

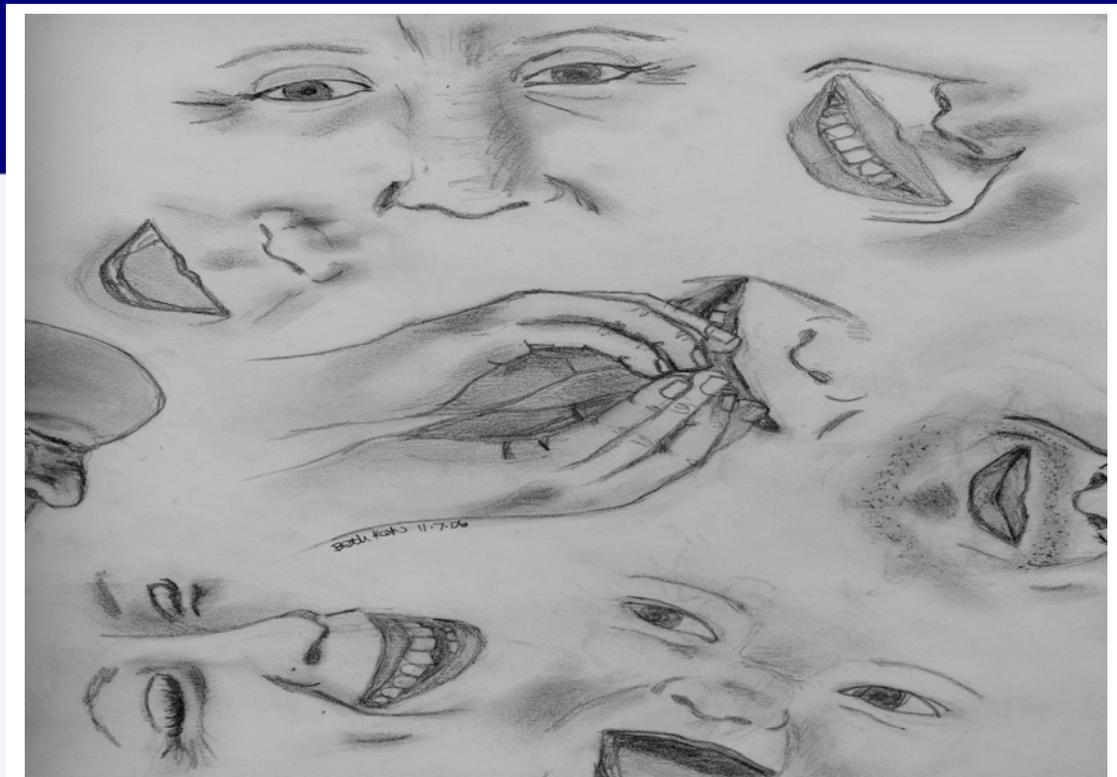


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Letter from the Editors:

Dear MDR Reader:

We are very excited to present to you this second issue of MDR, the Journal of Medical Dialogue Review. We aim to present to you issues, trends, and opinions in medicine without the technicalities and jargon often found in academic medical journals. Our journal shall be of interest to everyone, including aspiring physicians, nursing students, current healthcare practitioners, as well as the general public. It shall be a bridge between the people affected by healthcare, the people currently practicing healthcare, and the ones who hope to be effectors of the healthcare system. In our journal, you will find reviews and perspectives from not only outstanding undergraduate and graduate students, but also from patients and current experts in healthcare.

As reader of MDR, you are undoubtedly included in a circle, where dialogues about medicine are supported and where free ideas about the healthcare system are exchanged. We challenge you to get inspired, to think critically about what you read, and to question what you learn. We encourage you to research areas of medicine that interests you and to submit your own article to MDR. Starting from the next issue, you will be welcome to submit "letters to the editors," where you can express your own opinions about a previously published article. We hope that you really take this opportunity to explore medical issues pertinent to yourself and to society.

On behalf of Medical Dialogue, we genuinely want to thank you for choosing to read MDR and we look forward to continue serving you!

Sincerely,

The Editors of the Medical Dialogue Review

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Cover Image: “Sourire Sincère”

Beth Koh

Being in the medical field as a researcher, a nurse, or a surgeon, is highly noble. However, medical workers often forget what is most important: being able to emphasize and relate to their patients. This skill cannot take a year, five years, or even ten years of medical training to learn. Expression of emotions, being universal to all, can be achieved even through a language barrier and is a true connection between the doctor and his patient, which is essential to establish trust. This drawing depicts many different smiles that a medical worker may encounter, whether it’s the smile of the patient out of relief, the family of the patient out of appreciation, or the doctor himself out of comfort. But, the smiles are only one emotion to which a doctor should pay attention, although here the smiles are representative of emotions as a whole. Doctors cannot forget that first and foremost patients are humans, with desires, needs, and feelings.

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Introduction to this Spring 2007 Issue:

Why do people buy brand name drugs, instead of generics? It might not just be about the taste. In “Why is a free lunch so expensive?” Homchaudhury analyzes an interesting liaison between physicians and pharmaceutical companies, which might explain why patients are more likely to buy one drug over another.

Medicine affects us all, and by all we mean the world. Currently there is a major Hepatitis C epidemic in Egypt. Sutan describes how it all started. According to Camille, one particular epidemic puzzles physicians in developing countries: poverty. She discusses the relationship between medicine and poverty. And be thankful for the broken stretcher in your local emergency room, because in India, you might not have any. In this issue, learn about some interesting facts and experiences about the Indian healthcare system.

Medicine is changing! Contrary to common beliefs, Vullo argues that there might be a physician shortage in the US. And according to Katona, there is an entire healthcare worker hysteria around the globe. Why is it that we need people in healthcare and what can happen in the future if the situation stays the same?

You have probably heard about a vaccine for HPV. The implication is that, in the future, some cancer treatments for women will be different. Speaking about the future, we are nearing borderline science fiction. What if your physician could make medications tailored for your particular health needs? What if your doctor could read you, quite literally like a book, from all the information given by your DNA? Or what if your physician could install inside of you a small monitor that tells her exactly when you become sick? Reviews by Etzion, Briden, Katona, and Jacques suggest that the future might be soon.

The final section of the journal introduces more food for thought: What has changed about the ancient practice of plastic surgery? To the future health worker: how does it feel to have Muscular Dystrophy? We conclude this issue with a review of the book *Hope Or Hype: The Obsession with Medical Advances and the High Cost of False Promises*. Myoung recommends it for anyone who wants to gain a new perspective on this issue.



Why is a Free Lunch so Expensive?

Angana Homchaudhury

The desire to take medicine is perhaps the greatest feature which distinguishes man from animals.

--Sir William Osler (1849-1919)

This prophetic quotation seems to have foreseen the current reliance of people upon prescription drugs and the subsequent growth of the pharmaceutical business. Pharmaceutical companies currently comprise a multi-billion dollar industry. Americans are bombarded on a daily basis with evidence of this mammoth presence through billboards, magazine ads, and television commercials. However, more specifically, how the pharmaceutical industry advertises to doctors has recently come into question. Over the past few decades, pharmaceutical companies and physicians have come to depend upon each other and have formed a relatively intimate relationship. Physicians prescribe medications that are produced by drug companies and paid for by patients. Modern physicians rely greatly on medical technology for diagnosis and treatment of their patients and without these drug company products, some might have little else to offer their patients. Doctors attend company-sponsored educational events, carry out company-backed clinical trials, and serve as company consultants. Without physicians, drug companies would not have a direct channel to patients.

It is this intricate interplay that should be examined to decide the legitimacy with which and the extent to which a drug company might

“advertise” to health professionals. Does the relationship between pharmaceutical companies and physicians, specifically through marketing targeted at physicians, lead to a conflict of interest that harms patients through higher prices, or does it provide patients with a better product through education for their doctors?

The pharmaceutical industry has ballooned into a multibillion-dollar industry and, “drug companies now spend twice as much marketing medicines as they do researching”¹ them. The United States is unique in allowing drug companies to advertise directly to consumers. Pharmaceutical companies point out that this advertising is done in the best interest of the consumer, so he/she is aware of his/her options and can more easily speak to a physician about a potential medical issue. A patient might not have known that certain symptoms were signs of disease or disorder or might need a slight push to speak to a doctor. Additionally, a physician might not necessarily spot all of a patient’s symptoms during visits and so this advertising allows consumers to be more aware of their own health and to use physicians and drug companies more as advisors. However, Kaletra® is an example of a drug that seems to have been marketed more by targeting a lifestyle rather than symptoms. This new drug is used to treat HIV and is different because it has a less constraining regimen than previous treatments. However, ads for

Kaletra® typically simply feature a party scene or the face of a young person and the caption “Ask your doctor about Kaletra®.” No mention of the drug’s indications is ever made. Though some drug advertising is informative for patients, other advertising campaigns have been called into question for their apparent lack of educational value.

Though we may have come to accept advertising to consumers, it is probably because it has become such a pervasive part of our lives. Ads exist in all forms of media. It is in the mail we receive at home, on the radio waves we listen to during our commutes, in the magazines and publications we read, and on the billboards we view. Specifically, cures for ailments have been advertised to Americans since the days of the pioneers. However, pharmaceutical companies began their almost exponential expansion of advertising in the past few decades, only recently in the history of the nation. The relationship between drug companies and physicians is relatively young, still evolving, and receptive to reform (if necessary). The way company representatives shower physicians with gifts is not new to the medical industry. Gifts can range from pens and paper pads to trips to medical conferences and fees for enrolling patients in clinical trials. Doctors insist though, that they are not easily swayed by this kind of attention. However, studies have demonstrated that even when physicians make a conscious effort not to be affected by the attention of pharmaceutical companies, they prescribe that company’s medication more often than others that accomplish the same end².

Some fear that results like these show that pharmaceutical companies are able to buy their way into the hearts of physicians. It is possible that physicians feel obligated to these companies, for the huge amounts that are spent on them. Or maybe these affected physicians are simply unaware of these possibly subconscious effects. A physician might counter that by attending a company-sponsored

conference, he/she might become more informed about a drug and simply prefer it to a drug about which he/she is less well informed. And isn’t this the ultimate goal of a pharmaceutical company, to make physicians comfortable with their product so that it is bought?

In “When Your Doctor Goes to the Beach, You May Get Burned,” Dr. Abigail Zuger discusses an incident involving a colleague (unnamed) who feels that he can have a mature relationship with the drug companies and be completely unaffected by their attempted advertising targeted towards him. The colleague points out that “if the drug companies are naïve enough to imagine that their largess will buy his loyalty, then so be it—it is their gamble, and their loss”⁵. Some physicians try to attend as many conferences as possible to show that they are impartial. However, these doctors are in turn naïve if they believe that the companies would invest billions into a field the effectiveness of which can be so easily limited by the target audience. Studies have shown that it is difficult for physicians not to forget a drug that was advertised to them. “In one clever 1992 study published in the journal *Chest*, Cleveland researchers surreptitiously tracked doctors’ use of two drugs before and after all-expense paid educational jaunts to sunny resorts. They found that drug prescriptions more than tripled, an effect that persisted for more than a year, while the use of equivalent drugs remained stable”². Still, doctors counter that the relationship is integral to the progress of medicine. The drug companies feel the same way: they wish to educate physicians about the latest medical advances and want to use the medical expertise of these professionals by sponsoring research that will further the existence of their own companies.

We can see a relationship similar to that between drug companies and physicians

in political races. In “Recent Experiences Aside, in Politics Wealth Isn’t All,” Patrick D. Healy discusses the possibility that “personal wealth does not guarantee victory” in political races³. Though Mayor Mike Bloomberg (NYC) and Senator Jon Corzine (NJ) are two examples of millionaires (billionaire in the case of Bloomberg) who won their positions and financed themselves, there are many more instances of wealthy individuals who could not buy their ways into the hearts of the voters. Typically, such candidates are painted by their opponents as “aloof, elitist, and out-of-touch”³. They are viewed as wishing to buy an election, something that typically puts off the average voter, someone who would seemingly dislike a candidate with fake ambition. In the same way, one can think of these wealthy candidates as wealthy pharmaceutical companies, spending millions to win the hearts of physicians. And though we often believe that advertising pervades all thoughts, there is essentially something in all of us that is somewhat offended by flashy shows of wealth. Drug company representatives who come into the private offices of physicians with prepared and rehearsed spiels, throwing around Viagra® pens and Levitra® coffee mugs, can be compared to millionaire candidates who attempt to buy votes from their constituencies. If we can think so highly of ourselves as to assume the ability to spot the fake attention of drug companies while leafing through a magazine or watching TV, we should trust our physicians to spot this same kind of attention waltzing through their offices.

