Future of Health Care

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I. Introduction

I am delighted to join you today to talk about the future of health care. This is a topic that has created a great deal of interest in the past few years, including a half dozen major books and a series of monographs by the Institute of Medicine. One of the more interesting is Newt Gingrich's book Saving Lives and Saving Money: Transforming Health and Health Care. Although I disagree with some of his ideas, my theme today shares his emphasis on health, not just health care. In addition, I agree with his stress on the extraordinary improvements in the health of the population during the past century, his recommendations related to science and education, the priority that should be accorded to the Centers for Disease Control and Prevention, and his views about the importance of active, healthy aging.

In order to look into the future, I will first look back, particularly at the improvements in the health of the population of the United States in the past 100 years. I will pay particular attention to what has worked in research, medical education, public health and medical care.

Then, I will view the current situation in medical care and public health. Finally, I will suggest some future directions that I believe can be helpful in improving and protecting the health of the American people.

II. The Nation's Health

Let me begin this journey with a few general observations about the improvements in the health of the population during the 20th Century. I will also comment on what has worked.

A. Public Health

In the early 1900's in the United States, many of the major health threats were infectious diseases (e.g. tuberculosis), including diseases associated with poor sanitation and hygiene, (e.g. typhoid), diseases associated with poor nutrition (e.g. pellagra, goiter), poor maternal and infant health, and diseases and injuries associated with unsafe workplaces or hazardous occupations.

Among the ten great advances in public health in the 20th century identified by the Centers for Disease Control and Prevention (CDC), five dealt directly with these problems. The advances included:

1. Vaccination
2. Control of infectious diseases
3. Healthier mothers and babies
4. Safer and healthier foods
5. Safer workplaces

The changes that resulted are striking:

-The crude death rate from infectious diseases dropped from 800/100,000 population in 1900 to less than 400 by 1920 and to 200 by 1944 when penicillin first came into clinical use to under 100 per 100,000 population today.

-The infant mortality rate dropped significantly from 100/1000 live births in 1900, with rates as high as 300 infant deaths per 1000 live births in some cities. By 1940, the infant deaths were less than 40/1000 live births. Current infant deaths are less than 7/1000 live births. If the infant death rates of the turn of the century had continued, then an estimated 500,000 infants born during 1997 would have died before the age of one (1). Instead, 28,045 died.

The infectious diseases that were rampant in the 19th century were controlled, first by public health measures, then after the mid 20th century by clinical medicine contributed as well, particularly with the development and use of the sulfonamides, penicillin, and the broad spectrum of antibiotics. As a result, chronic diseases, such as cardiovascular disease and cancer emerged as the major causes of death and disability. In addition, motor vehicle accidents became a serious public health problem.

In the second half o the 20th century, the ten great advances in public health listed by the Centers for Disease Control and Prevention (CDC), which I referred to earlier, included five advances that represented challenges very different from those posed by infectious disease:

1. Motor vehicle safety
2. Decline in deaths from heart disease and stroke
3. Family planning
4. Fluoridation of drinking water
5. Recognition of tobacco as a health hazard.

Let me cite one example—deaths from cardiovascular disease. Deaths from cardiovascular disease declined from over 400 deaths per 100,000 population in 1950 to less than 200 today. For coronary heart disease, the decline began in the early 1960's and has fallen from over 200 deaths per 100,000 population to less than 100 deaths per 100,000 population. For stroke, the mortality rate has been falling since 1900, when it was over 100 deaths per 100,000 to about 25 deaths per 100,000 currently.

The declines in cardiovascular disease mortality are the result of both public health measures, especially those related to cigarette smoking, diet and exercise, and medical treatment, particularly the more effective treatments for high blood pressure and the use of aspirin prophylactically.

It seems clear from the ten great achievements in public health in the 20th century that public health efforts worked.

Currently, there is a very serious underinvestment in public health, both as described by the Institute of Medicine and in the more narrowly defined governmental functions in public health.

