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Industry Study**

**Final Report
*Health Care Industry***



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HEALTH CARE 2012

Abstract. The cost of health care in the United States continues to escalate. It cost Americans nearly \$2.6 trillion in 2010, more than 17.9 % of the Gross Domestic Product (GDP). Given the current spending rate, health care expenditures will increase to 20% of the GDP by 2020 unless policy makers take action now to bend the cost curve. The current rate of rising health care costs is unsustainable and poses a threat to national security due to its economic impact as it could potentially crowd out the funding for other federal programs. This paper identifies and analyzes seven key factors contributing to the escalating cost of health care: *administrative costs; chronic disease; fraud, waste and abuse; hospital costs; elder care costs; over-consumption/over-provision of health care; and research and development costs*. Based on the results of the analysis, this paper recommends specific changes to policies and processes to decrease the cost of health care while maintaining quality care.

2012 Healthcare Industry Seminar

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PLACES VISITED AND BRIEFINGS RECEIVED

Domestic (in order of visit)

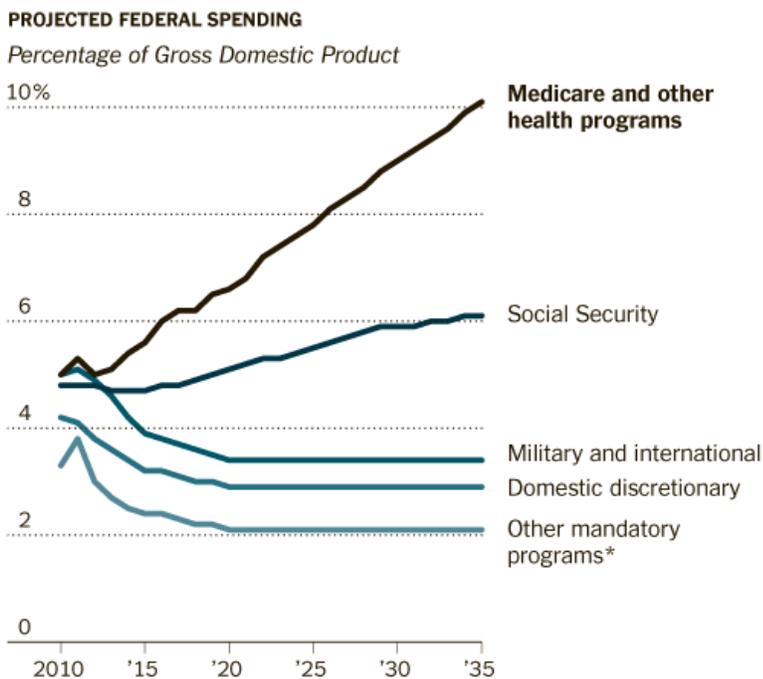
La Clinica Del Pueblo, Washington, DC
Johns Hopkins Health System, Baltimore, MD
USNS Comfort, Canton Pier, Baltimore, MD
Walter Reed National Military Medical Center at Bethesda, MD
Center for the Intrepid at Walter Reed National Military Medical Center at Bethesda, MD
Armed Forces Retirement Home, Washington, DC
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Baxter International, Inc., Waukegan, IL
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Captain James A. Lovell Federal Health Center, North Chicago, IL
Siemens Medical Solutions – Molecular Imaging Division, Hoffman Estates, IL
John H. Stroger Jr. Hospital (Cook County Hospital), Chicago, IL
National Medical Intelligence Command (NMIC), Fort Detrick, MD
U.S. Army Medical Research and Materiel Command (USAMRMC), Fort Detrick, MD

International (in order of visit)

American Chamber of Commerce Healthcare Committee, Budapest, Hungary
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Hospital in the Rock, Budapest, Hungary
NATO Center of Excellence for Military Medicine, Budapest, Hungary
Public Health Secretariat, Budapest, Hungary
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British United Provident Association (BUPA), London, England, United Kingdom

The Cost of Health Care in America: Averting the Threat to National Security

As the fastest-growing segment of the federal budget, health care has been a polarizing topic in the United States and the subject of intense political debate due to its unsustainable costs and its contribution to the federal deficit and staggering national debt. In 2010, total health care expenditures constituted 17.9% of U.S. Gross Domestic Product (GDP) with public programs accounting for approximately half of the nearly \$2.6 trillion national health expenditures.¹ The Medicare expenditure alone for 2012 is anticipated to be \$545 billion, and the Congressional Budget Office projects that figure to nearly double by 2020 at which time it is projected to consume nearly 20% of the federal budget.² As depicted in Figure 1, the cost of Medicare and other health programs already exceeds the Defense budget and will soon begin to squeeze out Defense and other elements of the federal budget if not aggressively addressed.³



*Includes unemployment insurance, military retirement, agriculture and other programs

Sources: Congressional Budget Office; Center on Budget and Policy Priorities

THE NEW YORK TIMES

Figure 1

to crowding out other segments of the federal budget, the rising cost of health care will exacerbate the federal deficit and increase the national debt. Admiral Mullen, former Chairman of the Joint Chiefs of Staff, acknowledged the national debt as a potential threat to national security stating, “The most significant threat to our national security is our debt.” He went on to say, “The strength and the support and the resources that our military uses are directly related to the health of our economy over time.”⁴

This paper will examine some of the predominant factors contributing to the escalating cost of health care in the United States, and will provide recommendations to decrease cost while maintaining quality care.

U.S. Health Care System Overview

Health care in the United States is a large and complex enterprise, comprised of both public and private payers for health care that is delivered predominantly by private entities. Unlike many other developed countries, the U.S. does not have universal health care coverage, leaving an estimated 49.9 million people uninsured and therefore with limited access to health care.⁵ The U.S. government has attempted to rectify this discrepancy in coverage with recent health care reform



legislation under the Patient Protection and Affordable Care Act (PPACA) passed in March 2010. The PPACA mandates individual insurance coverage for all citizens; however, the constitutionality of this mandate is currently under review by the U.S. Supreme Court. The insurance mandate and other aspects of the PPACA will be described in more detail later in this section.

The following paragraphs create a framework for understanding the complexity and intricacies of the U.S. health care system by defining its components, their roles and motivational factors. The section concludes with a description of the current political context of U.S. health care and a brief comparison to health care systems used by other advanced countries. This broad overview will provide a background for subsequent analysis and recommendations for changes in the U.S. health care system.