The attention of drug company representatives may be easy to ignore when it comes in the form of stuffed animals, pens, and other small gifts. However, it is when these gifts become trips to medical conferences in exotic lands and checks featuring six-figure numbers¹ that we begin to question the decisions of our physicians.

The central charge is that pharmaceutical companies use financial lures to persuade physicians to favor their drugs. The past few

decades have seen the development of an army of drug company representatives, typically young, charming individuals who visit physicians’ offices and workplaces to pitch their companies’ products. The practice of using these representatives might not have been so much of an issue if some kind of policing body existed. In “As Doctor Writes Prescription, Drug Company Writes a Check,” Gardiner Harris explains that a reason for the explosion of the drug marketing industry is the lack of a governing body for these practices, a lack that was created by the reduction in the powers of the FDA in 1976, and which created “a vacuum that many companies decided to exploit”¹.

Currently, one of the issues at hand is the payment of consulting fees to doctors. Ideally, these fees are paid to physicians in return for their help in developing a drug. However, currently, there are court cases pending in which the plaintiffs charge that consulting fees are paid to doctors to keep them loyal to a company’s product. It seems as though today, these fees are simply paid to a physician for being a patron and choosing the company’s product for their patients. Such fees can also include payments for specific physicians to speak at engagements about research or in support of a company’s drug. Drug companies often organize medical conferences and pay for all the expenses incurred by the physicians who speak and those who simply attend. The companies are essentially paying for physicians to become educated about their drugs.

But before we brand physicians who attend these conferences as money-loving opportunists, we must first consider their intentions for accepting this questionable attention. Medical conferences sometimes offer educational credits, a certain number of which physicians must obtain every year in order to maintain their licenses. Also, pharmaceutical companies endorse

thousands of medical research endeavors every year and attending these conferences keeps a physician up to date with the latest happenings in medicine. As in any industry, an employee must keep up with the advances in a business. Additionally, education is a costly necessity, both in fiscal terms and with regard to time. Attending medical conferences takes time away from work and family, translating into a closed office and lost profits for those physicians in private practice. So while it is a deserved incentive to provide physicians with news and information about new drugs and treatments, this can probably be carried out in a less expensive way. By spending less money on these symposia, the companies will incur fewer costs and can create a greater focus on the initial goal of conferences: to educate physicians about their drugs rather than to sell their products. Overall, conferences demonstrate a symbiotic relationship in which both doctors and drug companies have something to gain.

Clinical trials sponsored by drug companies and carried out by physicians within their patient bases have come under attack as well. Traditionally, clinical trials are used to assess the possible usefulness of a drug in a certain population. However, in these specific cases, companies are said to set up these trials to make doctors and patients familiar with their drugs. The reasoning is that after a physician has become used to and comfortable with a particular medication, he/she will be more likely to prescribe it over long periods, leading to sustained profits for the companies. A cursory view of this relationship would fail to realize that these trials serve to introduce drugs to groups that would soon become dependent upon them out of habit¹.

In these cases, the bottom line was with regard to how many patients would buy the drug and how many physicians had become comfortable prescribing it. In this case, little importance was placed on gaining knowledge, the assumed goal of a clinical trial. Still, we cannot completely disregard the advantages of

clinical trials just because of the abuse of a few companies. These trials allow drug companies to glean much-needed and sought-after information about drugs that they have spent millions of dollars developing. They also offer hope to patients who might not be able to wait for the drug to be used commonly in healthcare.

Physicians are the intermediary between the drug companies and the people. Without physicians, people would simply be left to themselves with regard to which drug to choose for a particular ailment. Left without an advisor in the form of a physician, they would be forced to make decisions based solely on the advertising from drug companies. Likewise, without drug companies, no drugs would be produced, and modern physicians, who rely so much upon technology and machines to diagnose and treat, would be at a loss when trying to assist patients. Of course, there was a time in history when behemoth-sized companies *didn't* produce and sell drugs. Physicians were autonomous entities who made their own remedies. However, this is no longer the case and physicians have become advisors, intermediaries between drug companies and patients.

The medical conferences will not stop because education is a vital aspect of medicine. We can only continue to have these advances that extend our lives if the major players are allowed to communicate. If in the case physicians are forbidden to have ties with companies, patients will suffer greatly because doctors will be less able to help their patients. Still, some trust might be returned to patient-doctor relations and drug companies might be able to divert more funds to research and development if advertising is no longer an issue.

In the end, the important thing to remember is that in medicine, the patient is of the ultimate concern. This relationship between pharmaceutical companies and

physicians can only be deemed appropriate if it means that patients will ultimately benefit. If the medical gain for patients is minimal compared to the costs, the relationship should be called into question and reforms should be enacted or a governing body should be put into place to reduce the influence of these companies upon physicians and return trust to the relationship between physicians and patients. Currently, it seems as though the costs drug companies incur by advertising to physicians are too high. Though patients benefit through greater knowledge of drugs and treatments by their physicians, they seem to be paying too much for this knowledge. Pharmaceutical companies can educate their physicians in a more cost-effective way (to start, by holding

conferences in less tropical locations) and allow these lower costs to translate to lower drug costs. Some major changes to the rights of drug companies in the advertising sector should be made or they can remain as they are while patients of physicians who accept gifts and attend conferences sponsored by drug companies should be made aware of their doctors' practices. This will lead to a stronger bond between patient and physician and will probably weaken the intimate bond between physicians and pharmaceutical companies (a bond that seems to show signs of being too intimate). In the end, the patient can only benefit.

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The Roots of Hepatitis C in Egypt

Maryam Sultan

In the last decade, hepatitis C has been declared a global health problem by the World Health Organization. While the virus affects only approximately 3 percent of people worldwide, the dilemma of hepatitis C in Egypt is far more widespread and urgent (Mezban & Wakil 1). Egypt has, by far, the world's highest rate of infection with the deadly hepatitis C virus, with statistics of infection within the population soaring at approximately 13 percent (Mohamed 46). Unlike the more commonly-conceived of plagues, Egypt's hepatitis C epidemic is a direct result of mankind's handiwork. In fact, it may well turn out to be the largest medically-caused infectious epidemic in history.

Over the course of 2.5 decades—the 1960s through the mid-80s—hepatitis C was spread unintentionally throughout Egypt's Nile valley by rural health officials giving injections in an attempt to fight another scourge, the parasitic disease schistosomiasis. Schistosomiasis, also known as bilharzia, is a serious infection of the urinary and intestinal tracts caused by tiny flatworms whose larvae are carried by snails living in stagnant water in the tropics. (Mezban & Wakil 1)

From the 1960s through the early 1980s, Egyptian teams moved through villages surrounding the Nile River, seeking to treat people infected by the worms. Those infected with schistosomiasis were administered shots

of tartar emetic: up to 16 injections over three months were required to kill the parasites.

The presence of hepatitis C in the blood of some of these patients was unknown to health workers and records of the campaign indicate that, due to time restraints and limited resources, needles were rarely sterilized sufficiently to destroy a virus like hepatitis C. The high number of injections administered, coupled with the inadequate sterilization of reusable glass syringes, lend credence to the idea of placing blame for this huge outbreak on the anti-schistosomiasis campaign. By correlating regional rates of hepatitis C infection with historical accounts of the anti-schistosomiasis campaigns, Egyptian Health Ministry and World Health Organization scientists found the highest rates of hepatitis C infection in Egyptian regions where the injections were given for the longest time. (Mohamed 39)

Infection by the hepatitis C virus can lead to serious liver diseases, and the population infected decades ago has since spread the virus throughout the country. While administration of anti-schistosomiasis injections ended long ago in Egypt's Nile delta, the pool of carriers of the hepatitis C virus has continued to grow, leading to rising rates of cirrhosis and liver cancer. The prevalence of hepatitis C in people under the age of 20 in Egypt is approximately 5-8 percent, demonstrating the continued presence

of significant hepatitis C transmission in modern-day Egypt.

It was in 1982 that the arrival of an effective new drug, praziquantel, enabled health officials to stop giving shots against schistosomiasis in the Nile delta. Nonetheless, hepatitis C infection rates may be tracked smoothly down the Nile. The current hepatitis C infection rate among Egyptians 10 to 50 years old, and residing near the Nile River, is 19.4 percent in southern Egypt, 26.5 percent in central Egypt and 28.4 percent in northern Egypt. In the metropolis of Cairo, where one would expect high rates of a disease spread commonly by IV drug use and prostitution in much of the world, only 8.2 percent of the population show signs of infection, lending further credit to the concept of the spread of the virus by ant-schistosomiasis injections. (Mohamed 51)

The hepatitis C epidemic in Egypt is particularly poignant in that it was the unintended consequence of a government effort to help farmers and peasants. Under the

ambitious leadership of Gamal Abdal Nasser and subsequent governments, Egypt battled schistosomiasis with more energy than any other third world country, where neglect of the countryside was accepted. Egypt is currently in need of additional training, funding, and research in order to combat the hepatitis C epidemic -- innovations that are evidently necessary in the nation due to the continued infection of the Egyptian population by hepatitis C.

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Poverty as the World's Greatest Epidemic: Cooperation of *Both* Industrialized and Developing Countries is Essential for Eradication

Nadia Camille

Jonathan Miller (1992) once said in *The Body in Question*, "Falling ill is not something that happens to us, it is a choice we make as a result of things happening to us." Upon initially reading the preceding quotation, I did not quite comprehend the underlying logic behind Miller's declaration, and thus, did not understand the sociopolitical view that Miller was taking on illness. However, when hearing the same application of *illness as a choice* reiterated by Carol Bellamy, UNICEF's Executive Director from 1995 to 2005, I began to share their perspective on illness. She says, "Poverty doesn't come from nowhere; war doesn't emerge from nothing; AIDS doesn't spread by choice of its own. These are our choices" (UNICEF, 2005). Thus, after incorporating Miller and Bellamy's view into the growing notion of poverty as an epidemic, I concluded the following: "Falling ill is not something that happens to us, it is a choice we make as a result of poverty happening to us. Poverty and illness are our choices." By applying this ideology of illness to explain the sudden increase of deaths that occurred under the umbrella of poverty, one can effortlessly fathom and appreciate why Nelson Mandela would make the following proclamation:

"Like slavery and apartheid, poverty is not natural. It is man-made and can be overcome and eradicated by the actions of human beings. I say to all those leaders (of the G8): do not look the other way; do not hesitate. Recognize that the world is

hungry for action, not words" (Green, 2005).

The injustice of poverty *kills* 50,000 people every day (Green, 2005). By merely focusing on the global juvenile population affected by poverty alone, UNICEF proclaimed that "29,000 children under five die each day, largely from preventable diseases" (Agence France Presse, 2004), and the United Nations Children's Fund has announced that "more than one billion children, half of the world's population of children, suffers from poverty, in addition to violent conflict and the scourge of AIDS" (Agence France Presse, 2004). Before developing this argument even further, it is best to identify the association that poverty has to disease, as well as to what Laurie Garrett (1994) refers to as "thirdworldization" in *The Coming Plague*. Such a description of this linkage is lucidly portrayed in Paul Farmer's *Pathologies of Power – Health, Human Rights, and the New War on the Poor*.

In his book, Farmer, through use of ethnography in the poorest areas of Haiti, Mexico and Russia, exposes the relationship between mortality rates and social class. He proposes that poverty is the world's greatest killer because the poor are at more risk of dying prematurely than the elite classes due to either increased exposure to pathogens, decreased access to medical services, and/or due to increased violence (Farmer 23-115). In addition, he criticizes The Declaration of Human Rights, in which he argues that this

doctrine fails to ensure everybody their human rights. Such rights, as described by Garret (1994), are also included in the Constitution of the World Health Organization's statement made on July 22, 1946:

"The States Parties to this Constitution declare, in conformity with the charter of the United Nations, that the following principles are basic to the happiness, harmonious relations and security of all peoples:

- Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity...

