

## Controversies in biomedicine

# US health care reform: reality and implications for Asian health care providers, administrators and policy makers

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The US health care delivery system is a dysfunctional mess [1], lacks a cohesive and affordable national plan, is addicted to technology and gadgets, has a fee-for-service reimbursement structure which discourages medical students from going into primary care specialties, and suffers under the weight of an iron quadrangle: the health insurance industry, politicians, hospitals, and the pharmaceutical industry.

This quadrangle, while giving lip service to health care reform, is fighting to maintain the status quo and its own bottom line. While the medical profession may be losing the 'war', it has its own shortcomings, such as overspecialization, and the emphasis on 'half-way' technologies [2] rather than those interventions that were proven effective by randomized clinical trials [3]. In addition, the proliferation of subspecialty societies, largely dedicated to promoting their own interests, has added to the challenge of meaningful reform. This situation is another example of the 'Tragedy of the Commons': finite resources *vs* unlimited demand [4]; a concept also described earlier by Thucydides and Aristotle [5].

Although there is a long history of reform efforts [6], the current 'non-system' has been remarkably resilient and resistant to change [7]. During the 2008 election campaign, neither candidate proposed a meaningful major reform plan. The American congress is beholden to too many special interests, has lost the respect of the American public and has so far proven inept and inert.

The United States cannot afford to continue with this \$2 trillion dinosaur without major reform. Patchwork fixes, such as electronic medical records and tort reform [8, 9], will not suffice. Health maintenance organizations (HMO's) and managed-care organizations have not had significant impact in spite of early successes. Health care has been transformed from a public service into a business commodity, paying obscene salaries to greedy senior executives [10].

The US system is tilted highly to the expensive delivery of health services at personal and public expense in the form of reduced pay and benefits and high-cost insurance and taxes [11], when common sense should dictate otherwise. As Emmanuel and Fuchs have described, we in the U.S. have produced 'A Perfect Storm of Overutilization' [12]. The pendulum must move back to the center, with a balance of affordable insurance for all, primary care as the underpinning for people, reimbursement systems which reward primary care givers fairly, and 'Taming the Technology Beast' [13]. No amount of effort at cost control, primary care, electronic medical records, etc. will succeed unless a more rational system of technology development and distribution is implemented, including the study of safety and other unintended consequences [13].

The implications for Asian health care delivery seem clear. "Do not follow the US example". Work toward a rational balance (diagonal) of primary (horizontal) and speciality (vertical) care [14-17]. And remember that without proper use of effective technologies (immunization, safe drinking water and sanitation), you will fail. Here, 'vertical' applies to aiming for disease-specific results (specialization), 'horizontal' applies to broader improvement in health systems, 'diagonal' applies to improving the broader health system to achieve disease-specific results [14-17].

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Countries outside the United States of America, Asia in particular, which are enamored by US technology-driven specialty health care innovations,

should first make careful study of the cost, demonstrated effectiveness, efficacy, and sustainability of such programs [18-20].

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According to a WHO analysis, the United States ranks 37<sup>th</sup> among 191 countries evaluated in the overall quality of health care [21], and this has generated considerable controversy [22-25]. However, another study cited by the National Center for Policy Analysis (NCPA) indicated that the US ranked number one in cancer care with higher 5-year survival rates than European countries [26]. In a more recent comparative study supported by the Commonwealth Fund, comparing 19 developed countries, the United States finished last in a measure of preventable mortality. Between 2006 and 2008 surveys, the US access to health care declined, while system efficiency remained low [27]. The full report and slides in "PDF" or "Microsoft Powerpoint" are easy to download.

Issues of ethics [28], fairness in resource allocation [29] and benchmarking progress in health reform [28] are also on the WHO agenda. For example, an impressive study in Thailand employed focus groups as part of their evaluation of fairness [30].