Roles, functions, and activities of the patient, provider, supplier, payer, and regulator:

Patients are individuals that receive medical treatment or care. The current U.S. population is approximately 313 million.⁶ At some point in time, nearly everyone in the population will be a patient and receive health care services—primary, acute or urgent, or emergency care services. Patients consume the health care generated by the rest of the enterprise. How patients receive and pay for care depends mostly on age, work status, income, and insurance coverage. Since the cost of care is borne largely by third party payers and most consumers do not pay out-of-pocket costs at the time of care delivery, patients are unaware of the health care costs and have no incentive to seek the most cost-efficient care or to limit health care consumption.

Providers are health care institutions and medical care professionals who provide a service to patients. This category includes physicians, nurses, technicians, laboratories, clinics, and hospitals.⁷ For perspective, there are 4,423 state and local government run and non-profit hospitals, and 1,179 for-profit hospitals for a population of 313 million.⁸ These providers work in “administration, direct patient care, medical research, teaching, and other non-patient care activities.”⁹ When compared to the total population, the density of care providers is approximately 26.7 physicians, 98.2 nurses, and 31 hospital beds per 10,000 people.¹⁰ The U.S. is experiencing a shortage of nurses and physicians that is projected to worsen over the next decade. By 2020, nurse shortages are projected to reach 1 million and physician shortages are projected to be 200,000.¹¹

Nurse shortages in the U.S. are attributed to problems with training, instructor capacities, high levels of job dissatisfaction due to schedules, workloads, perceived low status,¹² and higher education availability;¹³ each directly affecting retention rates and contributing to low levels of nursing instructors. Strategies to improve nursing availability focus on recruitment, retention, and capacity of nursing schools; supplying educational facilities with sufficient faculty, increasing financial aid and scholarships, improving education and professional development, education and repayment programs in exchange for years worked, institution of minimum staffing ratios, and prohibiting overtime practices.¹⁴

Physician shortages are attributed to the prolonged period of education, high personal resource investment, a slow and difficult process for aspiring doctors to attend medical school, physician frustration with the health care system, and workplace burnout.¹⁵ Physicians interested in pursuing primary care fields have significantly decreased in diametric opposition to American health care needs.¹⁶ Salary levels, increased patient loads, and the burden of insurance claims are some of the factors affecting physicians’ decisions. Efforts to address the issues involve offers that encourage physicians to consider part time service, stipends, transportation allowances, and malpractice coverage in rural locations in exchange for minimum hours of service per year.¹⁷



Strategies to offset frustration and burnout entail reviews of cost and reimbursement pressures, reducing nursing shortages to alleviate physician workload, and part time work.¹⁸

Suppliers are defined as those businesses that provide goods and services to the providers and sometimes directly to patients. As the number of suppliers to the health care industry is expansive, for purposes of brevity for this paper, the scope of suppliers described below is limited to pharmaceutical companies which provide drugs (prescription, generic and over the counter), medical devices, and medical supplies.

Companies such as GlaxoSmithKline, Merck, and Pfizer develop, manufacture and distribute drugs that treat medical conditions ranging from the most complex cancers and immunological diseases to those more common and less complex such as skin rashes and heartburn. Historically, pharmaceutical companies have relied on the successful development of new blockbuster drugs to compensate for the more common occurrence of research and development failures. Other companies such as Baxter Healthcare, Johnson & Johnson, and Siemens Medical Solutions are broad-based and sell a spectrum of health care related goods, ranging from over-the-counter medications to premixed intravenous solutions and complex imaging machines. Some of the medical devices may be costly; however, they may also reduce the cost of health care through better diagnostics enabling earlier interventions, more effective and targeted medicines, and ultimately better long-term results.

Payers are those who pay for health care and include: self-paying individuals, private insurance companies (self-purchased or employer provided/subsidized), and public insurance companies, defined as some form of state or federal government coverage, e.g., Medicare, Medicaid, and Children's Health Insurance Program. Payers can also be local taxpayers funding public hospitals or philanthropists who donate care or pay for donated care for the uninsured. Excluding the self-paying individuals, all other payers are considered third-party payers, i.e. entities other than the patient receiving the care pay for the cost of care. According to the 2010 Census Bureau, there are roughly 49.9 million people who are uninsured and 256.2 million people with insurance in the U.S.¹⁹ Many payers are employers offering private health insurance as an employment benefit. According to the Centers for Disease Control and Prevention, in 2010 over 64% of adults under the age of 65 had private health insurance.²⁰

A second payer in the health care system is the U.S. Government (USG). The USG, through its Center for Medicare and Medicaid Services (CMS) manages and funds health care through various programs such as Medicare, Medicaid, and the State Children Health Insurance Program (CHIP):

- Medicare is available to Americans aged 65 and older or with certain disabilities; payments are managed by the CMS. In 2011, there were 47.7 million Americans, or 15% of the population covered under Medicare.²¹
- Medicaid and CHIP are joint state and federal programs. Eligibility varies from state to state and is based on income relative to the federal poverty level. California has the highest user population while North Dakota the lowest. In 2011, there were 59.5 million Americans, or 20% of the population participating.²²

Other government health programs include the Veterans Health Administration (VHA) with 8 million enrolled in VA care,²³ the Department of Defense (DOD) Military Health System (MHS) with 9.5 million enrollees throughout the DOD,²⁴ and the Indian Health Service (IHS).

Regulators include Congressional lawmakers and executive branch agencies tasked with regulating the provision of and payment for health care. Regulators influence the health care



industry in a variety of ways including limiting Medicare payments, requiring drug safety inspections and clinical trials, and by subsidizing drug and device research and development.

Political Context of Health Care in the U.S.:

Health care reform has been a topic of political debate for decades; however, the most significant legislative changes occurred with the passage of the Patient Protection and Affordable Care Act (PPACA) in March 2010. The PPACA establishes a framework to make health care accessible for all Americans and will have a tremendous impact on health care in the United States. Among the many provisions of the law, PPACA mandates that approximately 49.9 million uninsured Americans purchase health insurance or face a tax penalty. Since most of these people normally would not have been able to afford or obtain insurance, the law outlines the creation of exchanges in which each state sets up a marketplace to offer private health care plans at affordable rates which are then government subsidized. The law also allows adult children to stay on their parents' health insurance plan until age 26 and eliminates the ability of insurance companies to deny coverage for pre-existing medical conditions. It requires employers with more than 50 employees to offer health coverage or pay a penalty. The law also expands Medicaid up to 133% of the federal poverty level for non-Medicare eligible people. Among the law's provisions, it provides grants to small businesses to establish wellness programs and requires chain restaurants and vending machines to disclose the nutritional content of each item. It also improves access to care by funding community health centers and establishing new school-based health centers.²⁵

Health Care from an International Perspective:

Health care systems and the cost of health care delivery vary widely across the globe. In his book, "The Healing of America," T.R. Reid describes four broad models for health care payers and providers:

- **The Bismarck** model, practiced primarily in Germany, Japan, Belgium, and Switzerland has private providers and payers. Both employers and employees pay privately-owned health insurance providers, which in turn, pay health care providers for their services. Through a tightly controlled pricing structure, payers and providers earn minimal profit and health care costs are contained. No patient is denied health care; however, cost controls can limit access to health care specifically to newer treatments and equipment.²⁶
- **The Beveridge** model, practiced in Great Britain, Italy, Spain, Scandinavia, and Hong Kong uses collections from taxes to cover health care expenses. While the central government is the single payer, the providers either work for the government or are private providers who receive payment from the government. There are no direct costs to patients, but citizens cover total costs through taxes. This system also controls costs but limits access to health care by not performing tests that might otherwise be routinely performed in the US, and by not performing procedures if the patient maintains functionality.²⁷
- **The National Health Insurance model** used by Canada has elements of both the Bismarck and Beveridge models but with one major difference, the providers are all private and rely on the government for payment of fees. This too controls costs but limits access to health



care by long waiting lists. For example, the wait time to visit to a specialist might take 10 to 12 months and actual treatment another 6 months.²⁸

- The **Out-Of-Pocket** model has no central payer, no central provider, and no private insurer. Those who can afford health care, pay for it themselves. Those who cannot pay, generally go without health care. This model applies primarily to underdeveloped countries. This model provides no cost controls on the provider.

Health care in the United States does not entirely fit into any of the models described above, but has elements of all of them with an additional capitalistic component whereby private insurance companies underwrite certain expenses for qualifying individuals. From a patient's perspective, the U.S. can be viewed as having four categories of consumers, depending on how health care is funded. There are consumers whose care is funded primarily through federal taxes, such as recipients of Medicare, Medicaid, CHIP, VHA, DOD, and IHS; those whose care is funded through private insurance; those whose care is either self-funded or funded through charitable organizations; and those whose care is not funded at all due to lack of insurance. The U.S. health care system is both complex and costly. These attributes combined make accessibility difficult, if not impossible, for millions of Americans. While emergency care is available to all, routine health care is not available to those who do not have the ability to pay for care.

Health Care Industry Trends and Key Cost Drivers

There are many factors to consider when analyzing the health care industry. The following section will cover seven trends which have the most significant impact on the cost of health care. These trends also contribute greatly to the federal deficit, national debt, and ultimately impact national security.

Cost Trends

In 2010, total health care expenditures constituted 17.9% of GDP, or \$2.6 trillion,²⁹ and one year prior in 2009 it was 17.3% of GDP, approximately \$2.5T.³⁰ According to Plunkett Research, Ltd., an expert in market research and industry analytics, U.S. health care expenditures are projected to rise to 19.8% of GDP or \$4.6 trillion by 2020.³¹ Note at the current growth rate health care costs will exceed the projected expenditure rate.

The chart in Figure 2 depicts categories of health care expenditures. Out of these categories, cost trends were identified which influence or could influence healthcare policy, or process changes. Out of these trends, seven key cost areas were identified as having significant impact on the escalating cost of health care and will be further

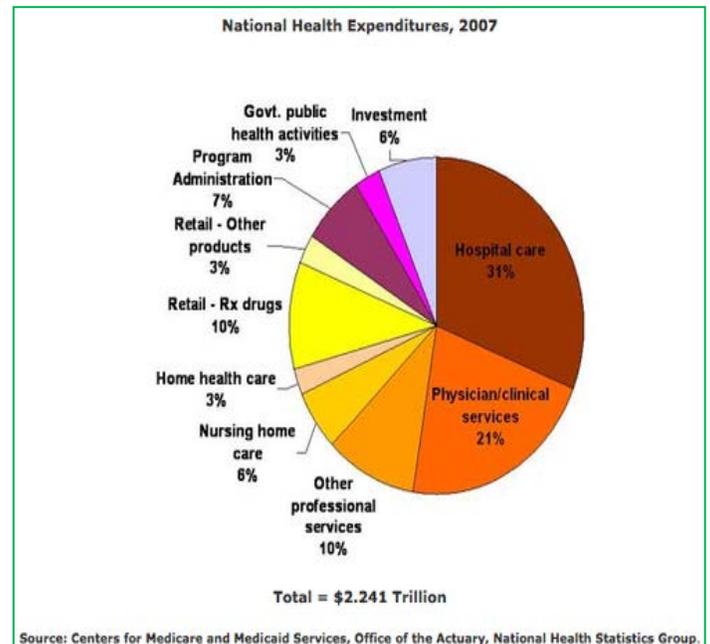


Figure 2

analyzed below: *Administrative Costs; Chronic Disease; Fraud, Waste, and Abuse; Hospital Costs; Elder Care Costs; Over-Consumption and Over-Provision of Health Care; and Research and Development Costs.*

Cost Driver Analysis

Administrative Costs

Administrative costs for medical care account for roughly 14 percent of U.S. expenditures on health care or \$360 billion per year.³² Medicare, Medicaid and insurance companies bear approximately half of administrative costs or \$163 billion per year.³³ Remaining costs are associated with filling out forms, maintaining records, credential applications, and various other administrative actions. Managing the myriad of mixed model health plans, disjointed knowledge management practices, inefficient processes and burdens associated with regulatory policy is expensive. Some of the contributing factors to health care administrative costs and potential actions to decrease these expenses are explored below.

First, employers are looking at alternatives to reduce administrative costs associated with the various health care plans while striving to retain employees. Rather than excluding health insurance benefits, employers are turning to self-insured plans.³⁴ Self-insured plans not only enable in-depth insight into costs, but ease administration costs through portability from one carrier to another and the ability to use one national network.³⁵ Employers are also opting for defined contribution plans with set amounts toward each employee's health costs enabling employees to choose their plan and pay for premiums above limitations; this approach makes employees aware of their health care expenditures and raises personal accountability.³⁶ Employers are also opting to increase deductibles or co-payments for employees to raise their cost awareness.³⁷ Attempting to improve the management of the mixed models of health plans to reduce administrative costs and gain efficiencies is only one avenue of many to take.