- Unequal development in different countries in promotion of health and control of disease, especially communicable disease, is a common danger" (Garret, 457).

According to Farmer, political systems are the ones to blame because they create social hierarchy, which ultimately creates a poverty stricken class infected with all kinds of diseases (Farmer, 23-115). As René and Jean Dubos (1992) said in *The White Plague*, "Epidemics have often been more influential than statesman and soldiers in shaping the course of political history, and diseases may also color the moods of civilizations." Farmer raises an excellent point when he questions why powerful countries, such as the United States of America, do not raise money to help such poor countries like Haiti rise out of poverty and illness, but rather, however, choose to introduce these countries to illnesses like AIDS, support the political systems in these country (or in other words, the elite class), and sometimes reach the extent of placing an embargo on these countries. Although Farmer only addresses the realm of controversy and problems that are involved in the three third world countries, or more in more politically correct terms, in "the developing world" of Haiti, Mexico and Russia, his perspective on

poverty and illness is significant in accepting *poverty as an epidemic*.

Food and water contamination, decreased access to medical treatment (immunizations, etc.) and services (insufficient amount of health care providers available), decreased accessibility of affordable drugs, and increased contact to pathogens causing parasitic, viral and bacterial diseases (including treatable/preventable diseases in industrialized nations) - are all distinct hazardous conditions that are problematic to the security of health in impoverished nations. For example, merely examining the indigent juvenile population once again, the following statistics have proven that more than half the children in the developing world are severely deprived of one or more of the goods and services essential to childhood: 640 million do not have adequate shelter, 500 million are deprived of sanitation, 400 million do not have safe water, 300 million lack full access to information (TV, radio or newspapers), 270 million do not have access to health care services, 140 million are not educated, and 90 million children are severely food deprived (UNICEF 2005). Instead of targeting and removing poverty from the developing world, industrialized nations, or "donor nations" (as commonly referred to as when discussing monetary issues), are not displaying enough motivation or effort in eradicating poverty and transforming it into an epidemic of the past, thus making poverty *history*. As Rudo Kwaramba of World Vision, part of the Make Poverty History coalition, says, "We have it in our power to consign this scourge to the past and help lift the millions of people out of the misery of poverty" (Green 2005). Without assisting the poor, especially the children sector, we will not be able to remove the economic instability that is destroying us internationally. As Bellamy (2005) says, "If we fail to secure childhood, we will fail to reach our larger global goals for human rights

and economic development. As children go, so go nations. It's that simple."

The failure of governments in industrialized nations to carry out human rights and economic and medical reforms is rapidly revealing itself as our society begins to ponder questions such as: "Why is poverty still a world issue when there are such rich, developed countries, like the United States and Britain, which can help eliminate poverty from the face of this earth?" and "Why are countries still suffering from treatable and preventable diseases, such as TB?" Many political activists – health, humanitarian and debt activists – are challenging the leaders of the world's wealthiest countries – Britain's Tony Blair, Canada's Paul Martin, France's Jacques Chirac, Germany's Gerhard Schroeder, Italy's Silvio Berlusconi, Japan's Junichiro Koizumi, and George Bush of the United States (the G8 embassy) - to make a world difference by performing two tasks: (1) increase their support of international effort to fight global epidemics, especially AIDS, malaria, and tuberculosis (the top three deadliest epidemics that kill about six million people a year) and (2) agreeing to "100% cancellation of debt claims without harmful conditions for impoverished countries in Africa and throughout the global South" (OneWorld US, 2005). In 2004, according to the report, *Paying the Price*, wealthy countries' aid budgets are half what they were in 1960 and poor countries are paying back \$100 million a day in debt repayments (Green and Oxfam, 2004). Jeremy Hobbs, Oxfam's Executive Director, says, "The world has never been wealthier, yet rich nations are giving less and less. Across the globe, millions of people are being denied the most basic human needs – clean water, food, health care and education. People are dying while leaders delay debt relief and aid" (Green and Oxfam, 2004).

Indeed, these debts are problematic because they force many African, Asian, and Latin American countries to spend more on debt repayments each year than they can expend on health care, education, or fighting AIDS (OneWorld US, 2005). Not allowing some of this debt to trickle back into the economic systems of developing countries will render the members of the developing world more susceptible to diseases. Without these debt repayments, the developing nations will not have enough capital to ensure that their health care and the environment it is situated in are suitable enough to assist their patients in their resistance to distinct epidemics. Suitable health care equates to the accessibility to a substantial amount of experienced physicians, to reliable, cost-effective and affordable inoculation and drug treatments, to comprehensive science-based prevention, and to effective education. Donors have pledged \$6 billion to fund approximately 300 projects in 180 countries, but the Global Fund needs one third as much again to meet its current commitments (OneWorld, 2005). In actuality, only 40 % of the money served as aid is distributed to the poorest countries, and many times this aid is delayed in reaching these countries (Green and Oxfam, 2004). The absence of money donated to reform impoverished nations will only lead to a massive death sentence for many poor individuals. Permitting the establishment of poverty in a nation where disease and food and shelter insecurity are already prevalent, will only increase the reversible vicious cycle of poverty causing food and shelter insecurity, which then creates an ideal milieu where pathogens can breed and easily infect. Take HIV for instance. Stuart Gillespie, an IFPRI researcher, says, "Malnutrition and food insecurity heightens susceptibility to HIV exposure and infections, while AIDS in turn exacerbates hunger and malnutrition" (Aslam, 2005). How does a disease exacerbate poverty in developing nations? Simple. Due

to frequent deaths and a decrease in population size, disease reduces labor power, which makes it difficult for adults to provide food and shelter for their families. The IFPRI says, “Beyond the death toll, labor productivity decreases, crucial assets such as land are eroded and the transfer of knowledge from one generation to another is blocked” (Aslam, 2005).

Thus, donor nations are hesitant in providing foreign aid because they fear economic instability within each respective country; however, they do not realize that allowing poverty to entwine with “thirdworldization” will ultimately affect their economy, as well. When travelers return to an industrialized nation from vacationing in a developing country, there is a high risk that they may have transported foreign pathogens. According to Reuters Health (2001), 45% of international travelers will experience some health problem and 8% will be sick enough to need medical help, and as a result, physicians in Western countries are now seeing infectious diseases never before encountered. When vacationing in the developing world, especially in “high-risk destinations” such as developing countries of Latin America, Africa, the Middle East and Asia, a traveler may get Traveler’s diarrhea, or TD, from ingesting contaminated food, milk or water, an infection from drinking or using contaminated water, and/or infections that are transmitted from person-to-person and by insects (Reuters Health, 2001). The old adage, “If you can’t cook it, boil it, or peel it, then forget it!” should be taken into consideration when traveling to developing nations. Some common vector-borne diseases that traveler’s encounter are the following: Malaria (infects 10,000 to 30,000 travelers annually), Yellow fever, Dengue fever, Leishmaniasis, Chagas’ disease, Plague, Encephalitis, African sleeping sickness; and some additional common infectious diseases are the following: Cholera, Typhoid fever, Parathyroid fever, Hepatitis

A/B, Poliomyelitis, Leptospirosis, TB, Rabies, and Schistosomiasis (Reuters Health, 2001). Now, what will happen once these infected individuals reach industrialized nations? A pandemic. Illnesses, that are common to certain developing nations, will become increasingly apparent in industrialized nations if the latter do not find a way to resolve the poverty epidemic that is fueling the rise and spread of diseases. The less financial aid that is received by the developing world, the more exposure international travelers will have to pathogens, and then, the vicious cycle repeats. However, instead of recognizing this global threat, aid-donor countries utilize their economic power to politicize poverty. “Aid is viewed increasingly as a means of promoting and safeguarding the donors’ own interests, particularly their security, rather than addressing the real needs of poor people. Aid, in other words, is being co-opted to serve in the global ‘War on Terror’ (“The Politics of Poverty”, 2005).

Donor nations often provide financial assistance to developing countries in order to secure their influence, trade or strategic resources in that country. However, when a rising toll of aid workers are murdered due to a war, many aid programs are either abandoned or are only continued in nations that are in favor of the industrialist nations. In fact, these nations are attempting to persuade the Organization for Economic Cooperation and Development to include terrorism prevention as a basis on which countries to allocate aid (“The Politics of Poverty”, 2005). However, in changing these rules, there is a risk of increased terrorism as a response to the unjust allocation of aid, as well as a risk that terminating poverty will refrain from being the aid’s primary goal. For example, at only 0.14% of national income, the US spending on foreign aid in 2003 was one-tenth of what it spent on Iraq (Green and Oxfam, 2004). If

more money is used for structural violence and warfare, less money is being utilized to eradicate poverty as an epidemic.

So, then what is a resolution for removing poverty as an epidemic in the emerging and developing world? One solution, as devised by Michael Csaszar and Bhavya Lal (2004), is to use foreign aid towards providing such countries with “in-country research capabilities to understand indigenous conditions and respond to health crises.”

“Efforts of donor countries to improve health outcomes in emerging and developing countries will rely heavily on the ability of researchers in the industrialized world to identify local, regional, and national needs and to devise strategic plans for implementations” (Csaszar and Bhavya, 2004).

In order to address the public health challenges faster and more cost-effectively, it is better for researchers in the industrialized world to cooperate and work together with their counterparts in the developing world because “diseases manifest themselves differently in different countries, and their cultural contexts are best understood in the countries themselves” (Csaszar and Bhavya, 2004). For example, it is wiser to focus research on the sex trade to combat the spread of HIV/AIDS in Thailand, but, on the other hand, it is better to focus on intravenous drug use to combat the same disease in Russia (Csaszar and Bhavya, 2004). Only the researchers residing in each respective developing nation would know which activity to target in order to fight an epidemic. In addition, Csaszar and Bhavya (2004) have also proposed that a portion of the aid should also be used to provide healthcare workers who are culturally and technically competent, as well more clinics, laboratories, warehouses and prevention programs. In addition to Csaszar and Bhavya, the International Center for Equal Healthcare Access is leveraging Western physicians and nurses who volunteer to transfer their

expertise on HIV care and infectious diseases to clinics in resource-poor settings, which enable developing countries to fight epidemics from within (ICEHA, 2005). The plans described above target poverty as an epidemic because they are useful in reforming impoverished nations to the extent where disease would remain under control and surveillance by industrialized nations. Although, in these plans, the developing world would not directly receive financial support to eradicate poverty as an epidemic, they would receive the necessary medical and international attention needed to eliminate the effects of poverty in these nations. On the other hand, The Global Call to Action Against Poverty, a world-wide alliance, approaches the problem of poverty as an epidemic by demanding our international leaders to achieve trade justice, drop debt, and increase and improve aid (Oxfam, 2005). Wearing a White Band is a symbol of support for this campaign and it marks one’s participation in this global movement.

There is a misconception that available foreign aid should immediately target HIV/AIDS, malaria, and TB; however, poverty has proven to be an even greater epidemic, which places researchers in need of more funds in order to set up the necessary surveillance and medical programs to eradicate it. The richest countries (Aneki, 2005), such as Luxembourg, Norway, United States, San Marino, and Switzerland (in descending order) should utilize their wealth in order to take global action against poverty and the epidemics it nurtures. The continent of Africa should take priority in the distribution of foreign aid because it possesses the poorest countries in the world (Aneki, 2005), such as East Timor, Somalia, Sierra Leone, Malawi, and Tanzania (in descending order). What both industrialized and developing nations need to understand is that poverty is similar to AIDS in that they both render human individuals more susceptible to

additional diseases and epidemics. The same effort that is put into eradicating AIDS should be transferred into fighting poverty as well. Hopefully, every individual, whether residing in a donor or third world country, will be wearing a white band in the near future.