Health care reform is a complex issue which has generated a voluminous literature ('thunder'), but little focused solutions ('light'). What is needed is less 'thunder' and more 'light'! This is not to demean the numerous dedicated efforts of the past or current thoughtful proposals, but rather to underscore the difficulty of changing a system seemingly entrenched in stone [1, 21]. Another issue, which needs careful study, is medical professionalism and the risk of declining into the 'craft guild' model of the "Middle Ages" where physicians are ranked similar to carpenters, tailors, builders [31].

Currently, in light of the highly-charged 2008 presidential campaign, there are two major ideas being promoted concerning US health care reform: 1) a single payer system such as 'Medicare for All', House bill HR676 passionately supported by Physicians for a National Health Program [32a], and 2) Consumer Driven Health Care espoused by such credible experts as Professor Regina Herzlinger of Harvard [1]. Each proposal has both merit and risks, but continuing with the status quo will increasingly erode American people's ability to obtain essential care. Contrary to popular belief, a significant number of the estimated 47 million uninsured Americans suffer from chronic conditions. A recent study [32b] reports that about 11 million working-age Americans with chronic disease such as cancer, diabetes, cardiopulmonary disease, hypertension, and hyperlipidemia have no health

insurance.

The US health insurance industry has also introduced a plan for health care reform which they say will slash \$145 billion from health care costs [33]. Their proposal includes:

- 1) comparing cost and effectiveness of treatments;
- 2) widespread adoption of health information technology;
- 3) tort reform to replace the medical liability system with a dispute resolution process;
- 4) adoption of values-based payment systems;
- 5) emphasize prevention and enhanced treatment of chronic disease. Whether or not this approach is feasible, needs further careful study and seems to leave the health insurance industry in a dominant position. This will not result in meaningful reform in this writer's opinion.

Other aspects of reform need addressing. The respected American College of Physicians has issued a position paper on health care reform comparing US health care to that of other countries [34, 35]. The report has been criticized as lacking in 5 areas:

- 1) clarifying whether a proposed single-payer system will resemble Medicare or Medicaid;
- 2) the impact of non-participation of physicians;
- 3) the impact of litigation and lack of comparison with medicolegal systems of other countries;
- 4) issues of chronic disease management and end-of-life care as both are expensive;
- 5) simplification of billing and collection procedures [36].

Meanwhile, in light of the inability or unwillingness of the US Congress to introduce meaningful reform legislation, several states have experimented with their own versions, which have not proved sustainable. One often-discussed plan is that of Massachusetts as a model for national reform. However, while increasing the number of insured individuals, this plan has serious shortcomings. It currently has a financial shortfall, and the lack of an adequate supply of primary care physicians to care for people was not considered in the development of the reform legislation [37, 38]. The intensity of commentary about health care reform is increasing.

### **Other issues requiring further study**

#### ***Electronic medical records (EMR's)***

Although widely touted as a major component of health care reform with significant impact on quality

of care, recent research speaks otherwise [39], with the possible exception of the Veteran's Administration (VA) EMR system [40]. For those interested in more information about EMR's, the New England Journal of Medicine has published several pertinent articles. One survey of U.S. physicians in ambulatory care found that only 4 percent had a fully functional system, and 13 percent had a basic system [41]. Widely utilized global standards for data formats have yet to become a reality [42]. Also, a number of pitfalls have been described, such as blanket copying of medical histories by house staff ('medical plagiarism') and the pressure to produce electronic medical records to justify reimbursement [43]. Further complicating the picture is the development of personally controlled online health data, with players such as Google Health and Microsoft HealthVault entering the \$2 trillion health care market [44]. While I personally support the need for EMR's, they are still a long-term work-in-progress. Most physician practices still use paper charts no different from when I graduated from medical school in 1956, except for dictated/transcribed notes, problem lists, improved immunization records, allergy flagging, and flow charts. Our local hospital has adopted EMR's, an improvement not yet fully accepted by the physicians. One computerized innovation I really appreciate is the automation of routine X-ray procedures, along with MRI's, PET, and CT scans. I doubt if there is any experienced physician who has not been frustrated by lost or misfiled films. Now when I go to see my doctor about my chest X-ray or MRI for my spinal stenosis, he pulls the information up on the screen and we can view together. This has proven to be a boon to patients, clinicians, and radiologists around the globe, with 24-hour real-time reading services available to large numbers of people. Unfortunately, such services are not available to the poorest and most remote. Therein lays the rub-vertical vs. horizontal vs. diagonal health care, the "Tragedy of the Commons" in cameo!

