

The U.S. health care system's uneasy relationship with primary care

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Abstract

Background: The main purpose of this essay is to review the role of primary care in the U.S. health care system and assess the probability that health reform will lead to greater emphasis on primary care.

Methods: The author conducted a literature review to present an historical analysis of policies designed to increase the availability and use of primary care in the U.S.

Results: Despite widespread agreement that the use of primary care should be expanded, U.S. policies have encouraged the growth of a system that relies predominantly on specialty care. The 2010 health reform law includes several provisions designed to increase the availability and use of primary care, but the new Congress has threatened to delay the law's implementation.

Conclusions: As concepts, primary care and prevention enjoy nearly universal support in the U.S., but the reality does not match the rhetoric.

Key words: primary care, prevention, patient protection and affordable care act, managed care

"Simply put, in the absence of a radical shift towards prevention and public health, we will not be successful in containing medical costs or improving the health of the American people."

Barack Obama, 2008 [1]

Introduction

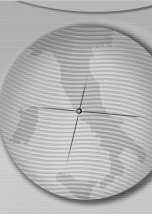
The U.S. health care system is the most expensive in the world, placing great emphasis on the role of new medical technology and pharmaceuticals, and far less emphasis on primary care and prevention. Those who argue for increased spending on prevention often point out that "only" five percent of the more than \$2 trillion dollars spent on health care is devoted to population-wide approaches to health improvement [2]. Drummond and Sampat argue that "U.S. consumers tend to be more embracing of new medical technologies than those in the U.K., and most other industrialized nations. The bulk of worldwide sales for most multinational drug companies are also disproportionately in the U.S." [3].

Although the recent health care reform debate focused largely on the problems of the uninsured and financial barriers to care, critics argue that the system needs an overhaul of its workforce, its delivery system and its financial incentives that reward treating patients after they become ill rather than keeping people healthy in the first

place [4]. In this paper, I provide an overview of the U.S. health care system with a particular focus on the role of primary care and prevention. There are several health plans (e.g. Kaiser Permanente), "integrated delivery systems" (e.g. Geisinger Health System), and government agencies (e.g. Veterans Affairs Health Care System) that emphasize primary care, prevention and disease management, but overall, its role in the system is limited. After providing a review of the existing system, I discuss, briefly, the proposed changes under health care reform designed to enhance the role of primary care and prevention, and comment on their prospects for success.

The U.S. health care system: an overview

The United States relies on a mix of public and private financing and delivery. It has the highest per capita health care expenditures among OECD nations, but its public health expenditure, as a percentage of total health expenditures, is the lowest among these nations. The 2010 *Patient Protection and Affordable Care Act* (P.L. 111-148) will, if fully implemented, expand health insurance

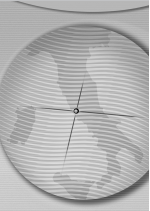


coverage dramatically. Because it relies heavily on the expansion of public programs (primarily the Medicaid and the State Child Health Insurance programs) to increase coverage, the health reform law *may* increase the percentage of total health care expenditures paid for by government.

Health care financing

Currently, most Americans under the age of 65 rely on private, employer-sponsored private health insurance. The expansion of employer-sponsored health insurance during the 1950s and 1960s was induced by a series of administrative, legal, and legislative decisions, none of which were explicitly intended to expand employer involvement in health care. By the end of the 1950s, employers had a substantial role in the financing of health care [5] and employer-based coverage continued to expand through the 1960s, stabilizing in the early 1970s. Since 2000, the percentage of employers who offer health insurance coverage has declined, along with the percentage of employees who take up the offer of employer-sponsored health insurance. In addition, many employers have reduced or eliminated retiree health benefits [6]. This publicly subsidized private health insurance system did not address the health needs of those who were not in the workforce, particularly the unemployed and older persons [7]. The adoption of Medicare and Medicaid in 1965 attempted to fill these gaps. The Social Security Amendments of 1965 (the Medicare and Medicaid legislation) included three distinct layers [8, 9]. The first was based on President Johnson's original proposal. Medicare Part A is a hospital insurance program based on the Social Security contributory model. The second, Medicare Part B, was based on a proposal from Republican Congressman John Byrnes of Ohio and is a voluntary supplementary medical insurance program funded through beneficiary premiums and federal general revenues. The third was the Medicaid program, based on the proposal from the American Medical Association (AMA) and other opponents of the president's hospital social insurance plan. Medicaid broadened the protections offered to the poor under medical vendor payments and to the medically indigent under Kerr-Mills. Medicaid also expanded Kerr-Mills to cover additional older citizens, and eligibility among the indigent was broadened to include the blind, the permanently disabled, and adults in (largely) single-headed families and their dependent children [10]. The scope of the Medicare program has changed little since its adoption in 1965 [11]. In 1972, the program was