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Indian Healthcare

Robert Parisien

In the global marketplace, India and China continue to battle for the highest annual growth rate of all developing nations. Over the last three years India's GDP has grown at an average annual rate of 8% with outsourcing as one of the major contributing factors. In the 1990's, more and more American IT companies began flooding India with new capital, job opportunities, state of the art facilities, and a much needed hope. Search IBM, Microsoft, American Express or any other major US multi-national and you will find that they all boast at least one office and outsourcing center in India. This outsourcing trend, which continues to expand into other areas such as industrial manufacturing (9.8% growth during Q1 '06-'07), has been great for the Indian economy and a major reason why India is experiencing such tremendous growth. The government has increased privatization across industries and has reformed policies on foreign direct investment (FDI), allowing for increased opportunities. Both the US and India continue to prosper from this extraordinary relationship, which is vital for India's development during this very important time. The relatively cheap manufacturing costs and efficiency realized through outsourcing to India has kept US consumer prices in check while simultaneously enabling US corporations to experience higher growth. On the other side, by increasing outsourcing and job opportunities in India, the US has been a major contributor to the recent formation of India's growing middle class. The average

annual income in India continues to increase rapidly as does the housing market, fueled by an increase in consumer spending. Indian education is now seen in a more favorable light by the international community with great respect being given to the Indian Institute of Technology, the Indian Institute of Management, and the Indian School of Business to name a few. However, despite this tremendous growth, the Indian healthcare industry has taken a backseat with public spending efforts accounting for as little as 0.9% of GDP in 1999.

The state, central and local governments have not properly allocated sufficient resources to keep up with India's massive population growth which now exceeds 1 billion people, creating an ever increasing demand for proper healthcare or for any healthcare for much of India's rural poor. In the early 1990's, when India's public healthcare spending accounted for 1.3% of GDP, the government's strategy and subsequent system for the allocation of funds were highly inefficient. In 1991, Uttar Pradesh, with a population of more than 139 million had 735 hospitals while Kerala, with a population of 29 million, had 2,053 hospitals. In other words, Kerala had almost 3 times as many hospitals while occupying one seventh the land area of Uttar Pradesh. This inefficiency is largely due to the government's policy of overseeing healthcare development and the operation of rural and urban health centers. The Indian constitution charges the states with "the raising of the level of nutrition

and the standard of living of its people and the improvement of public health.(cite source, or amendment, etc)” Clearly, the rate in which this is happening is far from satisfactory.

When I was living and working in New Delhi, I experienced the Indian healthcare system from a personal perspective as a patient and from a business perspective as an employee of the company who owned and operated a major hospital there. I also shared close relations with the family who managed and originally founded the hospital, as I was welcomed into their care during the entirety of my stay in India. So, needless to say, I received the all-star treatment and attention when care was needed. However, in one particular situation, my blood needed to be drawn so they could run some tests. I went to the hospital and witnessed a less than clean hospital lobby that was severely over-crowded with patients waiting for care. It was very clear that the amount of care available was grossly out of line with the amount of care needed. Now, this same hospital that boasted some of the best cardiovascular surgeons in the world escorted me into a filthy room about 6 feet x 6 feet where I joined a man who was either sleeping or unconscious on a stretcher, another man coughing uncontrollably in the corner and a woman waiting patiently for something, anything. This, apparently, was where they intended to draw a sample of my blood. Being accustomed to the level of cleanliness and privacy offered in the US, I immediately asked to be placed in another room where my blood could be drawn properly. I was then escorted to an office filled with desks, chairs, computers, copy machines and other essentials commonly found in an office space. I again was told that this would be the place where my blood would be drawn. At this point I wasn't sure what to do. I obviously had been expecting to be placed into a clean, sanitary room where a medical professional would carefully draw a sample of blood. In an effort to get things

done, I agreed to have my blood drawn in the office where two nurses proceeded to laugh and giggle, while failing miserably to find my vein with the needle. Neither of them was wearing gloves. I understand the learning process that is necessary when mastering the art of finding a vein but, I have never witnessed such a lack of professionalism while also failing to follow what should be the common practice of wearing protective gloves. Remember, I was a close friend of the founders and operators of this very hospital – I can only imagine what others went through.

This experience enabled me to fully realize, first hand, the neglect of the Indian healthcare system with my experience taking place in one of the most respected hospital centers in the country's capital, New Delhi. This illustrates, that despite the record growth and development, India is still a third world country in many ways with over 5 million people suffering from HIV/AIDS and many more losing their lives due to preventable diseases such as Tuberculosis, Malaria and even Leprosy. This is completely unacceptable for a country that realized 8.4% growth in '05-'06. In any developed or developing nation, healthcare should be given the utmost attention and should constantly be evaluated and re-evaluated.

The time has come for private companies and individuals to take control of urban hospitals and rural health clinics. This recent push in private investment has improved the state of healthcare as expected with major Indian corporations such as Tata and The Apollo Group leading the way, however, the overall pace of development is still much too slow.

The US has now committed added focus and resources to the Indian healthcare industry demonstrating our natural progression of partnership with India. The US, along with the rest of the world, will undoubtedly benefit from a healthy and thriving Indian population. This crucial push

is being spearheaded by many prominent Americans who have close ties with India along with many Indian-Americans who have decided to give back to their native country. Rajat Gupta, former Managing Director of McKinsey & Co. and Calcutta native, has joined forces with Bill Gates and former President Bill Clinton to launch a highly visible and comprehensive healthcare, education and development initiative to “accelerate social and economic change in India.(cite)” Similar US-Indian partnerships, with emphasis on the health sector, should be created by other Indian-Americans who now total more than 2 million in the US today and account for the largest minority in the US education system. India is in need of and will benefit greatly from shared information regarding medical management systems, health technology, disease surveillance and response systems – areas in which the US has long demonstrated its expertise and experience.

Investments must also continue to be made in medical infrastructure in the heart of rural India as well as the major city centers to improve the quality of life throughout every corner of the country. As India continues to grow and flourish, the rising rural poor will be expected to play a more active and visible role in the country’s developing future. Only then, with an increased and continued US-Indian health partnership, will India be given the opportunity to reach its fullest potential.



The U.S. Physician Shortage

John A. Vullo

Introduction

Recent evidence supports a conclusion that there is, and will continue to be, a physician shortage in the United States, despite previous predictions that a surplus of physicians would be the issue. In fact, “both the American Medical Association (AMA) and the Association of American Medical Colleges (AAMC) have taken the position that the previously feared (physician) surpluses are unlikely, and the Council on Graduate Medical Education (COGME) has reversed its policy entirely, declaring that shortages are the issue”¹.

Background

The U.S. congress controls the supply of physicians by the amount of federal funding it provides for medical residencies; this figure has been capped since 1997 in an effort to control Medicare costs (the primary federal agency that controls the supply of physicians). Therefore, physician supply has not increased at a rate consistent with overall health care spending or the population. The opponents of increasing the physician supply believe the evidence acknowledges shortages in geographic regions and certain specialties. Therefore, the opponents do not see any reason to raise costs unnecessarily.

Economics modeling has proven the most viable means for predicting the market’s desire for physician services. The approach of Richard Cooper, director of the Health Policy

Institute at the Medical College of Wisconsin, provides the prevailing economic argument. He has proposed many economic models to prove the existence of the shortage and is a prominent figure in the academic healthcare arena⁵. His approach takes into account historical relationships between economic expansion, population growth, the work effort of physicians, and services provided by non-physician clinicians in projecting future demand⁵. As the most objective tool for determining physician supply and demand in the future, Cooper’s method best forecasts the physician shortage and elucidates methods for alleviating it.

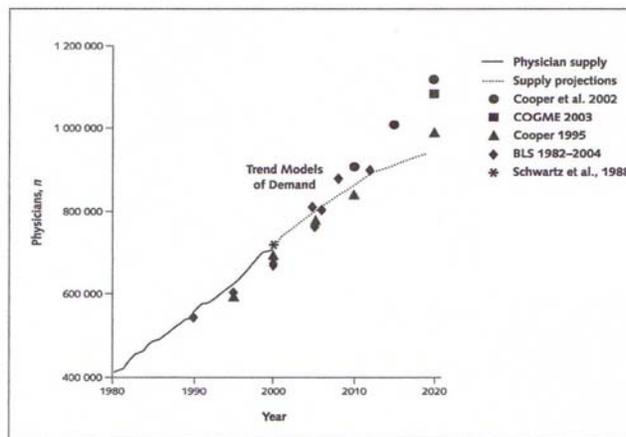
Cooper points to economic reasons for the physician deficit. The GDP of the U.S. has increased at a rate of about 1.0% per year, while health care spending has increased 1.5% per year, but physician supply has only increased 0.75% per year¹. The supply of physicians has been growing more slowly than the economy has been expanding and half as slowly as health care spending.

Figure 1—Disparities in Physician Supply vs. Health Care

GDP	Health Care Spending	Physician Supply
1.00%	1.50%	0.75%

Motivation

Figure 2. Physician supply and demand projections.



purchase future health through current actions, the health care system can prevent future problems and even greater physician shortages, at a lower cost to society, by acting now.

Predicting the Shortfall

The physician shortage in the United States is a reality. According to Cooper, “the country needs to train 3,000 to 10,000 more physicians a year — up from the current 25,000 — to meet the growing medical needs of an aging, wealthy nation. Because it takes 10 years to train a doctor, the nation will have a shortage of 85,000 to 200,000 doctors in 2020 unless action is taken soon.”¹ The ten years needed to train more doctors will coincide with the initial retirements of the dreaded “baby boomer” generation. This mass retirement will include any baby boom physicians, further exacerbating the shortage.

The year 2000 is an important year in the context of this discussion on the physician shortage because it was supposed to have been the year (based on past government predictions) in which a vast surplus of physicians, particularly specialists, would exist. Instead, we are beginning to see shortages of physicians, mainly specialists. In the year 2000, the physician workforce was not experiencing an oversupply, nor was it imminent. In its place, we are starting to witness shortages of physicians in geographical areas and in several specialties (Figure 2). It is important to realize that, although there were fewer physicians per thousand people in 1970 (Figure 2), the technological advancements and innovations of healthcare did not require the number of M.D.’s that are demanded today. Figure 3 demonstrates that in years past, despite a lower number of total physicians (y-axis), demand was met by supply. The line on the

This research is extremely significant on the greatest scale; the implications of this shortage may confer increased costs and a depreciation of the standard of living in this country as a result of inefficient medical practice stemming from the greater problem of an insufficient supply of doctors. The trade-offs for increasing physician supply are also volatile issues and any modifications may require a great deal of political change.

Mahlon Stewart⁶ uses this trade-off – arbitrage – in much the same way that it can be used with respect to the issue of the physician shortage. His essay develops the methods of preventative care in curing society’s current “full court press” with respect to invasive surgeries. Stewart believes that individuals can choose to make themselves healthier and less dependent on science and technology if they only realized the consequences of their choice to live an unhealthy life in the present. This is the arbitrage that Stewart is referring in his essay:

“We have ignored the fact that prevention and the daily practice of healthy living offer us an exceptional value: the value of purchasing our future health at a discount. The arbitrage in building healthy individuals has a higher pay-off”⁶. Just as individuals can



Figure 3 - Supply and Demand Projections¹

graph represents physician supply and it is projected beyond the year 2000. Models that predict the demand for physicians are represented by the various geometric points along the graph. The relationship of both supply and predicted demand are linear, but around the year 2008, supply begins to fall, while demand continues on its linear, projected path. Demand rises as the services physicians are capable of supplying increases. These services are directly related to the advances in health care and medical technology. With continual improvements in health care, more and more doctors are required, and for this reason, the decline in doctors after the year 2000 (Figure 2) will be detrimental.

To complicate the shortage, a major problem that the profession faces is that the quality of care being offered will decline as practicing physicians are inefficiently distributed throughout the country; doctors are in excess in large cities, but are lacking in smaller, middle-America communities¹. Massachusetts and New York both enjoy about 4 doctors per 1,000 people, whereas Arkansas, Iowa, Alaska, Wyoming, Nevada, Mississippi, Oklahoma, and Idaho have fewer than 2 physicians per thousand people¹.

Why Don't We Realize the Shortages Yet?

Over the past 20 years, the number of non-physician clinicians (NPC's) has increased at an unprecedented rate¹. With more nurses and physician's assistants available to care for patients, doctor's can better allocate their time. Therefore, although

a shortage exists, these NPC's maintain consistency in the level of patient care.