***Primary care and global shortages of primary care physicians and nurses: lessons from the failure of the 1978 Alma-Ata declaration on primary health care and the US National Residency Matching Plan (NRMP)***

The year 2008 is the 60<sup>th</sup> anniversary of WHO and the 30<sup>th</sup> anniversary of the Alma-Ata Declaration on primary care, which advocated primary care as the principal strategy for achieving health for all by

the year 2000 [45]. However, the Declaration was not implemented as planned, and a 'vertical', disease-focused model followed. In a 2004 review by Magnussen et al [46], the authors emphasized that meeting people's basic health needs cannot occur outside of the local/regional economic, political, and social environment. Now, this is further complicated by the prospect of climate change, and food, fuel and water scarcity [47, 48]. While there have been some notable successes, such as with smallpox and guinea worm disease, there have been resurgences of other problems, such as measles, polio and mumps, even in developed countries [49, 50]. Margaret Chan, Director-General of WHO, put the issue succinctly [51]: 'I have visited countries and viewed their showcase hospitals and research institutes. I have also viewed the struggle for health in their poorest communities. I have seen abundant evidence that health is an issue with a high political profile. ...' Health care is one of the top 2008 US presidential campaign issues, along with the economy and the war in Iraq.

In the United States, 2005 predictions were that there will be a shortage of 85,000 physicians by the year 2020, and a subsequent report in 2006 predicted a shortage of 55,000 to 150,000 physicians by 2020. All this, after earlier projections of a physician surplus [52]. This same report also describes the aggressive growth of schools of osteopathic medicine during the past 20 years, and the increase in enrollment from 6892 students in 1990 to 15,586 students in 2007. The American Osteopathic Association projects that the supply of osteopathic physicians will be over 90,000 by 2015. However, even if these projected shortfalls are correct, and medical school enrollment increases, this won't help the sorry state of US health care delivery. It will only make things worse, and access to care or finding a 'medical home' will become more difficult. In a rebuttal to this 'enroll more medical students' idea, Goodman and Fisher [53] point out that policy-makers are on the horns of a dilemma: increase funds for medical school enrollment or focus on the real problems in health care financing and delivery. There must be better incentives for going into primary care and more equitable reimbursement for cognitive compared with procedural specialties. The authors also point out the wide variation in practice patterns throughout the United States, even in academic medical centers (e.g. UCLA vs Mayo-Clinic). These factors are also reflected in the US Residency Matching Plan [54]. In the past few years, primary care residency

programs have not filled the available positions with US seniors. For example, in 2008 family medicine filled 44.2% of positions with US senior medical school graduates, pediatrics 67.3%, and internal medicine 61.5%. These gaps were then filled with international medical graduates (IMG's), placing additional stress on developing countries needing their services. This 'brain drain' has caused considerable concern, both from an ethical and practical standpoint. A clear inverse association has been demonstrated between the number of health workers per 1000 population and maternal, infant, child under 5 mortality [55].

One other program deserves mention in filling physician needs in underserved rural or urban areas: the J-1 Visa Waiver Program (education exchange visa). This visa requires that upon completion of a US residency training program, the IMG must return to their home country for at least 2 years before applying for immigrant status to the United States. The requirement can be waived in return for providing primary care or general mental health care in federally-designated rural and urban communities with primary care provider shortages [56]. At Wisconsin these J-1 waiver physicians worked well with the medical community and achieved satisfactory responses from patients, but there was lower satisfaction with their integration into the community-at-large. This resulted in a lower retention rate [57]. Other factors contributing to physician shortages include population growth and aging, physician aging and attrition, changing practice styles, a larger percentage of women physicians (who want to work part-time when having children), and more temporary physicians [58].