B. Medicine

One hundred years ago medical research was in its infancy; medical education was largely a proprietary enterprise with most medical schools under the direction of a practicing physician who gave lectures to poorly prepared students. Clinical training for fledgling physicians consisted of apprenticing to practitioners and health care was haphazard. The United States ranked far behind England, Scotland, France and Germany in medical education and health care.

1) Medical Education

By 1900, there was a ferment of scientific activity in a small number of university-based medical schools, particularly Johns Hopkins, Harvard, Pennsylvania, and the University of Michigan. These medical schools were applying lessons learned in Scotland and Germany.

The reforms that were to transform medical education, including graduate medical education in the United States began at Harvard Medical School in 1871 and grew dramatically after Johns Hopkins Medical School opened its doors in 1893.

In 1910, the famous report by Abraham Flexner, Medical Education in the United States and Canada, was released by the Carnegie Corporation. The report found medical education in a deplorable state, largely driven by proprietary interests. Flexner recommended that medical school require at least three years of college for admissions and two years of laboratory science during medical school followed by two clinical years with training supervised by fulltime faculty in teaching hospitals. Flexner was very clear in his views about medical education, writing that "the public interest is paramount."

Following the Flexner report, the proprietary medical schools closed—the last one in 1947, which was the year that I interned in Boston. University-based medical schools were established, including at Stanford University and the University of California, and today these university-based medical schools are among the most highly regarded medical schools in the world.

Programs of graduate medical education—the hospital-based training after 4-5 years of medical school—are also regarded as among the best in the world. These programs expanded rapidly after World War II to meet the needs of the returning veterans, many of whom were supported by the GI Bill.

A major federal program to support the expansion of medical education was initiated in 1963 were physicians were in short supply. The result was a doubling of medical school enrollment and graduation in little more than a decade.

At Stanford and UCSF, progress was rapid after the Flexner Report. UCSF School of Medicine began as the private Toland Medical College in San Francisco in 1864 and became part of the University of California in 1873. The first two ears were transferred to the main campus in Berkeley after the earthquake and great fire of 1906, where they remained until 1958.

Stanford Medical School also had its origins in a proprietary school, Cooper Medical College, which had been established in 1858. Under the leadership of Dr. Levi Copper Lane, the school underwent a transformation from the old style commercial medical school to the modern scientific medical school. In 1894, Cooper Medical College adopted a four-year curriculum, raised admissions standards and in 1911, it became Stanford medical School under the leadership of Dr. Ray Lyman Wilbur. One of Dr. Wilbur's first acts was to establish the basic science—anatomy, physiology, biochemistry, bacteriology, and histology on the Stanford campus, continuing clinical training in San Francisco. Even at that time, thought was given to moving the medical school to the Stanford campus.

In Time to Heal: American Medical Education from the Turn of the Century to the Era of Managed Care, Ludmerer summarized the dramatic developments in these words:

"No factor has been more important to the achievements of medical practice in the United States than the country's schools and teaching hospitals (or academic health centers, as these institutions are typically called). Their importance lay in the education of the nation's doctors, generation of new medical knowledge, introduction and evaluation of innovative clinical practices and provision of the most sophisticated medical care available."

2) Research

Let me say a little about the generation of new knowledge.

It is important in our look back that we recognize the transformation in medicine and public health that took place because of the advances in science. While sciences, such as chemistry, biology, physiology, histology, and pathology were advancing in the 19th Century, it was not until the advances in bacteriology late in the 19th century that the modern era in medicine and public health began. These advances were stimulated by Pasteur's germ theory of infection presented to the French Academy of Medicine in 1878.

Later, with his colleagues Jobert and Chamberland, Pasteur spelled out his conviction that microorganisms were responsible for disease, putrefaction and fermentation; that only particular organisms could produce specific conditions; and that once those organisms were known, prevention would be possible by developing vaccines. He was later to prove this theory in developing a vaccine for anthrax in animals and for rabies in humans.

Even more important in advancing our understanding of infectious diseases was the work of Robert Koch and his associates in Germany. Koch achieved his first great scientific triumph in 1882 by identifying the cause of tuberculosis. Soon, his colleagues (or others using his methods) identified the causes of numerous diseases, including cholera, diphtheria, typhoid, pneumonia, gonorrhea, cerebrospinal meningitis, undulant fever, leprosy, plague, tetanus, whooping cough and various other streptococcal and staphylococcal infections.