Secondly, the lack of appropriate health care information technology (IT) and knowledge management (KM) is another significant contributor to the burden of administrative costs. The administrative provision of IT and KM increases health care costs due to several factors. Inaccessible health records drive physicians to overprescribe or duplicate tests and/or procedures because of non-availability of information when formulating patient care recommendations. The inaccessibility of health records contributes to poor management of chronic conditions. Inefficiencies in hospital processes, overall management, disparate IT systems, and the lack of knowledge sharing further exacerbate administrative costs. Federal government mandates such as the 1996 Health Insurance Portability and Accountability Act to promote and support secure and authorized data sharing among authorized medical industry personnel/communities of interest took the first step toward improving IT and KM costs, but other changes must be considered. If the financial sector and banking industry can safeguard key information while sharing with select few, the technology exists to do the same in medical sharing.

Looking at ways to reduce administrative costs through the use of IT and KM provides a vital aspect of addressing process inefficiencies overall. However, other basic actions must also be considered. It is necessary to change the way business is conducted through more streamlined and cost-conscious methods in a number of areas affecting the health care cost. Many of the nation's hospitals are employing a host of approaches to reduce costs that can be shared and considered as best practices.³⁸ Tightening up on non-clinical staff, scrutinizing supply-chain contracts, instituting



policy on the use of generic drugs in the pharmacy, adjusting staff levels, and improving overall process flow are just a few of such actions.³⁹ Payment bundling to health care providers is another strategy examined.⁴⁰ Doctors, hospitals, and other health providers all share a single fee for patient treatment of chronic disease or other procedures.⁴¹ The focus is on encouraging teamwork among health care providers to eliminate unnecessary care while improving quality.⁴² Although, implemented in various locations over three years ago, such bundling approaches have not yet proven effective in reducing administrative related costs.⁴³ The key to achieving efficiencies overall seems to be institutionalization of a cost conscious culture.

Regulatory burdens also significantly add to excessive administrative costs. For example, officials estimate PPACA requirements to establish a National Health Plan Identifier (NHPI) to help automate the third-party payment system will cost commercial and government health plans between \$650 million-\$1.3 billion.⁴⁴ However, expected savings because of the decrease in administrative time spent on health plans due to the NHPI is projected to be \$4.6 billion over a decade.⁴⁵ Concern also exists among health care providers regarding the Administration's emphasis on billing audits.⁴⁶ The Center for Medicare and Medicaid Services estimated 8.6 percent of Medicare fee-for-service claims were paid in error in fiscal year 2011, driving even more focus on billing and payment errors.⁴⁷ Recent CMS imposed regulations are comprehensive and complex, ranging from organization structure to quality standards.⁴⁸ The potential shared savings and physician incentives may be inadequate to reduce costs while maintaining quality.⁴⁹

Chronic Disease

Chronic disease is a major cause of morbidity and mortality in the United States and affects nearly one in two adults, accounting for 75% of the nation's health care costs.⁵⁰ While not a leading cause of death, arthritis is the number one cause of disability, limiting activities for 19 million adults in the United States. Heart disease, cancer, stroke, diabetes, and obesity are chronic diseases and are among the most prevalent, costly, and preventable health conditions. These and many other chronic diseases can often be prevented by lifestyle changes, such as modifying diet and physical activity, and avoiding tobacco and alcohol use, and therefore may be effectively influenced by health policy changes directed at alterable risk factors.⁵¹ Some of the most common and preventable chronic diseases are explored in the following paragraphs.

Heart disease is the leading cause of death in the United States and stroke is the third leading cause of death, together accounting for 30% of all deaths annually.⁵² Cardiovascular diseases including hypertension, coronary heart disease, heart failure, and stroke were prevalent in 36.9% of the population in 2010 at a cost of \$272.5 billion per year, 17% of the national health care expenditure.⁵³ By 2030, the prevalence of cardiovascular disease is projected to increase to 40.5% of the US population with direct medical cost projected to triple.⁵⁴

The most common form of diabetes, type 2, accounts for 90-95% of diabetes and affects over 23 million people, 7% of the US population.⁵⁵ Diabetes is the leading cause of kidney disease, non-traumatic limb amputations and blindness and is a major cause of heart disease and stroke.⁵⁶ Direct care costs are estimated to increase to \$336 billion (2007\$) in 2034 as the number of diabetics increases to over 44 million.⁵⁷

Obesity is strongly associated with increased risk for the aforementioned chronic health conditions such as diabetes, coronary heart disease, hypercholesterolemia, stroke, hypertension, and arthritis, and therefore, the cost of health care attributed to obesity is extraordinarily high. As the U.S. is in the midst of an obesity epidemic in which more than two-thirds of adults⁵⁸ and one out of



every three children is overweight or obese,⁵⁹ the cost of this condition will spiral upward. The annual direct cost of obesity was estimated to be \$147 billion in 2008, accounting for nearly 10% of all medical spending.⁶⁰ It is clear that that obesity poses an extraordinary economic burden on the nation at a time in which it can ill afford or tolerate the soaring costs of a preventable epidemic.

Although chronic diseases are the most prevalent and expensive of all health issues, they are also the most avoidable. Currently, the health care system centers on the physician and patient interface. Lacking is a patient-focused, comprehensive plan that is managed by the physician with the long-term goal of integrating and coordinating care. A growing amount of evidence suggests that Patient Centered Medical Homes (PCMH), a health care model centered on a primary care physician providing comprehensive care, reduce cost. As summarized by Drs. Grumbach and Grundy, “Investing in primary care patient centered medical homes results in improved quality of care patient experiences, and reductions in expensive hospital and emergency department utilization.”⁶¹ Their research quantifies the effect of this style of preventive care approach as reducing hospitalizations by 16 – 18% and emergency department visits by 27 – 39%.⁶² In order for the savings to be realized by this model it must be institutionalized through regulation.

Fraud, Waste, and Abuse

Fraud, waste, and abuse are present in health care and may be increased in environments which have limited oversight and accountability. Medicare/Medicaid billing systems and Current Procedural Terminology (CPT) billing codes are two areas identified as having increased cost due to fraud which is attributed to poor oversight of payments.