The nursing profession faces similar challenges, and nursing schools in the United States have difficulty in recruiting enough faculties to teach large classes [59]. The college also reports that 40,285 qualified applicants were turned away in 2007 due to an insufficient number of faculty, clinical sites, classroom space, clinical preceptors, and budget constraints.

A 2006 report from the International Council of Nurses [60] on the global shortage of registered nurses highlighted the negative impact of health manpower in achieving the WHO Millennium Development Goals (MDG's). This should be required reading for policy-makers. Some key points:

1) there is huge variation in nurse population ratios throughout the world, from less than 10 nurses to more than 1,000 nurses per 100,000 populations;

2) the ratio in Europe is 10 times that of Africa and Southeast Asia;

3) the problem in developing countries is made worse by maldistribution: fewer nurses in rural and remote areas;

4) Sub-Saharan African countries have a shortfall of more than 600,000 nurses needed to meet the MDG's;

5) three critical challenges related to nursing shortages are: the impact of HIV/AIDS; internal and international migration of nurses; and achieving effective health sector reform and reorganization;

We should also remember that nursing shortages, like physician shortages, are frequently a reflection of wider health system and/or socio-economic problems [61].

#### ***Filling the gap: advanced practice nurses/nurse practitioners (NP's).***

Currently there are about 170,000 nurse practitioners (NP's) in the United States, if you include nurse anesthetists and midwives (Anonymous, personal communication 2008). Julie Fairman of the University of Pennsylvania has recently published a history of the NP movement in the US [62]. There are many graduate degree Master of Science (MSN) programs in nursing colleges throughout the country. I have had several happy years of experience working with MSN/NP graduates from our local college of nursing during my tenure as a corporate medical director. I found them to be well-trained, intelligent, collegial, and challenging. I have also worked with those from other venues, such as nursing members of International Society of Travel Medicine (ISTM) interested in travel medicine, and some who have their own independent practices. Recently, several local area businesses, such as Walgreens and Piggly-Wiggly grocery stores, along with an area shopping mall, have opened walk-in clinics staffed by NP's. In my experience, these people do an excellent job within their professional scope of practice and many of them are better listeners than I ever was!

According to the ICN mentioned above, it is estimated that about 40 countries have advanced practice nursing roles [60c]. This website contains a wealth of information for those interested. For example, click on 'Practice Issues' on the left task pane and you will find descriptions of NP practice in Thailand. While there aren't sufficient numbers of NP's to offset the severe shortage of registered nurses, they do help support some of the primary health care

needs in their communities. In Thailand, Chiang Mai University has a college of nursing formed in 1959, which awards both undergraduate and graduate degrees [63]. In February 2008, they also conducted an international conference: "New frontiers in primary health care: role of nursing and other professions". Deans of several nursing schools from the United States, United Kingdom, and elsewhere participated. This is an example of a critical point I mentioned earlier. Those who are international policy-makers in their own countries must develop your health programs within the context of your country, culture, economy and your environment. The United States and other developed countries have much to offer, but be wary of copying their mistakes to your sorrow.

#### ***Contribution of public health to the general state of health in the United States***

Much of the good health we enjoy today is the result of public health legislation and the efforts of a variety of agencies to provide us with safe drinking water and sanitation. In addition, the tireless efforts of those at the US Centers for Disease Control and Prevention (CDC) and related organizations to protect our health are most praiseworthy. Immunization against vaccine preventable diseases is another notable achievement, along with numerous other programs designed to protect the nation's health. These include a viable and active occupational health care system.

On a broader scale, the World Health Organization (WHO) continues to contribute to global health, even in the face of daunting barriers to achieving success. Success stories include smallpox and guinea worm disease. As mentioned above, those who are policy-makers must keep these objectives and challenges foremost on your agendas. Safe water and sanitation, along with meeting primary care needs of all your people are the critical underpinnings of any effective health program.

There are two interesting CDC websites which provide valuable historical information on the history of quarantine and the history of the CDC from 1946-2007 [64].