The earliest clinical advance to follow this research was the development of diphtheria antitoxin, first used in Berlin in 1891. When diphtheria toxin came into general use in Europe by 1894, it cut mortality in half. Later, the widespread use of diphtheria immunization virtually eliminated the disease by the 1920's.

The advances in bacteriology were just part of a growing body of knowledge applicable to medicine and public health. The story is truly remarkable: advances in nutrition, particularly related to vitamin deficiencies and diseases, genetics, and biochemistry, including the isolation of thyroid hormone by Kendall in 1944 and his synthesis of cortisone in 1948, the advances over many years related to goiter and myxoedena, advances in cardiology after Henrich's description of the first heart attack patient to survive in 1912.

The modern medical research enterprise in the United States began with the establishment of the Hygienic Laboratory, a bacteriology laboratory staffed by a single physician, at the U.S. Marine Hospital on Staten Island in 1887. In 1900, the Hygienic Laboratory was moved to Washington, D.C. When the U.S. Public Health Service was established in 1912, from the Marine Hospital and Public Health Service, the Laboratory was the research branch of the Public Health Service.

In 1930, the Laboratory moved to Bethesda, Maryland and its name was changed to the National Institute of Health. In 1937, the Cancer Act was passed and provided authority for the federal government to give grants to support research and research training in Universities.

Two other key developments were the establishment of the Rockefeller Institute in New York City and the development of university-based biomedical research laboratories.
After World War II, with the creation of the Heart Institute, the Dental Health Institute, and the Institute of Mental Health, the National Institute of Health became the National Institutes of Health. Today with a $28 billion budget, with 90 percent of funds supporting grants for research and training universities and independent research institutions, it is recognized as the premier medical research institution in the world. Many of the advances in medical care and public health have been spawned by the NIH support research.

In the same period of expanded research support by NIH, there has been a dramatic

expansion of research by the pharmaceutical and biotech industries with the development of a remarkable array of diagnostic and therapeutic agents. Clearly biomedical research works, but the growth of funding needs to be sustained and the support for health services research needs to be expanded dramatically.

After Medicare was enacted, it paid the salaries of residents and the higher costs of care in teaching hospitals. This permitted another expansion of the graduate medical education programs to meet the nation's need for more physicians. Many of the recruits to the Medicare-supported expansion of graduate medical education were graduates of medical schools throughout the world, particularly from Asia and Latin America.

I believe that medical education and graduate medical education have worked. Currently, the most important issues related to medical education are the adequacy of physician supply, the inadequate funding of student financial aid and the balance between primary care training and the training of specialists already in oversupply.

3) *Medical Care*

Let me move on from medical education and research to medical care where the results are far spottier. The most important advance in medical care in the last century was the development of multispecialty group practice. The Mayo Clinic, which is by far the largest and oldest of the private multispecialty group practices, was formed in 1887 when Dr. W.W. Mayo was joined in a partnership by his two sons, William J. and Charles J. Mayo. The Mayo Clinic Foundation was organized in 1915 and supported by an endowment given by the Mayo brothers. The Foundation was originally part of the University of Minnesota Graduate School and the Mayo Properties, which were organized in 1920 as a charitable corporation without capital stock. The organization evolved over the years, established a medical school in the early 1970's, separated from the University of Minnesota, purchased the St. Mary's and Methodist hospitals, developed a regional health care system and opened Mayo Clinics in Scottsdale, Arizona and Jacksonville, Florida.

The Foundation model developed by the Mayo Clinic has now been duplicated in a number of areas of the country, including the Palo Alto Medical Foundation. My dad established the Palo Alto Clinic with six partners in 1930. In the 1950s, the Clinic established a separate, non-profit research institute, In the 1960s, Clinic partners separated the ownership of the facilities from the practice and in the 1980s, the current nonprofit foundation model was established with the Research Institute, the Education Division and the Health Care Division. There are now over 500 physicians in the three medical groups—Palo Alto, Camino, and Santa Cruz that form the Health Care Division. The main focus of these groups has been community-based care—not referral practice, although that is part of any large group practice.