modified to include the disabled and people with end-stage renal disease, but the most significant change in the program's scope and structure came with the 2003 Medicare Modernization Act. Along with the creation of Medicare "Part D," a prescription drug benefit, the act also provided incentives to encourage beneficiaries to select Medicare Advantage (MA) plans over the traditional Medicare program. Nearly one quarter of Medicare beneficiaries are now enrolled Medicare Advantage plans, but a large decrease in payments to these plans under the new health reform law could lead to a subsequent reduction in plan participation and enrollment [12]. In contrast to Medicare, which has experienced few increases in scope during its 40-year history, the Medicaid program has grown enormously, particularly since the late 1980s. In the late 1980s a group of southern governors pushed to liberalize coverage for pregnant women under Medicaid [13]. By 1990, the federal government had expanded Medicaid to include all pregnant women and children with incomes below 133 percent of the federal poverty level and required states to phase in coverage of all children in families with incomes below 100 percent of poverty [13]. Under health reform, the floor for Medicaid eligibility was increased to 133% of the federal poverty level for everyone, with the federal government covering the cost for 100% of the newly eligible from 2014 through 2016, 95% in 2017, 94% 2018, 93% in 2019, and 90% federal financing for 2020 and thereafter (Patient Protection and Affordable Care Act, P.L. 111-148). In 1997, the State Child Health Insurance Program expanded public insurance coverage for children even further. After the failure of the Clinton health plan in 1994, congressional Democrats decided to build on the Medicaid expansions of the late 1980s. Republicans opposed a further expansion of Medicaid but supported a block grant program to expand coverage for working-class children. The two parties reached a compromise, and SCHIP was created as a separate program with a funding model that is similar to Medicaid because it provides federal matching funds for state programs that enjoy significant discretion [11]. The federal government provided states with \$40 billion over 10 years to provide expanded child coverage. As of 2006, SCHIP covered more than 6.1 million children [14]. Soon after taking office, President Obama signed legislation providing an additional \$33 billion to SCHIP. This funding helped to enroll an additional 4 million children [15]. The 2010 health reform law extended funding for two additional years [16].



Provider payments

Before the spread of managed care in the 1990s, private insurance in the United States relied primarily on retrospective fee-for-service payments to physicians and other health care providers. Public and private payers in the United States now use a variety of reimbursement methods that include fee-for-service payments and capitation. In the public sector, Medicare relies on a type of negotiated fee-schedule called the resource-based relative value scale (RBRVS). The RBRVS payment formula attempts to account for the resource costs needed to provide each physician service. Medicare Advantage plans and most Medicaid managed care plans receive capitated payments that cover both ambulatory and hospital care. In both Medicare and Medicaid managed care, MCOs use a host of reimbursement mechanisms to pay the health care providers in their networks [17]. The original reimbursement standards used by the Medicare program were generous and paid hospitals and physicians on a retrospective basis [18]. Under the prospective payment system adopted in 1983, Medicare set standard payments for hospitalization. Medicare payments are predetermined on the basis of the patient's diagnosis, after adjusting for the average cost of care for that "diagnosis-related group" (DRG) in the area. Once the hospital determines the diagnosis, Medicare reimburses the hospital on the basis of the set price, regardless of the costs the hospital bears for treating the beneficiary. In theory, this system forces hospitals to become more efficient. If a hospital is able to treat a patient for less than it is reimbursed under the DRG, it is allowed to keep the difference. When it costs more to treat a patient than the DRG rate, the hospital loses money. The shift from fee-for-service to capitation, the adoption of prospective payment, and other reimbursement incentives, have all been designed to encourage hospitals, health plans, physician groups and individual physicians to keep people healthy and reduce health care spending. Despite these efforts, it is still more lucrative for health care professionals in the U.S. to treat people using the newest technology than it is to provide primary and preventive care. For example, in 2006 the *New York Times* reported that comprehensive diabetes centers, which provide education and nutritional counseling designed to prevent complications associated with diabetes often lose money because Medicare reimbursement rates for these services are low [19]. In contrast, hospitals can make a substantial profit when they perform amputations on patients with uncontrolled diabetes [19]. Recently, there has been a push by a few innovative

plans to reverse these incentives and reward providers that invest in keeping patients healthy, but this practice is not yet widespread [20]. Some large insurers are "flirting" with the idea, but others have yet to embrace the approach [20].