Medicare had estimated improper payments of almost \$48 billion in 2010, equating to a payment error rate of 10.1%.⁶³ While Medicaid had an estimated \$22 billion in improper payments in 2010 due to inadequate fiscal oversight at both the state and federal levels, equating to an improper payment rate of 9.4%.⁶⁴ A GAO study found that some Medicaid beneficiaries and providers were involved in wasteful and abusive purchases of controlled substances; specifically, Medicaid paid for \$2 million in controlled substance prescriptions written by practitioners barred from federal health care programs prior to issuing the prescriptions.⁶⁵ Despite this effort, progress within CMS to address these deficiencies has been piecemeal and not incorporated throughout the enterprise. As a result, CMS revoked the billing privileges of 21% of medical device suppliers in 2008 and 2009 because they were considered a medium to high-risk of being fraudulent, but not before paying out over \$2.8 million in claims.⁶⁶

Fraudulent activity has been well documented in the practice of “upcoding” of Current Procedural Terminology billing codes. Upcoding is the submission of a service code that commands more money than the service actually provided. There is strong evidence that CPT fee differentials influence a physician’s coding choice for billing purposes across a variety of specialties. Medicare outlays attributable to upcoding may sum to as much as 15% of total expenditures for general office visits.⁶⁷

Hospital Costs

Hospital costs are the largest component of health care costs in the U.S., and continue to grow.⁶⁸ According to the latest *News and Numbers* from the Agency for Healthcare Research and Quality (AHRQ), U.S. hospitals billed insurance companies and Federal and State programs \$1.2 trillion in 2008 for inpatient care. This represents a twenty-eight percent increase over the \$900

billion billed in 2004, adjusted for inflation.⁶⁹ Enormous inefficiencies exist associated with readmissions, ill-defined processes, inefficient acute care utilization, medical errors, hospital acquired conditions, facility and fixed costs, education and research, and labor charges. For example, infection-related costs represented the single most expensive condition treated in U.S. hospitals at over \$15 billion, and twenty percent of those cases were infections acquired during a procedure.⁷⁰ Multiple attempts are currently under way to address hospital costs and quality of care. Dr. Harold Miller offers a persuasive series of milestones that may best focus the effort. The primary goal is to keep people healthy and prevent a condition from occurring; if unable to prevent a condition, prevent the condition from progressing; if unable to prevent the condition from progressing, treat as an outpatient to the greatest extent possible; if hospital treatment is necessary, provide safe and effective care then send patients home as early as possible.⁷¹

Even in this fundamental context that better care ultimately equals lower costs, defining standards is an enormous challenge. Industry leaders such as the Mayo Clinic, The Johns Hopkins Hospital, and others have been studied and consulted. Observations can be condensed into a six part building block approach with evidence based

medicine as its foundation. Evidence based medicine comprises the integration of clinical expertise with the best available clinical evidence and patient values. The six building blocks include:

- 1) maximize foundational evidence based care;
- 2) improve mortality rates;
- 3) lower costs;
- 4) reduce harm;
- 5) improve patient satisfaction;
- and 6) keep readmissions low.

(Figure 3) It is clear that a system that meets all six standards will be attractive to consumers, providers, and payers, but how does one measure success?



Figure 3

The CMS-sponsored program known as Hospital Quality Incentive Demonstration (HQID) was an industry-led collaboration to assess whether outcomes improve if hospitals are incentivized to strictly comply with Evidence Based Medicine (EBM) practices. Starting in 2003 with hospitals in 38 states, HQID gauged hospital performance on over 30 widely accepted U.S. Preventive Services Task Force⁷² measures for patients in six clinical areas: heart attack, coronary bypass graft, heart failure, pneumonia, hip and knee replacements, and the Surgical Infection Prevention Project (SIPP, now known as the Surgical Care Improvement Project).⁷³ The effort pivoted on consistent and transparent application of EBM; and the results were resoundingly positive. Participants that received incentive payments (top 50%) raised their quality score by an average of 18.3 percentage points over 5 years; participating hospitals in the lower 50% still improved their average quality score by 18 percentage points.⁷⁴ Broader analysis of HQID data and consequent observations revealed a true breakthrough. Reimbursement incentives may not be causal, but *transparent comparison* between hospitals was a critical driver for improvement. Immediately after the HQID results were openly shared amongst the participating hospitals and health care networks, quality scores improved rapidly. The desire for High Performer stratification amongst peers helped catalyze buy-in from hospital leaders, and they began demonstrating systemic top performance rather than just categorical performance. Correspondingly, the pace of change toward system performance dramatically hastened and amplified the cost and quality results. Capitalizing on HQID's improvement success, CMS initiated a more comprehensive effort: QUEST...Quality – Efficiency – Safety – Transparency.



QUEST started in 2008 with 157 hospitals focused on mortality and cost for a 30 month demonstration to assess effectiveness and establish Top Performance Threshold (TPT) baselines. The results were persuasive, as the number of EBM-compliant hospitals increased from 78% to 92%; and 98% achieved the TPT for EBM measures. Furthermore, observed mortality versus expected mortality rates decreased by 27% with 76% of hospitals achieving TPT recognition, and the hospitals demonstrated a 15% reduction in per patient per discharge rates with 77% achieving TPT recognition.⁷⁵ In summary, with fewer than 3% of U.S. hospitals attacking only the first three of the six structural elements, QUEST charter member hospitals prevented 24,820 deaths and reduced health care spending by nearly \$4.5 billion in under three years. CMS stated that if all U.S. hospitals achieved QUEST's TPT, approximately 87,250 lives and \$34 billion dollars could be saved each year.⁷⁶ The second phase of QUEST is underway, doubling participants and including in-hospital harm to patients, patient satisfaction and readmissions pillars.

Evidence-Based Medicine underpins much of the success denoted above by providing a standard set of guidelines by which an entity will be measured. Although first codified in 1992 and a critical dimension of health care, EBM is not consistently applied and falls short of the inertia needed for desired system effects. The track record for nationwide acceptance of standards is mixed at best. Studies indicate that it takes 17 years on average for clinical research to be incorporated into standard practice of care.⁷⁷ It is likely that thousands of lives and billions of dollars can be saved when accepted standards are broadly implemented.

Elder Care Costs

Elderly patients often have complex medical needs, severe chronic disease, daily life limitations, distant family, and limited access to transportation. These factors make them more likely to be residents of costly assisted living services and nursing homes, making long term and home health care costs substantial. According to Deloitte and National Health Expenditure Accounts, seniors currently account for 36% of the health care spending but comprise only 12% of the population.⁷⁸ Each day for the next 20 years, 10,000 Americans will turn 65; this means 30% of the U.S. population will be enrolled in Medicare by 2030.⁷⁹

The average Fee-For-Service (defined below) spending per Medicare enrollee in 2006 was \$8344 and \$48,210 for the most costly ten percent of the beneficiaries.⁸⁰ The government currently bears much of the cost burden for elder care, but not all of it. The 2012 Medicare handbook shows that the lowest Part B premiums are nearly \$1200 annually and those retirees often pay up to \$4700 for prescription drugs annually.⁸¹ Additionally, elderly must pay for other out-of-pocket expenses such as deductibles, elective care, dental care, eyeglasses, and hearing aids. According to Ameriprise Financial, the average retiree spends \$9000 annually on health care.⁸² The Employee Benefits Research Institute reports, "by 2020 a 65-year-old married couple without an employer-based health plan and with median drug expenses may need a total of \$365,000 to \$454,000 to pay for Medigap, Medicare Part B and Part D premiums and out-of-pocket drug expenses."⁸³

The cumulative effect of these costs on the elderly can be overwhelming. In 2008, the Center for Retirement Research at Boston University reported that the National Retirement Risk Index showed that rising health care costs would increase the number of American households unable to sustain their standard of living in retirement by 17%, from 44% to 61%.⁸⁴ This is likely a conservative estimate, especially when considering U.S. macroeconomic factors.