Also, all of the predictions and facts presented thus far (excluding the number of physicians per 1,000 people per state) pertain only to doctors with the M.D. degree. Although they maintain a much smaller slice of the physician supply, doctors of osteopathic medicine (D.O.) also contribute to the health

care system. The mechanisms that control M.D. supply do not apply to D.O. supply. As a result,

the number of D.O.'s has steadily increased over the past 25 years, as have the percentage of practicing physicians who are D.O.'s¹.

Methods for Improvement

The most telling evidence for the future dearth of trained doctors is the fact that within a decade, the baby boom doctors licensed in the 60's – 80's will retire in astounding numbers that will "outstrip the 25,000 new doctors produced every year," according to Cooper¹. Although the supply of physicians has been capped by Congressional spending², increasing the number of accredited US medical schools could prove a viable option for quelling the shortage. The Association of American Medical Colleges has reversed its view of the physician supply being in excess in 2002¹, and in February of 2005 it recommended increasing the number of US medical students by 15%. There has

Measure	Weight	Who's #1	Canada	U.S.	France	U.K.
Health: level (DALE)	0.25	Japan	12	24	3	14
Health: distribution	0.25	Chile	18	32	12	2
Responsiveness: level	0.125	U.S.	7-8	1	16-17	26-27
Responsiveness: distribution	0.125	United Arab Emirates	3-38	3-38	3-38	3-38
Fairness in financial contribution	0.25	Colombia	17-19	54-55	26-29	8-11
Overall goal attainment	1	Japan	7	15	6	9
Health expenditure per capita in international dollars	NA	U.S.	10	1	4	26
Performance: on level of health	NA	Oman	35	72	4	24
Performance: overall health-system performance	NA	France	30	37	1	18

Source: World Health Organization, *The World Health Report 2000 Health Systems: Improving Performance* (Geneva, Switzerland: World Health Organization, 2003).

Figure 4 – WHO Rankings⁷

only been one new medical school since 1982 (Florida State University College of Medicine)².

Although the United States offers the highest *quality* of care in the world, the U.S. system still has its faults. A recent World Health Organization³ survey ranked the United States 37th in overall health system performance – sandwiched between Costa Rica and Slovenia. According to Landers, “this dismal showing occurred despite the fact that the United States spends more on health care -- 13.7% of its gross domestic product – than any other of the 191 WHO nations”³. The U.S. fails to reach the top of the overall rankings primarily because a lot of weight is given to the fairness of medical insurance (Figure 3 – “Fairness in Financial contribution”); nearly 44 million Americans³ do not have any form of health insurance. Also, the distinction between general/family practitioners and specialists is not clearly defined in most of the sources that discuss physician supply and demand. A discrepancy exists between the shortages in each category. Cooper and the COGME have even gone as far as saying that America’s health care system may be too dependent on specialists, accounting for the U.S.’s low placement on the World Health Organization’s rankings of world health care systems (in addition to other variables already discussed).

In the fall of 2004, Cooper noted methods being undertaken by various English-speaking countries facing similar shortages: Similar problems exist in Canada, the United Kingdom, Australia, and New Zealand. However, unlike the United States, these other countries are actively addressing their problems. The government in the United Kingdom has promised 10,000 additional doctors within the next 5 years, a 10% increment, and set a goal of 65,000 more by 2020. It plans to accomplish this partially through increases in training capacity but principally by recruitment from other

countries, an effort that promises to offer stiff competition for English-speaking physicians.¹

The United States must look for ways to expand the supply of doctors, as other countries have, if a long-term deficit is to be avoided. These countries mentioned have decided that the most effective way for them to increase the number of physicians in the short-run is to attract more foreign medical students¹.

Conclusions – Judging the Effectiveness of Various Counter-Active Methods

I think it will be difficult to propose a truly viable method to increase physician supply because of the numerous measures that would be needed to support such action. The U.K. and Canada have found ways to recruit more international medical graduates, but this will only prove useful in the United States if the existing caps on residency program funding are lifted. This goal will become more and more difficult to achieve as the government must address more current issues such as social security and general health care funding. As a result, the physician issue might very well be put on the proverbial backburner, when, in fact, it may indeed remedy the increasing cost of health care that is afflicting millions, including the government. The government subsidizes many procedures through insurance and other methods (Medicare and Medicaid); an increase in health care costs for us also means an increase in costs for the government. But if the government were to expand the supply of physicians, especially non-specialists, then it would help to decrease the demand for expensive procedures, by increasing the preventative care measures employed by general practitioners⁴. Here is where the government must decide whether it is worth it to make the necessary changes in this field today to prevent problems tomorrow, or to act on other issues. In either case, the

government would be justified in choosing the plan of action in which the greater benefit to society would be produced. But the policy makers do not have the luxury of knowing which will produce the more desired outcome 20 years into the future; they can only know for sure that they must decide now, in order to make any differences later.

Actually realizing this shift towards the general fields will be difficult: the two most influential reasons a medical student has for picking his/her residency is the compensation and prestige of the profession. In America, both of those desires are truly satisfied by choosing a competitive specialty over general practice. However, in comparisons of health care systems, the United States spends more than any other country and receives healthcare effectiveness ratings behind those of many European systems and Canada, all while the numbers of general physicians has declined substantially⁷. The U.S. system needs to change and provide more incentive for medical students to work in the general fields. Further restricting the working hours of medical residencies (especially in internal medicine – the most general specialty) may increase the favorability of certain medical professions to medical students.

Cooper states, “It seems prudent to assume that regional variation in health care will exist as long as differences in economic status persist and that the demand for physicians will vary accordingly”¹. The geographic shortages seen throughout the United States are the most easily remedied on a state-to-state basis. With the substantial variation of physicians-to-population ratios, states that lag behind national averages must take their own action⁸. Florida has already started a new medical school at FSU and Texas has similar goals for its own². However, “any large initiatives at the state level to increase the capacity for training medical students are unlikely to occur until

state governments recover from the fiscal troubles that have overtaken them in the past four years”⁸. Therefore, it will take a good deal of time before individual states begin to address the shortages. In any case, states should follow the example of Florida and press for an increase in capacity of the existing schools or for the creation of new medical schools in order to control more severe, future shortages.

It is currently debated whether or not to expand the role of NPC’s with the hopes of maintaining high levels of care. However, the limiting factor is whether or not NPC’s should be allowed to perform duties that are more of a divergence from their training than an extension. Ultimately, these individuals are not trained to expand their roles to be able to substitute for doctors because they were specifically trained to be complementary to doctors as a sub-level of health care provider in the greater health care system. Efforts to expand the number of physicians are the only method that will ensure that NPC’s do not stretch their “scope of practice to the margins of safety”¹.

In essence, every decision is the result of scarcity in time and money. (If neither were a scarce resource, then no decision would need to be made.) In the case of the arbitrage within the health care system, the resources that must be exchanged (allocated) are both time, in the form of the delay in training doctors, and money, to fund an expansion of the medical sector. The only problem in funding the future is that we must borrow from the present. As a result, it does not *seem* a worthy proposition to spend on the future when other issues may seem more pertinent and when money is itself a scarce and limiting resource. It takes nearly ten years to train a physician; the U.S. needs to decide how it will save health care, right now. At the very least, efforts should be made to mimic other countries’ demand for foreign physicians, but, “ultimately, there is no long-term alternative

to expanding the output from U.S. medical schools”¹.

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Health Care Worker Hysteria

Lindsay Katona

“While health care systems can differ widely from country to country, there is one thing they are finding they have in common—they are sharing the same hiring pool, and that pool is getting smaller.”

- Stephen Spotswood

Introduction

Article Twelve of the International Covenant on Civil and Political Rights, originating from the United Nations Office of the High Commissioner for Human Rights, states that “Everyone shall be free to leave any country, including his own.”ⁱ While this statement is hard to disagree with, there is a fundamental conflict at stake when one considers the effects of migration regarding health care workers. All health care delivery, anywhere in the world, requires health care workers. Countries with the lowest relative needs tend to have the highest numbers of health care workers, as compared to countries with the greatest burden of disease in Africa, Asia, and Latin America. According to Leonard Rubenstein, executive director of the non-governmental organization (NGO) Physicians for Human Rights, 57 countries, out of a total of 192, are experiencing health

care worker shortages, 36 of which are in Sub-Saharan Africa.ⁱⁱ

In terms of demographics, Africa is home to 14% of the world’s people, accounts for 25% of the world’s disease, and yet has only 1.3% of the world’s health care workers.ⁱⁱⁱ Comparatively, the Americas have 14% of the world’s population, 10% of world’s disease, and 37% of the world’s health care workers.^{iv} It is clear from these numbers how dire the situation is when it comes to the health workforce in Africa. The demand is high, the supply is low, and unfortunately, these trends are not reversing. In August 2002, the health minister of South Africa, Dr. Manto Tshabalala-Msimany, said, “If there is a single major threat to our overall health effort, it is the continued outward migration of key health professionals, particularly nurses.”^v If the health care worker crisis is so drastically affecting South Africa, which is by far the continent’s wealthiest country, both in GDP per capita and in total GDP, then one can only imagine the effects on some of the poorest countries on the continent.

On the continent of Africa in particular, the health care worker crisis has been compounded by the HIV/AIDS epidemic. Between 1997 and 2001, South Africa lost 14% of its health-care professionals to HIV-related diseases.^{vi} HIV/AIDS not only increases caseloads of already overwhelmed health care workers, but also affects the health care workers themselves. One prediction by Dr. Mohga Kamal-Yanni of Oxfam International is that “Africa is likely to lose 20% of its health

workers over the coming few years” to AIDS.^{vii}

In addition to being personally affected by the epidemic, African health care workers face the challenges of prevention, voluntary counseling and testing (VCT) and treatment, which are standard provisions of HIV/AIDS care. Additionally, international initiatives to fight AIDS that have been introduced by governments, such as the United States’ President’s Emergency Plan for AIDS Relief (PEPFAR), or by non-governmental organizations, such as Doctors without Borders and Partners in Health, cannot succeed without an adequate supply of health care workers to implement them. The shortage of essential medicines, supplies and equipment is one major obstacle to providing effective delivery of care, not to mention a major contributor to poor health worker morale.^{viii}

Part I: The United States as a Catalyst

One cannot talk about the brain drain in Africa without addressing the state of health care workers in the United States. Many African health care workers are being recruited to work in the United States because of a growing shortage of health professionals. Both public and private health care systems are facing a widening gap between the number of health care positions they need to fill and people available to fill these positions. Offering more money and benefits is not an all-encompassing solution to this crisis.^{ix}

Many factors have contributed to the US health worker shortage. For one, enrollment in nursing schools is not growing fast enough to meet the projected demand for nurses. Nursing schools cannot meet the demand because a shortage of nursing faculty limits nursing program enrollment. According to Dr. Linda Aiken, director of the Center for Health Outcomes and Policy Research at the University of Pennsylvania, about 150,000 applicants were turned away from nursing

schools last year because of capacity limitations. There is less incentive for nurses to go into teaching because professors of nursing earn less than practicing nurses.^x There is little incentive to change the enrollment policies of nursing schools when countries like the Philippines are breeding grounds for educating nurses and sending them to the United States.

With fewer nurses entering the profession overall, the average age of existing Registered Nurses is going up, and the nurse population is not growing fast enough to meet projected needs. As a result of demographic transition, industrialized countries such as the United States are characterized by aging populations and declining birth rates, making it difficult to replace retiring health workers and meet the demands of a longer-living and healthier elderly population. Legal mandates of specific nurse to patient ratios make it especially difficult to meet the needs of a growing population. Additionally, job burnout and dissatisfaction within the nursing profession are driving nurses away. Not only are nurses not compensated as much as they should be, but they are not highly respected in their field.