As most readers know, epidemiology is one of the key elements of modern public health and health care administration. John Snow, who took the handle off the Broad Street Pump in London in 1854, is widely regarded as the father of modern epidemiology [65]. In the planning environment, it is necessary to set priorities based on properly-performed epidemiologic

studies. So before you start distributing "hi-tech" facilities and equipment, be sure your people aren't dying from contaminated drinking water or lack of sanitation, and that they have access to basic primary care health services. In short, build/fix your system first, and then focus on other issues.

#### ***Quality assessment and outcome research. Evidence-based medicine (EBM) and the Cochrane collaboration***

This area owes much to two people of different backgrounds:

- 1) W. Edwards Deming, noted for his research and contribution to quality improvement in manufacturing in the United States and especially Japan (see the Wikipedia article for more complete information);
- 2) Professor Archie Cochrane, whose book "Effectiveness and Efficiency. Random Musings on Health Services" 1972 [66] resulted, with help from the imagination and leadership of others, in the Cochrane collaboration, one of the pillars of evidence-based medicine. Another early pioneer was David Sackett, a Canadian physician whose book on evidence-based medicine [67], served as a primer for many years. Cochrane's basic premise for quality health care included universal access and treatment based on randomized Clinical Trials (RCT's).

There are three key online EBM resources for clinicians [68a-c]:

- 1) American College of Physician (ACP) Journal Club, now a regular feature in the Annals of Internal Medicine;
- 2) Evidence-based medicine, its British counterpart;
- 3) Bandolier.

A third important development has taken place, and is described in detail by Michael Porter and Elizabeth Teisberg in their book: "Redefining Health Care" [69]. They reaffirm previous ideas on the importance of measuring outcomes [70a] in the context of value-based competition as opposed to the current game in US healthcare, which they term zero-sum competition (Cost-shifting to the other guy). Another important part of their book (pp. 374-380) is the section Implications for Health Care Policy in Other Nations, in which adequate primary care coverage is a key. Although health care costs in countries outside the United States are lower, they nevertheless will be under increasing cost pressure. The ideas in this book, such as medically-integrated practice units, should serve policy-makers well in getting a heads-up on

future challenges. Remember not to circumvent physician and nursing leaders in your deliberations, as they are ‘agents of change’ essential to success [70b, 70c].

Three other recent quality-improvement developments are being implemented:

- 1) Pay-for-performance (P4P) [71-75];
- 2) Electronic prescription writing (e-prescriptions) [76];
- 3) Medicare no-pay rule for 10 hospital-acquired conditions [78].

The 10 pilot physician groups in the Medicare demonstration project reached nearly all their quality-improvement goals, and were awarded a total of \$16.7 million in bonuses related to benchmarks for 27 quality measures focused on congestive heart failure, coronary artery disease, and diabetes [77]. Other studies have produced mixed results. One of the recent studies from the United Kingdoms on self-reported care in adults aged 50 or more, revealed some shortfall in meeting P4P objectives [73]. Results were best for conditions included in P4P contracts (circa 75%) compared with conditions not included (circa 58%). Another study of P4P on quality of care and outcomes in acute myocardial infarction was not associated with significant improvement in outcomes, but the P4P did not adversely affect outcomes [72]. The American College of Physicians has issued an ethics-oriented position paper expressing concern over the effect of P4P on physician-patient relations and the potential for ‘gaming’ the system of deselecting patients [74a]. Data from 8105 family practices in England [74b] showed that physicians excluded about 5.3% of patients from quality calculations, but found little evidence of ‘gaming’ the system to raise their scores and reimbursement.

The new Medicare e-prescription rule provides financial incentives for physicians to participate. Doctors will receive 2% of billable Medicare charges for 2009 and 2010, 1% for 2011 and 2012, and 0.5% in 2013. Doctors who do not use the system will incur financial penalties, with payment cuts of 1% in 2011 and a maximum of 2% for 2013 and beyond. While EMR’s are a work-in-progress, electronic prescriptions are much easier to implement.