These costs are without consideration for the nearly two-thirds of the elderly who will at some point need long-term care. The average annual cost for home health aides is \$22,000, low



when compared to \$71,000 - \$79,000 for nursing home care, but still out of reach for many Americans.⁸⁵ The cost is shifted to Medicaid as the personal wealth of the elderly is exhausted.

There are many possibilities for reform in how health care is provided to seniors that can decrease cost without sacrificing quality. One initiative is PACE--Programs for All-Inclusive Care for the Elderly. Success of the PACE program is based on using an interdisciplinary team to bring care to Adult Day Health Centers (ADHCs) where the team focuses on primary care with the focus on the best interests of the patients. The primary care doctors have a lower than usual caseload. The program avoids “unnecessary and inappropriate” hospitalization and nursing home care and provides transportation as needed. The results have shown a 5-15% savings.⁸⁶ The primary drawback to the program is that it targets only the dual eligible (Medicare and Medicaid) population.

Over-Consumption and Over-Provision of Health Care

“Following the money” illustrates the inefficient and poorly incentivized payment and reimbursement systems that lead to two critical components of driving up health care costs—over-consumption and over-provision of health care. Over-consumption is defined as unnecessary utilization of the health care system or utilization at a higher than necessary intensity level. Over-provision occurs when providers apply, prescribe, or perform care that may be unnecessary or at a greater intensity level than is required. Both over-consumption and over-provision stress the health care system, exacerbating the shortage of providers and further increasing health care costs.

A primary root cause for over-consumption of health care is having a consumer base that is almost completely detached from the costs of health care. Unlike nearly every other purchasing decision in life, most Americans do not consider the full cost of their health care. The private sector has been attempting to tie some of the costs back to the consumer through increased direct costs and revised health plans, such as the Consumer Directed Health Plan (CDHP). The CDHP is a plan in which consumers pay a smaller premium for health care insurance and more of an out-of-pocket expense at the delivery of care. In 2010, that number increased to 13% and in 2011, increased further to 17%.⁸⁷ The Health Savings Accounts (HSAs) are another example of these plans in which all of the costs of care for a specified dollar amount come out of the consumer’s pocket, with a copayment required for any care above that threshold. A report from GlaxoSmithKline (GSK), evaluated a patient population moving from a standard Preferred Provider Organization (PPO) plan to a CDHP. The study found outpatient visits decreased by 40%, laboratory and diagnostic services decreased by 44%, and prescriptions decreased by 28% immediately upon switching. Further, emergency room visits dropped by 9%, hospitalization by 40%, average medical costs by 7.9% and average pharmacy costs by 22.5%.⁸⁸ A study published by the RAND Corporation in 2010 validated the GSK study. Based on these results, adopting a CDHP may have a positive impact of reducing utilization and the overall cost of health care.

The key driver for over-provision of care centers around the complicated method used to reimburse providers and suppliers for care rendered. This system, used by Medicare and a majority of the health care industry, is known as Fee-For-Service (FFS). Under this system, providers of care, both inpatient and outpatient, are reimbursed by payers (primarily an insurance company or the government) under a complicated coding methodology accepted across the industry. Fee-For-Service providers maximize revenue by seeing as many patients as possible and ensuring the patients are coded at the highest possible reimbursement rate. The reimbursement system also

requires maintaining costly administrative staff necessary to accomplish the myriad and complex billing and coding procedures.⁸⁹

An alternative to FFS is a capitated system in which payment is bundled based on the complexity and expected care requirements for the patient pool per episode or for general wellness care. The Institute of Medicine's report on lowering health care costs provides details on studies coordinated with the Centers for Medicare and Medicaid Services that show the potential for bundled payments to yield a Medicare savings of up to \$1 billion per year.⁹⁰ Under a capitated system, a Health Management Plan (HMP) or Accountable Care Organization (ACO) would obtain a set fee from the payer for the provision of all care required for a specific pool of patients. The HMP hires, contracts, or negotiates with providers of care and is wholly responsible for managing the care of that patient population. Accountable Care Organizations operate in a similar way but are the actual providers of the care. The HMP or ACO is financially at risk for costs that exceed the capitated fee, and profits from costs below the capitated fee. Regulations would specify standards regarding access to appointments and preventive care for all patients and capitation fees. Health Management Plans and Accountable Care Organizations have an incentive to focus on providing care at the least intensive level versus the most intensive level under FFS, which further reduces costs. Diagnostic testing and pharmaceutical prescriptions are reduced because tighter management by the HMP/ACO results in obtaining those tests and drugs that fall within established clinical guidelines. Additionally, under a capitated system, HMPs/ACOs have a major incentive to focus on the wellness of their population to keep patients healthy. This further reduces demand and stress on providers of care, resulting in additional reductions in cost over the long term.

As already noted, another contributing factor in the over-provision of health care is the practice of defensive medicine, or the unnecessary ordering of tests and procedures by physicians primarily to reduce the perceived threat of malpractice. A Gallup Poll and Jackson Healthcare survey of physicians in 2010 indicated that 73% (Gallup) and 92% (Jackson Healthcare) of physicians reported practicing defensive medicine in the previous 12 months. In the Gallup poll, physicians estimated that 35% of diagnostic tests, 29% of lab tests, 19% of hospitalizations, 14% of prescriptions, and 8% of surgeries were performed to avoid lawsuits.⁹¹ Based on these surveys, excess spending on unnecessary tests and procedures was estimated to be \$260-\$850 billion dollars per year or 26-34% of all health care dollars spent.⁹² Other studies estimate the cost of defensive medicine to be in the range of \$70-\$126 billion per year.⁹³ One study looking at liability reform conducted by the Congressional Budget Office in 2009 concluded that capping punitive damages, placing a statute of limitations on lawsuits, and implementing a "fair share" rule of liability would save \$11 billion within the national healthcare system in terms of malpractice insurance reduction and a reduction in prescribed healthcare.⁹⁴ While the exact cost of defensive medicine is difficult to quantify, the practice of defensive medicine and the corresponding over-provision of care is widely acknowledged by the medical community; and liability reform has been advocated to address the issue.⁹⁵