High nurse turnover and vacancy rates are affecting access to health care, and thus are urging policymakers to change legislation and urging non-governmental organizations to recruit foreign workers to fill in the gaps. What these changes are not signaling, however, is that free market capitalism may not be the ultimate solution for the health care sector. The idea of a free market is that a lack of regulation will foster competition, which will drive costs down and provide the best services to the largest amount of people. When it comes to health care, recruiters from the U.S. and the U.K. can offer African health care workers better wages, working conditions, and living conditions, in addition to the opportunity to live in another country. Given the incentives to leave, to turn down

this opportunity is almost unheard of. Since the majority of the disease burden is in countries that have a tendency to send many of their health workers abroad, we cannot afford to leave it to the free market to equilibrate the distribution of health care workers around the world. If we did, everyone would move to places where more capital and opportunity exists. Currently, 22% of physicians and 12% of nurses in the United States are foreign born, with 70% of these health professionals coming from developing countries. Linda Aiken says that, "The forecast for the number of full-time nurses that we will need exceeds what we'll have by something on the order of 800,000 nurses by the year 2020." She continues to explain that this is a result of escalating demand and diminishing supply.^{xi}

One side of the nursing shortage in the United States is that salaries are increasing because of the tight labor market. Many hospitals are offering large signing bonuses to new nurses. On the other hand, however, higher salaries have drawn health workers from other countries that would not make the same amount in their home country. One problem with permitting nurses from abroad to work in the US is that it is the most qualified foreign nurses that come to work in the United States. In Aiken's opinion, "We are not only decimating the supply in many of these countries, but their capacity to regenerate their supply." While these nurses are an asset to the US Health-care system, they are a net loss to the country that invested in their education and training (with the exception of countries like the Philippines, where nurses mass produced, specifically for export). Since the nurses that migrate come from a select group that made it through higher education in their home country, these nurses would have been the future faculty to train the next generation of workers if they had stayed. They also represent the minority of highly educated people in their respective

countries. There are far-reaching effects of the United States' power to pull qualified health professionals from already resource-deprived countries. Instead of addressing the shortage as a domestic problem, the United States has taken the liberty to import nurses, just as they would import any other good or service.^{xii}

Part II: The Policies of International Financial Institutions that Affect the Health Care Worker Crisis

International trade rules under the World Trade Organization (WTO), and policies of International Financial Institutions (IFIs) such as the International Monetary Fund (IMF) and the World Bank, have changed the nature of the health care workforce by broadening the definitions relating to international trade and influencing the way governments respond to the health care worker crisis.

International trade agreements are rules that define commercial transactions between nations. These agreements attempt to reduce barriers to trade and promote mobility of capital, goods, services and personnel. Traditionally, international trade agreements focused on goods and commodities. More recently, however, with the addition of the General Agreement on Trade in Services (GATS) during the Uruguay Round of Negotiations in 1995, the scope of these agreements has expanded to include services as well. While on one hand, trade in health services may lead to economic development and higher standards of living as a result of the opening of markets and a wider range of available goods across borders, there are many challenges that come along with the inclusion of services in WTO trade rules. While the main objective of international trade agreements is to make the world safe for trade by reducing government corruption and increasing transparency, many find the outcomes not so fruitful. Trade agreements have the potential to widen the gap between

the rich and the poor as a result of unequal distribution of increased wealth, restrict the role of government in providing services, and promote privatization of social services.^{xiii}

There are four key areas of international trade in health services:

- Cross-border supply: where the supplier of a health service in one country makes the service available to the population living in another country
- Consumption abroad: where patients travel from one country to another to obtain treatment
- Commercial presence: the provision of health services on a for-profit basis by foreign-owned health care providers or health transnational corporations
- Provision of health services by foreign people: the delivery of health services in a given country by foreign individuals or the movement and migration of health workers, e.g. physicians, nurses^{xiv}

There are notable implications of these expanding trade rules when it comes to health care workers. Health care workers have the freedom to cross borders to fill the needs of economies abroad, as long as they follow the process set forth by the accepting government, such as fulfilling visa requirements. The traditional difficulties associated with migration have been lessened by these WTO trade rules, thereby escalating the health professionals who are taking advantage of the opportunity to work abroad. The market for health professionals has been expanded to a global market, where competition for nurses and doctors is not limited to any particular area and where recruitment of health personnel who will accept lower salaries is rampant.

Aside from the effects of International Trade Rules, health sector reform under the IMF's structural adjustment programs has amplified the health care worker shortage

around the world. The IMF is the institution that enables countries to receive loans or grants from the World Bank. The IMF sets forth economic and political standards, such as limits on inflation and budget deficits, and developing countries must abide by these standards in order to get World Bank funding. In order to meet these targets, countries have to put limits on their budgets to keep spending low, thereby reducing their budgets and inflation. Limiting the budget in this way is known as implementing a budget ceiling, or a maximum amount of money that the country can spend a particular sector of the economy.^{xv} The rationale behind these policies is that high levels of domestic debt and high interest rates are what cause economic instability, and that budgetary ceilings should be a government initiated attempt to reduce debt by adopting public expenditure reforms.

The idea of budget ceilings becomes dangerous is when the practice is applied to health. Rick Rowden, a Policy Officer at ActionAID International USA, an international development organization fighting poverty worldwide, quotes, "The IMF says it's concerned about HIV/AIDS, yet the lending conditions they impose on poor countries keep public spending so low that they can't afford to hire the doctors and nurses they need."^{xvi} One of the many reasons that many countries in Africa are not able to address HIV/AIDS and other health issues because they risk exceeding budget ceilings and losing IMF approval and World Bank funding. The only way these countries would be able to expand their health workforce (aside from international aid) is to expand their budget ceiling. In many parts of Africa, budget ceilings are so low that inadequate money is spent on health care infrastructure and personnel. Many economists believe that budget ceilings are too low for poor countries to achieve economic growth. For example, the IMF sets inflation targets at 5% a year,

whereas economists believe that inflation rates between 5 and 20 % are not harmful to countries' long-term economic growth.^{xvii}

While it makes sense that the IMF would only want to lend money to countries that have the potential to be relatively stable and are working to balance their debt and inflation, they must tailor their policies to the needs of different regions and countries of the world, especially since their missions are based on lifting poor countries out of poverty. Budget ceilings can be a useful tactic in public resources management and in promoting economic growth and development, but only when the ceilings are set at achievable levels that do not infringe on vital spending in health or education.

Part III: The Health Care Brain Drain in Africa

The World Health Organization (WHO) estimates that the global shortage of more than 4 million doctors, nurses, midwives, and medical support workers is the result of decades of cost-cutting and underinvestment in health.^{xviii} Statistics show that in many sub-Saharan African countries, almost 50% of doctors migrate within the first five years of their graduation from medical school.^{xix} The fact that Africa is under-resourced is only compounded when a large percentage of the health professionals that do exist decide to emigrate. According to Dr Atta Gbary, the World Health Organization's Africa adviser on Human Resources in health, 23,000 of the best-trained medical staff leave Africa each year for the developed world. This exodus of health workers does not only result in gaps in the health care system, but it also represents an economic loss to the sending country when it comes to disease treatment. Although remittances, transfers of money by workers abroad to the home country, constitute a large portion of developing world economies, the countries are still losing their most qualified professionals in this so called

“brain drain.” The most highly educated people in an African country are the people most likely to emigrate because they tend to have access to more resources in the first place.

The United Nations estimates that the cost of training a specialist doctor in Africa to be around US \$100,000. Multiplying this by the number of doctors that leave each year translates to an annual subsidy from Africa to wealthy nations in the hundreds of millions of dollars.^{xx} What ends up happening after so many African doctors leave is that foreign doctors come to fill in the gaps. According to Paul Farmer, a medical anthropologist who founded the NGO Partners in Health, said in a speech in November 2006 that “There are more American pediatricians in places in Africa than African pediatricians.”^{xxi} Many of these doctors come with organizations such as Doctors without Borders to provide humanitarian service to low-resourced populations, or from countries like Cuba where there is an excess supply of doctors. Doctors with successful practices in the developed world or with a desire to help the dire health situation in Africa are a source of intellectual capital for African countries that are suffering from a severe lack of health professionals.

In order to more fully understand the nature of the health care worker brain drain in Africa, one must understand the push and pull factors that push workers out of their home communities and pull them to urban areas, the private sector, or more often, the developed world. Many people argue that better pay abroad lures health care workers out of Africa. Although this is true to some extent, there are many other factors that play into the decision to leave. Many health care workers are faced with poor working conditions, ill-equipped clinics (including a shortage of essential medicines), and pay so low that workers cannot support themselves and their families. There is also a strong correlation between the

loss of professionals and economic or social instability within many African countries. This trend is only amplified as specialization within the health professions increases. Angola, Congo-Brazzaville, Guinea-Bissau, Liberia, Mozambique, Rwanda, and Sierra Leone all experienced civil war in the 1990s and all lost more than 40% of their physicians by 2000. On the contrary, countries with greater political stability and economic prosperity, such as Botswana, South Africa, and pre-collapse Cote d'Ivoire, managed to keep their doctors.^{xxii} In addition, the private sector has accounted for some of the brain drain in countries like South Africa. In South Africa, where a medical education is almost fully subsidized, two thirds of physicians work in the private sector, which serves one fifth of the population. In other words, the government is paying for the education of doctors, the majority of which either migrate or work in the private sector.^{xxiii}

Recruitment is a major factor that is driving health worker emigration out of Africa. Although some countries have made efforts to tighten practices of pulling health care workers by adopting "Ethical Recruitment Codes," such as in Britain, these policies are not always effective. The policy in Britain under the National Health Service discourages the hiring of workers from sub-Saharan Africa. Last December, the code, which is voluntary, was extended to private recruiting agencies. An article published on May 28 of this year discusses how Europe is "poaching" the nursing staff of Mauritius, which is known to have an advanced education system and whose nurses are known to thrive under the demands of the European health care system. Mauritians not only fear that there will be no one left to care for their elderly population, but they are frustrated with the British recruitment agents who "very discreetly make contact with the nurses and directly negotiate the contracts."^{xxiv} While many are against the idea of recruitment, one

must also weigh the option of not allowing health professionals to leave, which can lead to poor quality of care when people are not being challenged by their work or advancing their knowledge.

Part IV: Case Studies: Kenya, Malawi

Like many other countries in Africa, the health care worker crisis in Malawi has been most severely affected by AIDS, although poverty and lack of access to education have also caused shortages. Malawi is the country with the third largest maternal mortality rate in the world, and an average life expectancy of thirty-six years. Despite such pressing health care needs, there are only one hundred doctors and two thousand nurses to serve the population of 12 million people. This equates to around 1.1 government physicians per 100,000 Malawians.^{xxv} Malawi is just one of the 31 African countries (out of 52) that falls short of the "Health for All Standard," which calls for at least one doctor per 5,000 people.^{xxvi}

In Malawi, ten people die of AIDS every hour, and one million people are infected with HIV.^{xxvii} Despite a tremendous need for care, over the last five years, Malawi has lost 53% of its health administrators, 64% of its nurses, and 85% percent of its physicians, with foreign NGO recruitment as the major source of this loss.^{xxviii} As a result, it has been estimated that 33% of healthcare posts available in Malawi are vacant, 64% of nursing posts are unfilled, and that the number of doctors practicing is only a sixth of the recommended total.^{xxix}

While many countries in Africa are suffering not only from the magnitude of the AIDS epidemic, but also a lack of political leadership in the response to AIDS, Malawi is an exception in this arena. It is difficult to criticize the Malawian government for their response to AIDS in recent years as they have made significant efforts to increase access to treatment and improve prevention across the

country. What must be noted, however, is that any attempted in Malawi to increase access to HIV testing and treatment have been hindered by a severe shortage of staff.

The vacancy rate for doctors and nurses in Malawi is so high that even when donors offer funds to pay these workers, they cannot be used because “the people are simply not there to work.”^{xxx} In addition, public sector doctors receive \$400 per month, which is not enough for them to get by and support their families. Isaac Ziba is a nurse who left Malawi in 2004 with his family for Scotland, where he got a job in the Western General Hospital’s Surgery Department. According to Ziba, his decision to leave Malawi and enter Scotland’s National Health Service was motivated by such factors as “career advancement, further training, new experiences, and better remuneration.”^{xxxi}

Kenya has a different story when it comes to health care workers. The situation in Kenya is due in large part to policies implemented by the IMF and the World Bank. These International Financial Institutions play significant roles in setting the macro-economic targets that determine national resources within Kenya.^{xxxii} They do this by putting conditions on loans that Kenya receives, which have resulted in Kenya limiting the amount of federal money that is spent on health personnel. One aspect of the public sector reforms in Kenya was the introduction of budget ceilings. This policy is to reduce the overall government expenditure in relation to Gross Domestic Product (GDP) in order to reduce the budget deficit.^{xxxiii} As a result, there are 4000 unemployed nurses in Kenya who cannot find work because the government cannot afford to hire them. Unlike many other African countries, the worker shortage in Kenya is not due to a lack of training of health professionals. Instead, the problem rests largely on the fact that the government cannot afford to pay health care workers.