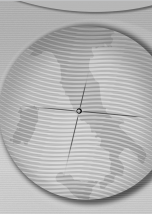
The organization of health care delivery

Organizational arrangements for health care in the United States are noted for being on the private end of the public-private spectrum. In comparison with Western Europe, the United States has one of the smallest public hospital sectors. The absence of a NHI program has resulted in a system of multiple public and private health insurers, and has encouraged a more pluralistic pattern of health care organization and more innovative forms of medical practice - for example, multispecialty group practices, health maintenance organizations (HMOs), ambulatory surgery centers, preferred provider organizations (PPOs), and "point of service" (POS) plans.

Along with the shift from fee-for-service to capitation, the early advocates of managed care believed that the financial incentives used by these plans, coupled with changes to the delivery system that, in theory, make it easier for health professionals to coordinate care, would encourage greater use of primary care and preventive services. Indeed, there is evidence that some managed care plans have achieved great success. Nevertheless, in the mid-1990s, when employers attempted to expand the use of managed care with strict "gatekeeping" that limited access to specialty care, it generated a so-called managed care "backlash." Although the notion that employers and individuals "voted with their feet" and rejected HMOs was exaggerated [21], objections to the use of written pre-authorization, and other techniques designed to reduce the use of "unnecessary" specialty care, forced employers and health plans to loosen restrictions [22, 23].

The health care workforce

In most OECD health care systems, at least half of the physicians are in primary care [17]. The U.S. stands out, in contrast, because about 70 percent of physicians are specialists, and only about 30 percent are in primary care [17]. This is important because systems with a higher concentration of primary care physicians enjoy better results. An effective system of primary care improves coordination and continuity of care [24-26]. Health care systems with a higher concentration of primary care physicians enjoy higher life expectancy at birth and lower infant mortality [27], lower mortality from all causes



[28], lower disease-specific mortality [29], lower rates of avoidable mortality [30], lower rates of avoidable hospital conditions [31], and higher self-reported health status [26]. A high concentration of primary care doctors is also associated with lower health inequalities [25]. Why do health systems that rely more on primary care physicians enjoy better results? It is difficult to establish a causal relationship between the role of primary care physicians and these outcomes, but several hypotheses are consistent with the evidence. First, primary care physicians and nurses are trained to focus on primary health care prevention, including vaccination, which can prevent illness, hospitalization and, in some cases, premature death. For example, primary care physicians are more effective at encouraging smoking cessation, the use of influenza vaccination [32], and the early detection of breast cancer, colon cancer, cervical cancer, and melanoma [29, 33-35]. Second, they are more likely than specialists to discuss the overall health status of their patients, rather than focusing on one specific condition or disease [25]. This orientation helps them to address the needs of patients with multiple co-morbidities, an ability that is increasingly important as population ages [17].

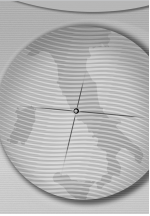
In contrast, systems that rely on a high concentration of specialists tend to use more medical care. Although some of this additional care is almost certainly beneficial, much of this additional care may be unnecessary [36-40]. Evidence of potential supplier induced demand is not limited to the U.S. Even in systems that place greater emphasis on primary care, patients living in regions with more specialists are treated more aggressively with health care technology. In France, for example, heart disease patients living in departments with a higher density of cardiologists are far more likely to receive revascularization procedures than patients living in other departments, even after controlling for need [17].