Another cause of over-provision of care is the lack of access to medical records and test results, which creates unnecessary duplication. This is a well-recognized problem that is addressed through a nation-wide mandate for implementation of an Electronic Medical Record/Electronic Health Record (EMR/EHR). The "Economic Stimulus Bill Mandates Electronic Health Records for Every American by 2014 - With No Opt-out Provision."⁹⁶ Creating a nationwide EMR/EHR will enable the consumer, providers, payers, etc. to reduce medical costs and errors and increase the quality of care. Kaiser Permanente and Johns Hopkins Hospital along with others in the health care industry are complying with the mandate and have started to implement their version of an

EMR/EHR Information Technology system. The DOD and the VHA have begun a partnership in developing the largest EHR system in the nation to manage their patients. Based on various Health Information Technology studies, a reduction in medical errors and medical costs, and an increase in quality of care can be achieved by leveraging IT – a potential cost savings of \$80 billion a year according to RAND Corporation.⁹⁷

The challenges that industry and government will face in the 21st Century are as follows: (1) defining a governance structure to ensure a nationwide EHR data standard; (2) developing processes to share information among multiple providers and IT systems for patients who receive care from different providers; (3) changing legacy business processes to adapt to best practices; and (4) complying with security and Health Insurance Portability and Accountability Act requirements. Leveraging EMR/EHR IT systems will increase the quality of health care, contribute to reducing the overall healthcare costs, and will enable better utilization of medical trained professionals to focus on patient care.

Research and Development Costs

A comprehensive discussion of health care must include the merit of devoting resources to medical research and development. Medical research and development has driven the high performance of the U.S. medical care system. According to the National Institute of Health, life expectancy has risen from 47 years in 1900 to 78 years in 2011 and the number of people with disabilities over age 65 has fallen dramatically in the past 30 years.⁹⁸ These performance measures have improved as a direct result of the research and development dollars that have been dedicated to new devices, clinical practices, and drugs. This dedication to being the world's leader in medical research will do more to continue the improvement in America's health statistics and can play a major role in reducing the cost of future treatments.

Research and development cost is an investment in the future of medical care. In the U.S., the most recent data show approximately 94 billion dollars provided for biomedical research.⁹⁹ The National Institutes of Health and pharmaceutical companies collectively contribute \$53.4 billion. This public/private partnership is extremely effective but may be improved by the implementation of a more wide-ranging national strategy with respect to a strategic vision for medical research.

A national medical research strategy could develop an outline for a vision that all governmental departments and agencies would incorporate in their internal strategic plans for medical research. This could align organizational priorities with national priorities, gaining synergy of effort across the entire government to focus research and resources on areas most critical to the nation's health and well-being. This could also help the commercial entities to be able to predict the types of research important to the U.S. and possibly orient some of their research and development resources to meet these needs. A more concerted effort could make more efficient use of scarce resources while simultaneously maintaining America's role as the world's leader in medical research and development.

Recommendations

The seven cost drivers discussed above outline some of the major factors contributing to the escalating cost of health care in the U.S. and are areas in which policy and process changes can realize significant cost savings. The following recommendations address the root causes of the cost

drivers analyzed in this paper and introduce efficiencies and standardization of procedures that will decrease the cost of health care while maintaining quality care.

Administrative Costs

Give consumers more choice on insurance plans. Establish national and local network portability of insurance plans, while also capping contribution plans to hold individuals accountable for costs that exceed set limitations according their selected plans and associated limits. Consider increasing deductibles or co-payments for cost sharing of particular health care provisions should also be considered.

Standardize Information Technology and Knowledge Management specifically for the health care industry. Develop a Strategic Communications Plan to educate consumers on safeguarding and sharing key medical information capabilities. Change the tax structure to incentivize Knowledge Management. Examples include Department of Health and Human Services publishing National Wellness Performance Criteria and tax credits being offered to the medical community based on performance outcomes. In addition, hospital payments should be withheld for failure to meet Clinical Practice Guideline standards. Tax credits should be offered for hiring Knowledge Management and Information Technology professionals skilled in the field.

Inculcate a culture of cost consciousness throughout health care administration and implement basic efficiency practices and processes. Employ the sharing of best practices and a mechanism to contribute to and collaborate on best practice guidelines. Closely evaluate contracts, organization and handling of staff levels and workload; develop an overarching policy emphasizing the use of generic drugs when practicable.

Ensure regulations and policy decision mandates consider realistic timelines and requirements. Examples include conducting a review and revision of recovery audit mandates and PPACA Accountable Care Organization regulations for feasibility.

Chronic Diseases

Create policies that encourage development of personal health plans. In order to reverse the negative trends that chronic disease is causing to both long-term health care costs and statistics regarding morbidity and mortality, implement a long-term, primary care provider-managed plan in the setting of a Patient Centered Medical Home that focuses on the patient and coordinates all aspects of their care. A personal health plan should include a strategic level educational program that can be executed at the community level focused on enlightening patients to new techniques and effective steps patients can take to reduce the incidence of chronic disease. The plan should also entail incentives to affect the patient's personal behavior that directly contribute to the development of chronic diseases. These incentives can vary from penalties for detrimental behavior to rewards for developing a lifestyle that promotes better health. In order to inculcate this into general practice it should be a major tenet in a Patient Bill of Rights developed by the Administration or in congressional legislation for all patients.

Over-consumption/Over-provision of Health Care

Change the open-ended nature of the Fee-For-Service (FFS) structure to either a fixed government contribution or a capitated system in which bundled payments are determined based on the complexity and expected care requirements for the patient pool per episode or for general wellness care. The FFS model is unsustainable over the long run because it acts as a blank checkbook that rewards high cost and inefficiencies. Bundled payments would force efficiencies because the spending caps will create a greater incentive to control costs. This system should have incentives to educate patients, provide preventive services and to treat illness and disease early, which would reduce over-provision of expensive care, unnecessary elective procedures, and excessive costly testing. Additionally, it would lower the incidence of chronic disease, which would further lower health care costs. Accountable Care Organizations save money by avoiding unnecessary duplication of care and by preventing errors.¹⁰⁰ The Department of Health and Human Services estimates that ACOs could save Medicare up to \$960 million in the first three years.¹⁰¹ Current government incentive programs reward successful ACOs with a share of the savings. These government sponsored incentivizing programs should be made more widely available and strongly encouraged.