Many other multispecialty groups have evolved along similar lines in Texas, Washington, Montana, Illinois, North and South Dakota, Wisconsin, Pennsylvania, Ohio, Minnesota, Iowa, Indiana, and California.

The second most important development in medical care was the link between capitated prepayment and multispecialty group practice. The most successful model has been Kaiser Permanente.

Two more successes are private health insurance and Medicare. It appears that after 70 years, the string may be running out on employment-based health insurance.

4) *Medicare*

Despite the problems in medical care today, for most of us age 65 years and older, Medicare has worked.

One little recognized fact is that in 1966, Medicare was the principal means to desegregate over 1000 hospitals in the South that were practicing gross segregation based on race. It was the provisions of the Civil Rights Act of 1964 combined with Medicare's dollars, which would not go to hospitals that did not meet the federal desegregation guidelines, that led these hospitals to desegregate. Medicare also led to the desegregation of residency training programs in hospitals throughout the country.

Medicare was enacted because over half of the elderly could not obtain private health insurance after they had retired and many with health insurance could not afford the costs of medical care, even with insurance. Medicare was designed to provide income protection for the elderly who might incur high medical care costs. This was the rational for providing hospital insurance. Payments for physician services, which were sometimes quite costly, were added at the time as a voluntary benefit. Over 90% of the elderly participated.

Medicare was considered a public or social good, not a market good. Taxpayer dollars, including a special tax on employers and employees to pay for hospital costs, in addition to general tax revenues, plus a premium that now pays for 25% of the Part B medical insurance costs—used primarily to pay for physician services—financed the program. Last year, a prescription drug benefit was added to Medicare.

However, the future of Medicare remains in doubt because there has not been a consensus in recent years about its role.

C. Why has it worked?

Let me move from what has worked to why. In the examples that I have cited of what has worked several factors seem evident:

1. First, with a few notable exceptions, the medical profession, particularly as it spoke through the American Medical Association, the American College of Surgeons, the College of Physicians, the American Academy of Pediatrics, the Association of American Medical Colleges and various specialty societies, supported the change;
2. Second, either foundations or the federal and state governments provided the resources to make the change possible;
3. Third, there was agreement that these changes were necessary to benefit society as a whole. Public health, medical research, medical education, and Medicare are examples.
4. Finally, the leadership and the political will necessary to do the job were present. This was evident in the leadership of the Mayo brothers and multispecialty group practice. There have been many other leaders in group practices over the years. Certainly we have seen it at the Palo Alto Clinic with my dad, Dr. Russell Lee, my brother, Dr. Hewlett Lee, and Dr. Jamplis who put the current foundation structure in place. The importance of leadership was also clearly evident when Medicare was enacted in 1965 and when it was used in 1966 in conjunction with the Civil Rights Act of 1964 to desegregate the hospitals in the South and to transform the hospitals and programs of graduate medical education.

D. Why has it not worked?

1. When reforms did not succeed or were only partially successful, it was often

because the medical profession opposed the changes (national health insurance in 1935, 1948, 1978, and 1993).

2. When the medical profession was divided, as has been the case for primary care and specialist training, or when the leadership was not sufficient to overcome the resistance to change, the changes did not take place.

E. What's Next?

There have been more than a dozen books published in the past few years as well as numerous monographs, foundation reports and websites that try to explain and to help us to understand where we are now and what can or should be done to deal with the problems of access to care, the quality of care, the costs of medical care, and the underfunding of public health.

One of the more interesting books that helps us understand why many initiatives did not work is Dead on Arrival: The Politics of Health Care in Twentieth Century America, by Colin Gordon, a history professor a the University of Iowa. He addresses five core themes, within which race and gender figure prominently in defining issues and solutions and producing successes and failures.

The first theme is the growth of private, employer-based health insurance, which developed after the American Medical Association (AMA) opposition prevented action on national health insurance proposals in the 1930's and 1940's. This was particularly important after the defeat of President Truman's proposal for national health insurance in 1949, when the AMA launched the most expansive lobbying campaign in history against national health insurance.