With few exceptions, the federal government has done little to encourage the growth of primary care providers. Medicare has provided support to teaching hospitals that run graduate medical education (GME) programs since its enactment in 1965 [41]. The government could - through the Medicare program or some other mechanism - use its leverage to transform the training of health care professionals. In fact, the rationale for government support of GME would be even stronger if it did more to influence the content of medical education [41]. In the Balanced Budget Act of 1997, the federal government adjusted the GME formula slightly to encourage the training

of primary care physicians, but most believe a far more aggressive change in financial incentives is required [41]. Along with modest adjustments to the GME formula to encourage primary care, the federal government supports the National Health Service Corps, which provides loan forgiveness and scholarships to medical students who agree to work for a few years in rural areas that suffer from a particularly acute shortage of primary-care providers. Under the new health reform law, this program will receive additional support and Medicaid payments for primary care services will be increased to 100 percent of the Medicare payment rates for 2013 and 2014. The law will also provide a 10 percent bonus payment to primary care physicians in Medicare from 2011 through 2015 [41]. Furthermore, a few medical schools with a focus on primary care have opened in recent years. But according to Howard Berman, the dean of the medical school at Tufts University, which is regarded as a leader in the effort to train more primary care physicians, "all those changes may not be enough to fill the gap" [42]. These efforts, while helpful, are not enough to overcome the tremendous financial incentives for medical students to become specialists.

Proposed changes under health reform

The Obama administration frequently argues that too little is spent on prevention and that greater investment could improve population health and reduce health spending [43, 44]. At a Senate hearing on January 8, 2009, the then HHS Secretary-designate and former Senator Tom Daschle, claimed that "our health care system is not oriented toward prevention" and argued that the U.S. needs to shift from an illness based model of care to a prevention-based model with greater support for primary care [45]. On September 9, 2009 in a speech before a Joint Session of Congress on Health Care, President Obama argued that health reform must require insurers to cover preventive care, including mammograms and colonoscopies, "because there's no reason we shouldn't be catching diseases like breast cancer and colon cancer before they get worse. That makes sense, it saves money, and it saves lives" [46]. The assumption that an expanded use of primary care and prevention will save money is not accepted by everyone. Indeed, many researchers question whether prevention is capable of generating the benefits attributed to it [43, 44, 47]. Prevention may improve health, but the costs of prevention are often larger than the savings [47, 48]. In many cases, increased use of primary care and preventive services

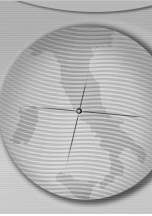


increases health care spending. The logic of this argument was adopted by the Congressional Budget Office Director Douglas W. Elmendorf, who argued that, "Although different types of preventive care have different effects on spending, the evidence suggests that for most preventive services, expanded utilization leads to higher, not lower, medical spending overall" [49]. While the effect of prevention on health care spending is controversial, few disagree that better primary care and prevention have the potential to improve health. The *Affordable Care Act* includes several provisions designed to increase investment in primary care in prevention. Along with those described in the section above, the law established a National Prevention, Health Promotion and Public Health Council charged with developing, within one year, a strategy for improving the nation's health; a "Prevention and Public Health Fund," with \$7 billion in funding for 2010 through 2015 and an additional \$2 billion in each fiscal year after 2015 to support prevention research and a host of public health activities. The law also eliminates cost-sharing for Medicare beneficiaries associated with preventive services that have received a grade of A or B by the U.S. Preventive Services Task Force - and it waives the deductible for colorectal cancer screening

[50]. The renewed emphasis on primary care and prevention is promising. Nevertheless, it is not yet clear whether the investments included in the health care reform law will be sufficient to challenge the high-tech nature of health care delivery and practice in the U.S. and thus result in a new orientation for the system. Furthermore, the new Republican majority in the U.S. House of Representatives may attempt to delay the implementation of reform or deny funding for some of its major provisions. But even if the new Congress provides funding to enhance primary care, implementing this change will be difficult. If a greater emphasis on primary care might also result in more limited access to specialty care, history suggests it will be particularly difficult to implement such a shift. Powerful forces, including a well financed biotechnology and health care industry, academic researchers, patient advocacy groups, along with a general public that does not trust government efforts to limit medical technology, are likely to resist the move toward a health care system that relies more heavily on primary care and less on new medical technology [4, 51]. As concepts, primary care and prevention enjoy nearly universal support in the U.S. - but the reality does not match the rhetoric.