Create a nationwide Electronic Health Record data standard. Leveraging EMR/EHR IT systems with a national level data standard will increase the quality of health care, improve communication and decrease redundancy, and reduce the overall health care costs, enabling better utilization of medical trained professionals to focus on patient care. To establish a nationwide EMR/EHR IT system, several barriers must be first be addressed by the DHHS: 1) A governance structure must be established and empowered to oversee a nationwide EMR/EHR data standard; 2) Processes must be developed to share information among multiple providers and IT systems for patients who receive care from different providers; 3) Legacy business processes must adapt to newly established best practices; and 4) the Health Insurance Portability and Accountability Act needs to be modified to enable data-sharing to maximize leverage of an EMR/EHR IT system. Mandatory but appropriate data-sharing will drive enterprise-wide data integration and standardization through the exposure and awareness of previously siloed data. Subject information will then drive best business practices, collaboration, and overall integrated information, thus promoting knowledge across the industry to support better informed decisions, driving down costs while improving health care.

Implement liability reform to reduce the costs of defensive medicine. Liability reform has potential to reduce the pressure on physicians to order unnecessary tests and procedures due to fear of being sued. Liability reform should set fair and reasonable limits on non-economic damages for cases with intangible harm and establish a statute of limitations on claims. As part of liability reform, special health courts staffed with judges specifically trained in medical liability matters should be established to concentrate liability expertise and minimize meritless lawsuits.

Change the demand curve by making consumers have more “skin in the game.” Consumers tend to use less health care when they bear more of the cost-sharing burden. Increase the out-of-pocket portion of health care by increasing co-payments and deductibles. Encourage Consumer-Directed Health Plans (CDHPs) which have been shown to lower overall costs of family health care by reducing office visits, services, and prescriptions.

Fraud Waste and Abuse

CMS must identify the root causes of improper payments and develop a corrective action process to address those vulnerabilities. Four suggestions for CMS include:

- 1) Implement an effective physician profiling system wherein providers are designated by risk level
- 2) Apply systematic payment to providers when services are furnished together (“bundling”)
- 3) Apply predictive modeling analysis to the claims process
- 4) Focus claims reviews on the most vulnerable areas, not just the easiest reviews to audit.¹⁰²

Hospital Costs

Launch and invest in private/government partnerships to review and codify Evidence-Based Medicine standards. EBM is a comprehensive endeavor toward bolstering the scientific basis for provision of care. It comprises the integration of clinical expertise with the best available clinical evidence and patient values. Most importantly, EBM is empirically proven to improve quality of care while simultaneously reducing costs. Additionally, broad implementation of EBM should positively affect many other significant cost drivers beyond the hospital costs discussed earlier. For example, physicians should have fewer incentives toward over-provision of care when following EBM protocols. This positive outcome may be amplified if and when such EBM standards are recognized and durable in malpractice litigation precedent. Moreover, management of chronic conditions may be simplified and enhanced following accepted EBM guidelines, and the rapidly growing outpatient service sector can be better provided and transparently compared when standard EBM measures are applied.

Accelerate EBM integration. Simply proving the viability of a new medical technique is not enough. It must be broadly shared and accepted to become a new standard of practice, a process which currently may take decades. This step is noteworthy as it overcomes a natural aversion to change that applies as much to clinicians as any other group. When the disparity between alternative measures is backed by data, it is more likely to be adopted. Efforts described in the analysis section above demonstrate such mechanisms can be used to determine best practices and inadequacies, and perhaps more importantly, increase the speed by which best practices are integrated and problems addressed. One potential option is to empower the U.S. Preventive Services Task Force model with Federal Aviation Administration type safety and quality announcement authority whereby health care providers would be required to explain deviations from EBM protocols.

Department of Health and Human Services, DoD, and VHA should collaborate in a “QUEST-like” demonstration. The Military Health System and Veterans Health Administration are uniquely positioned to rapidly implement innovative solutions on a large scale and in a standardized, accountable manner. Similarly, all three departments may achieve economies of scale through such a partnership. This partnership may prove an ideal instrument for pathfinder initiatives from which successful endeavors may be more broadly applied at a national level.

Elder Care Costs

There exist many possibilities for reform in the provision of health care for elderly patients to decrease cost without sacrificing quality. Strengthening primary care and prevention and allowing seniors to age in place are two examples.

Strengthen primary care and prevention. In order to work, the framework needs patients who have a system of health that includes primary care. Further, the framework seems to be most effective in a managed care environment. Managed care organizations paid per capitation have incentives to educate patients, provide preventive services and to treat illness and disease early. The same incentives drive reduction of the over-provision of expensive care, unnecessary elective procedures, and excessive costly testing. There are a number of programs that manage provision of health care for seniors. Among these are the Medicare Advantage program, Accountable Care Organizations, and the Patient Centered Medical Home which should more widely adopted as model programs to increase the focus on primary care and prevention.

Set aside funding to enable seniors to remain in their homes for hospice care. Significant cost savings could be achieved by enabling more elders to remain in their own homes and communities. Many elders desire to stay in their homes and there is ample evidence that health care frameworks can be adjusted to accommodate aging in place. Many seniors would prefer to die at home, reducing costly hospital expenses. Therefore, counseling regarding End of Life Directives needs to be a mandatory part of Medicare enrollment. Subsequent to counseling, individuals must expressly state their wishes in writing; family members need to heed these wishes and providers should enable the family to do so without offering an array of expensive medical alternatives aimed at preserving days or months of life for a frail, ill elderly patient. Hospice care, generally far less expensive than hospital care, can be provided in a facility or at home. Studies indicate that 50-70% of severely ill patients request to die at home, yet less than 20% do so.¹⁰³

Research and Development

Establish a national medical research strategy. Various government agencies and private companies determine the direction that their medical research efforts will take based on their independent strategies. A coordinated national strategy, developed by the Administration and executed through the Department of Health and Human Services, would focus national efforts toward a medical research vision by ensuring both public and private institutions are maximizing the use of their scarce resources. Synchronization at this level will also have an enabling effect on new research, as different institutions capitalize on exploration that has already been developed minimizing duplication of efforts.

Conclusion

Health care touches the lives of all people, providing services and scientific advances that prolong and enhance the quality of life. However, the nation is now at a crossroad in which the cost of its health care will impinge on other aspects of national well-being. The escalating cost of health care is projected to crowd out the Defense budget and other elements of the federal budget, and will increase the national debt to a level that could also threaten national security if not addressed.

Given the complexity of the U.S. health care system, there is no panacea to curb its rising costs. This paper explored a targeted approach to decrease the overall cost of health care by identifying several key cost drivers that could be influenced by policy and process changes. Implementation of these changes has the potential to lower the cost of health care while maintaining quality care.



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