Second, health care was separate from all other social programs and developed as a business-labor partnership leading to benefits that were part of employment contracts rather than social entitlements. This partnership emerged after World War II when the federal government exempted health insurance benefits provided to employees from federal income tax. For the employers ho provided health insurance to employees, this was considered a business expense.

It was not until the enactment of Medicare in 1965 that medical care became an entitlement, for a limited segment of the general population, the elderly. Prior to that time only members of the armed forces and veterans with service-related disabilities had medical care as an entitlement.

Third, AMA opposition was strong enough until 1965, when Medicare was enacted to preclude any effective action by the federal government related to national health insurance.

Fourth, males and male perspectives dominated health care as a profession, while female policy-makers concentrated mainly on women and children—such issues included child labor and maternal and child health.

Fifth, the corporatization of health care solidified power in industrial firms, with insurers and later managed care organizations as the dominant players. These firms were all market entities supported philosophically and financially by the government. The government accepted paying for the unprofitable populations, mainly the elderly and the poor.

Finally, reformers were usually disorganized and were no competition for powerful economic interests, closely tied to the lawmakers.

This historical perspective helps us to understand why we face some of the current challenges.

III. The Current Crisis

The current crisis is evident in both medicine and public health, and in the relationship between the two. The problems have recently been summarized by the Research and Policy Committee of the Committee for Economic Development.

"The current U.S. health care system is unsustainable. It has major flaws that must be addressed. Problems of high costs, low quality and limited access are interwoven and feed on each other" (CED, p.3).

A similar view is expressed by Dr. Roger Howe in his book, Where Have We Failed? A Systematic Analysis of U.S. Health Care. He predicts that "within the next decade or so, the insurance paradigm is likely to break down."

Among the problems listed and analyzed by the CED were:

1. Health care costs are exploding
2. There is increasing evidence of inappropriate medical care: overuse, underuse, and misuse of health care services are leading to adverse outcomes and unnecessary costs.

The problem of the uneven quality of care is one of the most serious problems confronting physicians, hospitals, patients, and policymakers. In 1999, the Institute of Medicine published a report on the Quality of Medical Care, titled To Err is Human. In the report, it noted that between 44,000 to 98,000 Americans die each year in hospitals due to medical errors.

In their book, Epidemic of Care, Halverson and Isham summed up the risks in this way:

> "The chance of dying in a domestic jet accident is approximately one in 8 million. Only a few planes crash every year. By contrast, accidents in U.S. hospitals kill the equivalent of a 747 full of passengers every 24 hours." (pg. 14)

3. Patients frequently want unrestricted access to all providers at little or no cost. Drs. George Halverson and George Isham state it very simply: "if it works or might work, you owe it to me."
4. Nearly 40 million Americans lack health coverage (now this figure is over 42 million).
5. A small proportion of patients with serious chronic illness and disability account for a large proportion of health spending.

It is important to realize that one percent of the population incurs 30 percent of the health care costs, and five percent of the population incurs over 50 percent of the costs. About 70 percent of the population incurs only about 30 percent of the costs and 20 percent of the population incurs no health care costs at all.

6. The health care industry while making dramatic technological advances in diagnosis and treatment is extremely inefficient in delivery of care.

The CED report notes that "the problem is not a lack of good intentions, but a series of system flaws" (CED, p. 3).

There are many others who agree with the problems in the health care system described by the Committee for Economic Development. They do not, however, give as much emphasis to the role of market forces in dealing with the problems as does the CED.

One of those is Dr. David Lawrence, the emeritus Chairman and Chief Executive Officer of Kaiser-Permanente. In his book, Chaos of Care, he poignantly describes the problems faced by a child with asthma and her family as they struggled with the solo practice, fee-for-service based medical care system. No matter how well intentioned their physician, this system did not work.

Dr. Lawrence is a strong advocate of team-based care, and his prescription focuses on the care of the patient.