References

- 1) Welch HG. Campaign Myth: Prevention as Cure-All. *New York Times* 2008;October 6:D6.
- 2) McGinnis JM, Williams-Russo P, Knickman JR. The case for more active policy attention to health promotion. *Health Affairs* 2002;21(2):78-93.
- 3) Drummond M, Sampat B. Health Technologies in the U.S. and U.K. Presented to the LSE-Columbia Health Policy Group, New York, NY, January 13, 2010.
- 4) Callahan D. Taming the Beloved Beast: How Medical Technology Costs are Destroying Our Health Care System. Princeton: Princeton University Press, 2009.
- 5) Field M, Shapiro H, eds. Employment and Health Benefits: A Connection at Risk. Washington, DC: Institute of Medicine, 1993.
- 6) Gottschalk M. Back to the Future? Health Benefits, Organized Labor and Universal Health Care. *J Health Politics Policy Law* 2007; 32(6): 923-70.
- 7) Starr P. The Social Transformation of American Medicine. New York: Basic Books, 1982.
- 8) Blumenthal D, Morone JA. The Heart of Power: Health and Politics in the Oval Office. Berkeley, CA: University of California Press, 2009.
- 9) Marmor TR. The Politics of Medicare. Chicago: Aldine Pub. Co, 1973.
- 10) Grogan CM, Gusmano MK. Healthy Voices, Unhealthy Silence. Washington, DC: Georgetown University Press, 2007.
- 11) Brown LD, Sparer M. Poor program's progress: The unanticipated politics of Medicaid policy. *Health Affairs* 2003; 22(1): 31.
- 12) Gusmano MK. Financial Impact of Health Care Reform: Making Sense of Conflicting Reports. *Bioethics Forum*, May 17, 2010.
- 13) Sparer M. Medicaid Federalism and the Politics of National Health Insurance. Paper presented at the American Political Science Association Meeting, Chicago, August 17, 2007.
- 14) Health Division Children's Defense Fund. Outreach strategies for Medicaid and Schip: An Overview of Effective Strategies and Activities. Washington, DC: Kaiser Family Foundation, 2006.
- 15) Levey NM. Obama signs into law expansion of SCHIP health-care program for children. *The Chicago Tribune* 2009;February 5. Available from: www.chicagotribune.com/news/nationworld/chi-kids-health-care_thufeb05,0,30310.story. [Accessed on November 3, 2010].
- 16) Patient Protection and Affordable Care Act, U.S. Public Law 111-148.
- 17) Gusmano MK, Rodwin VG, Weisz D. Health Care in World Cities: New York, London and Paris. Baltimore: Johns Hopkins University Press, 2010.
- 18) Morone J, Dunham A. Slouching Towards National Health Insurance: The New Health Care Politics. *Yale Journal of Regulation* 1985; II: 2 (Spring).
- 19) Urbina I. In the Treatment of Diabetes, Success Often Does Not Pay. *New York Times* 2006; January 11.
- 20) Abelson R. A Health Insurer Pays More to Save. *New York Times* 2010; June 21.
- 21) Marquis MS, Rogowski JA, Escarce JJ. The Managed Care