As a result of these policies and a shortage of employed nurses, life expectancy in Kenya went from 57 in 1986 to 47 in 2000, and infant mortality increased from 60 per 1000 in 1993 to 78 per 1000 in 2003. Life expectancy and infant mortality rate are prime indicators of the state of a country’s health care system, and this transition in Kenya is representative of not only the health care worker crisis, but also larger structural problems that date back to structural adjustment. On March 6, 2006, Kenya’s Assistant Minister for Health, Enock Kibunguchy, told the press that Kenya urgently needs to hire 10,000 additional professionals in the public health sector, “We have to put our foot down and employ. We can tell the International Monetary Fund and the World Bank to go to hell.”^{xxxiv} Whether these policies will do good in the long run is questionable, but in the short-term they are doing the Kenyan population much harm. This calls into question why health care falls under the same rhetoric as other sectors that are influenced by IMF and World Bank policy.

Part V: Legislation and Policy

In order to address the issue of health care workers from the United States perspective, one must consider the policy options and legislation that are currently being introduced within the United States. A Senate Immigration Bill (S2611) introduced by Sam Brownback (R-KS), and passed in the Senate on May 25, 2006 sets forth less-restrictive immigration policies.^{xxxv} Brownback introduced four amendments that passed and were included in the final committee bill. Two of these amendments increase the number of visas offered for doctors and nurses who are needed in greater numbers in rural states, and two protect those seeking asylum or who are fleeing persecution. With backing from the American Hospital Association, which reported 118,000 vacancies for nurses in American Hospitals in April 2006, Brownback

doubted that the bill would greatly increase the “small number” of African nurses coming to the United States.^{xxxvi} Bruce Morrison, a lobbyist for the American Hospital Association, argues “There is no reason to cap the number of nurses coming in when there's a nationwide shortage, because you need people immediately.” What Brownback and Morrison do not consider, however, is that there is a significant number of African nurses immigrating to the United States, and there are many more Americans seeking to be nurses than there are places to educate them. The nursing school crisis, however, is not something that our policymakers are addressing, and instead they are attempting change national immigration policies.

It is interesting to recognize how the debate over health care workers has infiltrated the debate over immigration in the United States. The issues we are used to addressing when it comes to immigration are security at our borders and what to do with illegal immigrants. With the health care worker debate, the traditional immigrant debate has expanded to cater to trained health professionals from all over the world, with the ultimate goal of helping America meet America’s needs. The attitude represented by this new immigration debate is contradictory to what one might expect from conservative politicians like George Bush or Sam Brownback, who have a reputation for keeping America’s borders shut to foreigners.

The American Nurses Association (ANA) is a trade organization that represents 155,000 registered nurses in the United States. According to a New York Times article entitled, “US Plan to Lure Nurses May Hurt Poor Nations,” the ANA is concerned that Brownback’s immigration bill will lead to a flood of nurse immigrants that would not only damage the domestic workforce, but also the home countries of the immigrants.^{xxxvii} Erin McKeon, associate director for government affairs of ANA, said, “We’re disappointed that

Congress, instead of providing appropriations for domestic nursing programs, is outsourcing the education of nurses.^{xxxviii} What McKeon is referring to are the programs that the US is setting up in such countries as Poland where non-English speaking nurses are brought to learn English before they begin working in the United States. These programs are funded, in large part, by the United States.

To contrast the Brownback bill, Physicians for Human Rights has sponsored a Health Care Workers bill over the past few months that many activist organizations have been fighting to promote in Congress. A demand was made on December 1, 2006 (World AIDS Day) in Washington DC for this bill, which requires \$8 billion over five years from the United States to fund the training and retention of the African healthcare workers. The bill also calls on African countries to allocate 15% of their national budgets to health, which is significantly higher than aforementioned IMF suggested budget ceilings, and comparable to the percentage that a country like the United States spends on health care.^{xxxix} While a global investment of this magnitude could be helpful in increasing the total number of nurses internationally, we must also acknowledge an uneven distribution of nurses within developing countries. The brain drain of health care workers in Africa is not just about international mobility, but also the uneven distribution of health workers within countries. Richer, better-resourced urban areas have more health workers than poor, rural, under-resourced areas. For example, Ghana’s Greater Accra region, the capital of the country, has thirty times the number of physicians and four times the number of nurses as Ghana’s northern region.^{xl}

Conclusion:

Africa cannot fight disease or poverty or HIV/AIDS without more doctors, nurses, and money. In order to revise the brain drain,

African governments have to disagree with the policies set forth by the IMF and the World Bank. In addition, countries must support a domestically trained workforce, where each country develops a code of practice for their interactions with developed countries and recruitment agencies. When the most important resources are taken from a poor country in Africa, and imported into the United States, the African country becomes destabilized, and unable to provide adequate health care to its constituents.

One of the long-term effects of the increased health care worker brain drain is that countries in the developing world are going to stop investing in education and training programs because such a large percentage of the people they train end up emigrating. One partial solution could involve developed nations, who are benefiting from the migration of health professionals, compensating developing nations from which these professionals came. The compensation could account for the funds and resources that were used to educate the professionals in their home countries. Although remittances provide a source of income for the family members of foreign workers, the remittances do nothing to support the educational infrastructure in place in developing countries. By doing so, we would be creating a cycle of less and less educated people in the developing world, a major risk when in terms of development. According to Caglar Ozden, co-editor of a World Bank study on Remittances and the Brain Drain, "The net impact of remittances on growth and investment in sub-Saharan Africa is not significant compared to India, the Philippines, Taiwan or Mexico."^{xli}

By training and maintaining health workers, we can address structural problems that leave millions of people suffering from treatable and preventable diseases every single day in Africa. It is important to have good preventative programs to prevent disease so that there is less of a need to treat it. It is much

easier to recruit experienced nurses who are motivated to move to the United States, work in better-equipped clinics, and be paid more money, than it is to reform the American nurse education system. Identifying and being at one with one's national identity needs to be stressed so that educated people stay at home. Finding new, effective policies to increase the numbers of health workers will be imperative to combat the extremely high rates of illness and disease that much of the developing world continues to suffer from.

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HPV Vaccine: The future of gynecologic oncology now

Keren Eztion and Kelleigh Briden

Introduction

The Human Papillomavirus (HPV) is a common sexually transmitted disease, however as of late it has been given little attention in the media and in medical offices – as noted by the lack of knowledge the general public has about the disease. Much has been printed about HPV in the news since the recent FDA approval of the new vaccine Gardasil®. The vaccine is expected to prevent certain types of HPV. With the release of Gardasil®, the social debate began over who should be vaccinated, as well as when the vaccine should be obligated to be administered; as part of well-child visits or yearly visits to the gynecologist's office. Such detail is important due to the largely intimate nature of HPV infection. The creation of the HPV vaccine is a dramatic development that has the promise to reduce the prevalence of cervical cancer and genital warts through the prevention of certain types of HPV transmission.

Published Findings

HPV is a virus transmitted through physical contact with an area that has been infected. Often HPV presents itself as a mild abnormality that the body can often take care of in time as part of the normal immune response^{xlii}. The HPV test, to determine the prevalence of HPV, is commonly administered by a gynecologist after the presentation of an abnormal Pap Smear – a test given as part of a general gynecologic visit to test for abnormal cells on the surface of the cervix^{xliii}. A Pap Smear is essential for the early detection of cervical cancer because cervical cancer occurs where squamous and granular cell types meet; the Pap Smear analyzes those specific cells to

look for any abnormalities inside the cells. If a Pap Smear is returned with an abnormality, the gynecologist may recommend an HPV test. The test is similar to the Pap Smear in its administration in that it involves the sampling of tissue in the cervix. The sample, however, is then processed differently. The tendency of having an abnormal HPV test is positively correlated with having an anomalous Pap Smear, immune deficiencies, or smoking^{xliv}. HPV test results are categorized as normal, mild abnormality, or high-grade abrasions. Gynecologists commonly follow a course of passively monitoring a mild abnormality because the patient's body may take care of the abnormality on its own^{xlv}. High-grade abrasions are often countered more aggressively because more serious issues could be implicated, such as cervical or pre-cervical cancer^{xlvi}.

The FDA recently approved Gardasil® after clinical trial because “results showed that in women who had not already been infected, Gardasil® was nearly 100 percent effective in preventing precancerous cervical lesions”^{xlvii}. The HPV vaccines (including those that are still waiting approval) work by using particles that resemble of the virus so that upon injection into the body, an immune response is generated without actually infecting the body with the full-blown virus so that when injected into the body an immune response is generated without infecting the body with the virus^{xlviii}. In the attempt to target the 100 types of HPV the present vaccines are

effective against HPV types 16 and 18, which combined are blamed for 70% of the mild abnormalities returned on HPV tests and 50-60% of the high grade abrasions^{xlix}. In targeting a few of the most common low-risk and high-risk HPV strains, the expectation is that the vaccine will “prevent the majority of cases of genital wart and cervical cancer respectively”^l.

The only drug approved by the FDA as an HPV vaccine as of now is Gardasil®, manufactured by Merck & Co authorized for administration to girls and women ages 9 to 26. Gardasil is a quadrivalent (four types) vaccine prepared from virus-like particles of the major capsid protein of HPV types 6, 11, 16 and 18^{li}. HPV types 6 and 11, which were not discussed previously, are common “low-risk” types that are blamed for genital wart presentations. Gardasil® is currently available and the options should be discussed fully with a gynecologist.

Debate

With all this progress, the deliberation on whether to mandate these vaccinations has garnered a great deal of attention. Between the media, government, and just about anyone with internet, it has become yet another battle in the war of conservatism vs. science. The religious population and many of the rest of country’s social conservatives have joined together in morally denouncing an obligatory vaccination. As the two sides take to arms, the Center of Disease Control’s, *Advisory Committee on Immunization Practices*, a fifteen member board of professional experts^{lii} with experience in related fields, will have to navigate through each side’s claims and decide if they should make the recommendation that the vaccines be compulsory.

The main argument against the required vaccinations are from groups that believe that as a result of being vaccinated, young girls will be encouraged to engage in sexual activity, as they could inappropriately reason that it would be safer to have unprotected sex. People who advocate this line of reasoning believe it is better to continue practicing the current methods

of dealing with the virus; such as public outreach education programs, annual visits to a gynecologist, and in case of infection, the plethora of treatment options. As stated earlier, research shows that yearly pap smears reduce the risk of cervical cancer by 70%. Upon infection, males and females alike are presented treatment options ranging from creams to surgeries, at a wide range of price levels: Cryotherapy, Trichloroacetic acid, ProfiloX and Electrosurgery, and Imiquimod.^{liii} At the same time, questions about the effectiveness of the drug are a concern for some; the vaccine only protects against four types of HPV, only two of which are actually cancer causing. The vaccine does not target the several other HPV types that are known to have oncogenic potential: 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 68, 73, 82. Additionally, according to recent studies, HPV often clears up without treatment as a result of the body’s natural immune response. For example, research shows that HPV 16 spontaneously cleared in 80% of women in less than two years.^{liiv} Opponents question the necessity and effectiveness of the HPV vaccine, and are skeptical that any benefit from the vaccine would outweigh the possibility of propelling young women into a false sense of safety for unprotected sexual activities.