Dr. Lawrence believes that four groups must drive the necessary changes:

1. payers, including employers, union trusts and governments at all;
2. intermediaries, the health plans, health insurance companies, and administrative services, handle most of the funds that pay hospitals, physicians, pharmacists, and other care givers;
3. state and federal governments buy care, set and enforce rules, invest in infrastructure, research, and development;
4. medical consumers, who select insurance coverage for themselves and their dependents versus medical service and pay some portion of the costs of care. He describes medical consumers as the "lynchpin."

In their book, Epidemic of Care, which I referred to earlier, Halverson and Isham go into more detail and describe, "a true national strategy" that includes seven major initiatives:

- "Initiative one should improve quality of care and patient safety;
- Initiative two should address consumer choice, behaviors and incentives, creating an improved market model for both buying and selling health care;
- Initiative three should improve population health;
- Initiative four should prevent monopolistic and other anticompetitive behaviors;
- Initiative five should create a workable framework for dealing with the uninsured;
- Initiative six, to make sure miracles keep happening, should result in adequate support to the health care delivery system by funding training, medical education, medical research, a resupply of the health care workforce and a reengineering of actual health care delivery particularly in hospital settings;
- Initiative seven creates an underpinning for the entire cost, value and quality agenda: the creation of automated medical records that will give doctors and patients in the exam room all the information needed to provide the best care efficiently and consistently. The use of that system is embedded in each of the other objectives." (pg. 156-157).

I cannot emphasize strongly enough their last two recommendations. This is another area where Newt Gingrich and I agree.

In their book, they spell out the steps that they think are necessary to implement these initiatives. I think that these proposals make a lot of sense.

In contrast to the comprehensive approaches proposed by the CED, by Dr. Lawrence, and by Drs. Halverson and Isham, we find that President Bush and the leading Democratic candidates for President all focus their policy proposals on the financing of medical care, either through tax incentives, employer mandates or public financing. None have proposed initiatives, such as those described by Halverson and Isham. In particular, none have proposed an approach for creating an adequate infrastructure to create automated medical records and accurate, reliable e-health websites that would be easily available.

IV. Summary and Conclusions

Let me return to my initial remarks about what worked and why. When initiatives worked it was often because they were viewed, quite correctly I might add, as public goods, not market goods. This is not the case in our current health care crisis.

There is the widespread perception by practicing physicians, but also medical school faculties and hospital leaders, that medicine faces a crisis because of managed care. In my view, the crisis is not due to managed care, but to the widely accepted view that medical care is a "market" good, not a public good, as it is in Canada, the United Kingdom, France, and virtually all Western, industrialized democracies.

The presumption in the United States is that private markets best determine the production and consumption of goods and services, including medical care. The assumption is that government intrudes with policies only when private markets fail to achieve the desired public objectives, as in the federal support for biomedical research; federal, state, and local government support for public health; and Medicare.

When one looks at the health policy response to market failure, particularly since World War II, it is evident—in contrast to many other countries—that we have taken an incremental and categorical approach to both public health and medicine, at both the national and state level. We have not taken the kind of comprehensive approach suggested by Halverson and Isham.

Currently, in part because of this fragmented approach, the market seems to function in medical care mostly for the employed and insured middle and upper classes.

Even for the employed population, the federal government provides a tax subsidy in excess of $100 billion annually for the purchase of private health insurance through employment. For public health and safety, as demonstrated in response to bioterrorism, the market does not provide adequate protection.

If, as I have postulated, the current crisis facing medicine is at its root due to the widely accepted view that medical care is a market good and not a public good and that the public health infrastructure has been underfunded for 20 years or more, what can be done to create a health system in the new millennium that meets the needs of an increasingly diverse, aging population?

The answer is to be found, I believe, in applying the lessons of history, in critically analyzing our current crisis and in finding the common ground, using the type of multi-pronged strategies to deal with the problems of costs, quality, access, and underfunding of public health that have been proposed by Halverson and Isham. If Newt Gingrich and I can agree on a number of the issues, progress is certainly possible.

I have given you my very brief summary of the lessons of history and several options for initiatives to deal with the crisis. At the most fundamental level, progress has been achieved when the public good, not the market, prevailed, and when medicine and public health collaborated in the public interest. It is time that we applied those lessons.

Thank you.