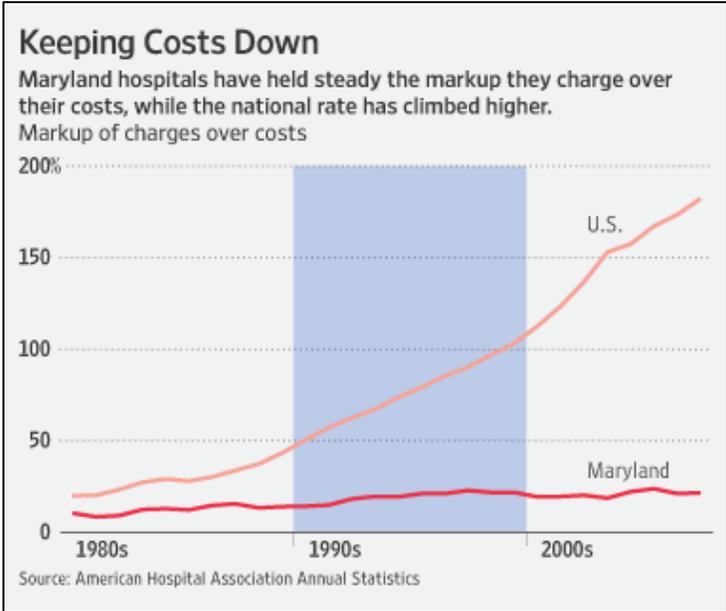
“The medical device industry includes manufacturers of electro-medical and electrotherapeutic apparatus, such as magnetic resonance imaging equipment, medical ultrasound equipment, pacemakers, hearing aids, electrocardiographs and electro-medical endoscopic equipment. The industry also manufactures irradiation apparatus and tubes for applications such as medical diagnostic, medical therapeutic, industrial, research and scientific evaluation. The medical instrument and supply industry primarily researches, develops and produces medical, surgical, ophthalmic and veterinary instruments and apparatus, such as syringes, anesthesia apparatus, blood transfusion equipment, catheters, surgical clamps and medical thermometers.”<sup>108</sup> While the initial cost of many of these advanced medical devices is high, their use can improve the effectiveness and accuracy of diagnosis. Improved diagnosis contributes to better treatment and improved outcomes.







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Compared to Trends



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