- Backlash: Did Consumers Vote with Their Feet? *Inquiry* 2004;41(4):376-90.
- 22) Mechanic D. The Managed Care Backlash: Perceptions and Rhetoric in Health Care Policy and the Potential for Health Care Reform. *Milbank Quarterly* 2001;79(1): 35-54.
- 23) Sipkoff M. Old Techniques Never Die, Nor Even Fade Away. *Managed Care*, 2006;January. Available from: <http://www.managedcaremag.com/archives/0601/0601.preauthorization.html>. [Accessed on June 22, 2010].
- 24) Casanova C, Starfield B. Hospitalizations of children and access to primary care: A cross-national comparison. *Internat J Health Services* 1995;25(2):283-94.
- 25) Shi L, Starfield B, Macinko J. Contribution of Primary Care to Health Systems and Health. *The Milbank Quarterly* 2005;83(3):457-502.
- 26) Shi L, Starfield B. Primary care, income inequality, and self-rated health in the United States: A mixed-level analysis. *Internat J Health Services* 2000;30:541-55.
- 27) Vogel RL, Ackermann RJ. Is primary care physician supply correlated with health outcomes? *Internat J Health Services* 1998;28:183-96.
- 28) Shi L, Macinko J, Starfield B, Wulu, J J. , Regan J, Politzer R. The relationship between primary care, income inequality, and mortality in the United States, 1980-1995. *J Am Board Family Practice* 2003;16:412-22.
- 29) Campbell RJ, Ramirez AM, Perez K, Roetzheim RG. Cervical Cancer Rates and the Supply of Primary Care Physicians in Florida. *Family Med* 2003;35:60-4.
- 30) Weisz D, Gusmano MK, Rodwin VG, Neuberg L. Population Health and the Health System: Avoidable Mortality in 3 Wealthy Nations and their World Cities. *Eur J Public Health* 2008;1(2):166-72.
- 31) Gusmano MK, Rodwin VG, Weisz D. A New Way to Compare Health Systems: Avoidable Hospital Conditions in Manhattan and Paris. *Health Affairs* 2006;25(2): 510-20.
- 32) Saver B. Access to Ambulatory Care by the Indigent. Final Report, AHCPR Small Grant No. 1 RO3 HS07253. September. NTIS PB97-134456, 1996.
- 33) Ferrante JM, Gonzalez EC, Pal N, Roetzheim RG. Effects of Physician Supply on Early Detection of Breast Cancer. *J Am Board Family Practice* 2000;13:408-14.
- 34) Roetzheim RG, Pal N, Gonzalez EC, Ferrante JM, Van Durme DJ, Ayanian JZ, Krischer JP. The Effects of Physician Supply on the Early Detection of Colorectal Cancer. *J Family Practice* 1999;48:850-8.
- 35) Roetzheim RG, Pal N, Van Durme DJ, Wathington D, Ferrante JM, Gonzalez EC, Krischer JP. Increasing Supplies of Dermatologists and Family Physicians Are Associated with Earlier Stage of Melanoma Detection. *J Am Acad Dermatology* 2000;43:211-8.
- 36) Fisher ES, Bynum JP, Skinner JS. Slowing the Growth of Health Care Costs — Lessons from Regional Variation. *New Eng J Med* 2009;360(9):849-52.
- 37) Wennberg JE. Population illness rates do not explain population hospitalization rates. *Med Care* 1987; 25(4): 354-9.
- 38) Wennberg JE, Barnes BA, Zubkoff M. Professional uncertainty and the problem of supplier-induced demand *Soc Sci Med* 1982;16:811-24.
- 39) Wennberg JE, Freeman JL, Culp WJ. Are hospital services rationed in New Haven or over-utilised in Boston? *Lancet* 1987;1(8543):1185-9.
- 40) Wennberg JE, Gittlesohn A. Small-area variations in health care delivery. *Science* 1973;182:1102-8.
- 41) Gusmano MK, Schlesinger M. The Social Roles of Medicare: Assessing Medicare's Collateral Benefits. *J Health Politics Policy Law* 2001;26(1):37-81.
- 42) Carmichael M. The Doctor Won't See You Now: A critical shortage of primary-care physicians is yet another symptom of our ailing health-care system. *Newsweek* 2010; February 26.
- 43) Cohen JT, Neumann PJ, Weinstein MC. Does preventive care save money? Health economics and the presidential candidates. *New Eng J Med* 2008;358(7): 661-3.
- 44) Marmor T, Oberlander J, White J. The Obama Administration's Options for Health Care Cost Control: Hope vs Reality. *Ann Int Med* 2009;150(7):485-9.
- 45) Daschle T. Statement to the Senate Committee on Health, Education, Labor and Pensions. Senate Committee on Health, Education, Labor and Pensions, Washington, DC, January 8, 2009.
- 46) Obama B. Remarks by the President To A Joint Session of Congress on Health Care. U.S. Capitol, Washington DC. The White House Office of the Press Secretary, September 9, 2009, 8:16 PM.
- 47) Russell LB. Preventing Chronic Disease: An Important Investment, But Don't Count On Cost Savings. *Health Affairs* 2009;28:42-5.
- 48) Russell LB. Is Prevention Better Than Cure? Washington, DC: Brookings Institution Press, 1986.
- 49) Elmendorf DW. Letter to the Honorable Nathan Deal, Ranking Member, Subcommittee on Health, Committee on Energy and Commerce, U.S. House of Representatives. August 7, 2009.
- 50) Henry J. Kaiser Family Foundation. Summary of the New Health Reform Law. Available from: <http://www.kff.org/healthreform/upload/8061.pdf>. [Accessed on November 4, 2010].
- 51) Gusmano MK, Gray BH. Evidence and Fear: Navigating the Politics of Evidence Based Medicine. *Academy Health Reports* 2010;June:1.