The Medicare no-pay rule [78] has caused considerable concern, especially about treating higher-risk patients. The final rule targets 10 hospital-acquired conditions, including stage III/IV pressure ulcers, fall or trauma resulting in serious injury, vascular catheter-associated infection, catheter-associated urinary tract infection, foreign object retained after surgery, certain surgical site infections, air embolism, blood incompatibility, certain manifestations of poor blood sugar, certain deep vein thromboses or pulmonary embolism

### ***Medical tourism***

This appears to be a growing development. According to a recent article in the Economist [79], there were about one million Americans who traveled for care last year and the number is projected to increase to 10 million by 2012, resulting in revenue losses to American hospitals of about \$160 billion. This has also been a subject of discussion at the Harvard Business School [80] and has aroused some criticism because of concerns over continuity of care and the impact of such activities on the already-stressed health systems of developing countries. When I googled for ‘Medical Tourism’, a myriad of commercial sites popped up offering to make arrangements for patients wanting to travel to India and Thailand for treatment. One possible long-term benefit is that the rapid growth of this model may stimulate American hospitals and insurance administrators to move a little quicker toward reform. There is nothing like losing money to get their attention!

### **Conclusions**

As can be seen from the above discussion, health care reform is an extremely daunting task. While a single-payer system has gained considerable support during the past two years, the political reality in the United States will make it extremely difficult to pass it to our next congress, due to the powerful special interests whose bottom-line is at risk. Nevertheless, I believe it is a worthy goal, one that will require considerable political will and grass-roots efforts of the American people. For those Asian readers who want more information on single-payer systems,

**Table 1** contains a brief list of resources.

**Table 1.** Single payer resources.

1. Wen CP, Tsai SP, Chung WI. A 10-year experience with universal health insurance in Taiwan: measuring changes in human health and disparity, *Ann Intern Med.* 2008; 148:258-67.
2. Physicians for a National Health Program. [www.pnhp.org](http://www.pnhp.org)
3. Single-Payer Health Care. [www.wikipedia.org/wiki/Single-payer\\_health\\_care](http://www.wikipedia.org/wiki/Single-payer_health_care), Accessed 18 AUG 2008.
4. The Dutch system-Not Single-Payer but of interest as an alternative. See Muiser J. WHO 2007; The New Dutch Health Insurance Scheme. HSS/HSF/DP.07.3. This is also discussed (and criticized) on the PNHP web site [www.pnhp.org](http://www.pnhp.org), search for 'Dutch system' and several links are listed. Accessed 18 AUG 2008.
5. British National Health Service. [www.nhs.uk](http://www.nhs.uk), also [www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1447686](http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1447686). Accessed 18 AUG 2008. Light DW. Universal Health Care: Lessons from the British Experience. Has a good section on policy dilemmas facing health care systems, such as 5. How shall primary care be integrated with specialty and hospital care? Two recent editorials in the British Medical Journal underscore the evolving nature of the NHS, with implications to be considered by others (both accessed 18 AUG 2008):
  - a) Klein,R. Editorial. What does the future hold for the NHS at 60? *BMJ.* 2008; 337:a549.
  - b) Gauld R. Local accountability in the NHS (editorial). *BMJ.* 2008; 337:a1103.

Again, the key points raised herein are: 1) Health care reform is a very complex issue. Be sure to involve physicians and nurses in deliberations. They are the ones who will bring your system into reality; 2) Beware of implementing programs without careful study in order to avoid unintended consequences. Be careful about copying U.S. medical technology for general use; 3) Focus on basic services, primary care, prevention, and providing reasonable incentives and training for health care workers to remain in their own country; and 4) And remember, 'There are no passengers on spaceship earth. We are all crew'.

This article is written from the perspective of a general internist who has been on the medical scene for more than 50 years. The author spent 13 years in private practice in a multi-specialty clinic and community hospital, 20-plus years as the chief medical officer of a "Fortune-100" corporation, and has held professorial appointments at two Midwestern US medical schools. The opinions expressed are those of the author alone and no one else. The author has no conflict of interest to declare other than he and his family are consumers of the American health care system themselves.

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