Counter arguments claim that the vaccine is something of too much value to delay instituting it as a requirement. Although the only cancer-causing strains that the vaccine prevents are HPV 16 and 18, it has been determined that 70% of all HPV-linked cervical cancer is connected to these two strains. Since Cervical Cancer is the second most common cause of cancer in women, this could prove to be a great advantage in saving lives^{liv}. Many argue that current treatment is not enough; that the physical and emotional side effects of infection and treatments are enough of a

reason alone. Some treatments may result in physical discomfort, while some go as far as to warn of gastrointestinal disruption, and transient bone marrow depression. Others, in extreme cases if applied in an “over-enthusiastic” fashion, can lead to vomiting, coma, respiratory depression, hematuria, renal failure, and even fatalities.^{lvi} Emotionally, infection may result in fear, embarrassment, anger and shame, and could negatively affect healthy sexual activity, potentially impacting relationships causing further pain on the patient. Many claim that for such a vaccination to effectively eradicate a virus, the majority of people need to be vaccinated, and thus immune to the disease. When the virus runs out of places to infect, it will die out. Only when the vaccine is a requirement can we guarantee that this will occur. Such success is true of many of the mandatory vaccinations already in place. In fact, a recent survey performed by the Gallop Institute showed that 46% of patients questioned their doctors if certain common vaccinations that are currently mandatory are still actually necessary; this is due to the decreased threat level since the vaccinations had been introduced, and required. This success is what is hoped for with mandatory vaccination of the HPV vaccine.

At this point in time, the topic is drawing more and more attention. It is estimated that 20 million Americans are currently infected with anogenital HPV.^{lvii} This year, 15,000 women in the United States will be diagnosed with cervical cancer, and 4100 of those cases will be fatal^{lviii}. The discussion on whether to mandate vaccinations for young women is an important one. In this already ideologically polarized country, this issue which combines politics, science, and sexual behavior, with patients emotional and physical pain, is going to have deep implications whichever way the decision goes.

Conclusion

As of now Gardasil® has been affective, however it is important to remember that the vaccine has only been under study for 5 years (Merck is committed to continue further testing as a requirement of the FDA approval^{lix}). Any actual cancer markers can not been seen for several decades, as of yet the vaccines have been successful in preventing any precancerous changes and in producing an immune response by the body, but for now the need of a booster to maintain this immune response after a span of time is unknown^{lx}. In clinical trial, no serious adverse affects were presented to be of notable consequence^{lxi}. For now, the vaccine’s effect on pregnancy has not been determined because the testing possibilities have not been realized. It is currently recommended that women should not become pregnant for six months after receiving the vaccine^{lxii}. The CDC is recommending the routine vaccination of 11 and 12 year old girls because the vaccine will be most effective in preventing HPV infection if given before the age of promiscuity^{lxiii}. Because the vaccine targets specifically 16 and 18, it is possible that in the future other strains of HPV would become more prevalent in the implication of cervical cancer, but it is the hope that in time science will progress to include many types of HPV for a greater breadth of protection^{lxiv}. Despite the limit of the drug, the implications it may have on the incidence of HPV and consequently cervical cancer are incomprehensible as gynecological oncology moves into a new era.



Could Your DNA Be Your New I.D.?

Samantha Diamond

What would it be like if, the next time you had to visit the doctor for an illness or injury, you were given medication that was specifically suited for your body according to your DNA? As predicted by Daniel Drell of the U.S. Department of Energy and Anne Adamson of the Oak Ridge National Laboratory, this situation could become a reality. Over the next couple of decades, the latest research could potentially change someone from a patient into a "biochemical and genetic individual"^{lxv}.

Back in 1990, the Human Genome Project began its research to investigate the genes of the human body and finished recording their configurations in a database by 2003. The human genome, or the DNA that code for the characteristics of our species, consists of about three billion pairs of chemical bases. These base pairs are what constitute our genes and contain the information to design our proteins and to determine everything from our appearances to how susceptible we each are to certain diseases. It is therefore easy to see why knowing this incredible information could be beneficial to the human race in our efforts to improve diagnostic and therapeutic medical practices.

If our genes could reveal to us how mutations occur within a specific person when a disease is present, it may be possible to create medications that are also specific to that individual. Researchers could essentially generate medicines that would go as unswervingly to the mutation as possible, with less drift into other areas of the body. This could potentially decrease the risk of side effects that go along with certain medications. Doctors may

also be able to better determine why a certain treatment did not work and use that information when synthesizing new medications, instead of simply exercising trial and error. As results accumulate for different treatments, your doctor could possibly examine your DNA sequence that is conveniently attached to your medical chart and decide on the most favorable treatment.

As genetic information becomes a more fundamental part of an individual's healthcare, genetic testing would also become more common.^{lxvi} The development of neonatal genetic testing would be especially useful in catching diseases early in development, therefore giving a better chance of curing them. Testing itself involves either an examination of the DNA structure for mutations, or a comparison between a possibly mutated gene and a normal one. Other types of genetic testing use probes that attach themselves to mutated sequences. When a probe, a short piece of DNA that is designed to match a mutated sequence, is exposed to that mutation it will seek it out and attach to it so that it becomes visible. Hopefully with our genome now recorded, the quality of tests can be improved so that they give more accurate results. This would include tests that do not just show the possibility of getting a disease, but give a more definitive answer as some people may carry a mutation for an illness and still not get it.

With an individual's DNA becoming more important in his or her lifestyle, concerns about the safety and privacy of genetic information are understandable. Outside of one's physician, one would need to have control over who gets to view such a personal record. Just like anyone can steal your identity by obtaining your social security number, the same could be possible through DNA. As far as testing goes, there are apprehensions about information that is given to patients about how the genetic tests work and how accurate they are. There is, so far, little federal regulation of how these facts are distributed. According to a New York Times article^{lxvii}, this is one reason why companies have been rapidly marketing home genetic tests to consumers. People do not even need to see a doctor, they simply have to go online and order a test to be completed at home. As new mutations are discovered, a company can quickly make a home test for them. Eventually there will have to be standard regulations for companies who sell genetic tests to consumers.

The Human Genome Project spent a significant amount of time researching the ethical, legal, and social issues of its findings^{lxviii}. This included the anxiety surrounding how we may view each other as a species once we know our genetic makeup. There is already a high level of judgment that is passed on an individual corresponding to race, ethnicity, and social status. If we all knew our genetic compositions, we could essentially bring discrimination to a genetic level. There is already legislation that states that employers cannot discriminate against anyone genetically and that they cannot ask for a DNA test. Since DNA can be kept for an indefinite period, however, there exists the threat that if someone does get a hold of another's DNA they might use it for purposes other than those for which they were gathered. Although there is this legislation against genetic discrimination in the work place, there is no telling how our society

might react if we start using our DNA in everyday life to identify ourselves.

There are undoubtedly many factors to consider when examining the evolution of genetics within medicine. While we may essentially see many benefits as far as treating illnesses in the near future, there is no way to know how greatly incorporating DNA testing into our lives will cause our society to change. Only time will be able to reveal the revolutionary effects that knowing our genome is capable of.

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Implantable Wireless Biosensors: The Future

Olga Jacques

Imagine inserting into the bloodstream a device that is smaller than a dime and detects slight changes in chemical activity. Changes are monitored by implantable wireless biosensors that integrate into a patient's blood vessels to form a "biological chip". The biosensor can detect changes in protein levels and then, amazingly, will send a message to the patient, through a wireless device. The patient will then be able to contact their physician and give them an early notice of their condition. Currently, many physicians have to order blood work or wait until the patient starts to get symptoms of an illness in order to detect a problem in their health. In an article, the CEO of the University of Rochester Medical Center, Bradford Berk, M.D/Ph.D. states that "Cell-based analysis of physiologic functions is a novel approach to monitoring human disease and response to therapy...". This technology has the potential to be an interceptor of disease and to save the lives of millions of future patients.

Many patients suffer from diseases that require many diagnostic tests and blood drawings to monitor the degree of progression of the illness. It is extremely difficult for these patients to cope with their sickness and even harder to keep up with the medication and appointments that they need in order for their physicians to monitor their ailments. With an implanted wireless biosensor, the doctor would have more opportunity to closely monitor the slightest changes within the body that may aggravate the condition. In the article *Cardiologist's 'living chip' changes science of disease monitoring*, it states that "When implanted, this chip can detect physiologic and

chemical changes with faster, improved accuracy. These more accurate results, retrieved without invasive testing, allow for better and timely response and, the hope is, a healthier patient".

According to a University of Rochester news release, "...cells specific to the patient can be engineered to live on and function as part of the miniature electronic chip. The wireless biosensor is placed within and around blood vessels and nerves to provide detection and stimulation of the surrounding tissues or organ systems, with the ability to detect changes". According to the University of Rochester, "The initial application for this technology is expected to involve pharmaceutical companies, which could use the biological chips to test potential drugs in the lab more quickly and accurately". It then becomes clear that the implantable wireless biosensors will remain widely unavailable for several years. In any chance, this groundbreaking movement will surely create changes in healthcare that will be invaluable.

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Muscular Dystrophy

Victoria Yu

It is in the case of human history that I have found walking to be an essential need in the sustenance of life-long endeavors. I walk to do almost everything; yet, in the given nature of what seems to be such a common bodily function, I have also found that there are many who cannot share in this experience. Of those many, there are the predisposed individuals who have Muscular Dystrophy (MD). Defined as “any of a group of hereditary diseases characterized by progressive wasting of muscles” (mw.com), it is a disease that alters and controls a person’s life in ways that are inexplicable to those who are without it.

Muscular Dystrophy is separated into two main types: Becker muscular dystrophy and Duchenne muscular dystrophy. Becker’s dystrophy is the less severe form of the two that possesses a later onset and a slower progression of the disease. Duchenne is the severe progressive X-linked form of males. It has its onset in the early years and is marked with a ten to fifteen year lifespan after the first symptoms are observed. The sad reality is that the respiratory, phonatory and articulatory system are all made up of essential muscles that are affected during the degeneration process; meaning that breathing and speaking are gradually lost along with the bodies inability to walk and maintain balance.

Perhaps, if this is too much fact and not enough reality for you, it would be more appropriate to put yourself in the shoes of a young boy who has just discovered that something is wrong. He used to toy around in the playground and go down the slide. Suddenly, he feels himself falling without

having the ability to control his fall. This happens a few times, but happens more often as time passes. At first, he is able to pick himself back up. After a few more falls, he realizes he has lost the ability to stand up; he will never be able to stand and run again. This is a small window into the harsh reality of MD.

However, hope is not to be lost in what is. Rather, hope is to be found in what will be; the Muscular Dystrophy Association. MDA’s funded research, which discovered the gene that when altered, leads to DMD and BMD, has been targeting several directions in which to halt or reverse the disease. The directions include: working with a dystrophin gene without the DMD mutation and testing it; testing a drug called PTC124 which hopes to change the way muscle cells “read” genetic instructions in boys with DMD; experimenting with antisense oligonucleotides, compounds designed to help cells skip over any genetic errors; usage of stem cells to regenerate muscles; and adopting strategies to increase the protein utrophin, which is similar in function to dystrophin, but is produced normally in patients with DMD or BMD. This helps to ensure the fact that Muscular Dystrophy is not a forgotten disease, if anything, it is the exact opposite.

With all this being said, the question that needs to be asked is not so much of “what is Muscular Dystrophy?” but more of, “what can I do about Muscular Dystrophy?” One disease out of the many others seems so

insignificant in its “impact”, if that is the most appropriate word for the case of being ill. However, this is not the case because families, doctors and researchers in the United States and elsewhere, are dedicating their lives to helping patients and families with this disease. Our society is directly impacted by this disease as it works itself into the complex frame of societal Medicare. So in order to counterattack this negative impact of “disease”, any kind of help such as donating money or working at MDA’s summer camps can be of great benefit. It’s about taking one step into the world of Muscular Dystrophy and seeing where it takes you. Perhaps it will take you as far as research, or perhaps your step will end in visiting a website; but whatever the case may be, at the end of the days it’s knowing that you cared for something more important and larger than yourself that truly matters. The true dialogue of medicine is found not so much in these articles, but in what you are willing to do with the issues of the articles themselves.



Paper or Plastic?

Taisia Vitkovsky

The word "plastic" in "plastic surgery" is derived from the ancient Greek word "plastikos," which means to mold or give form. Plastic surgery includes both the reconstructive and aesthetic subspecialties. In today's society, undergoing some form of cosmetic procedure seems almost as commonplace as getting a haircut. From 2004-2005 the number of cosmetic surgery procedures increased by 11%. Though this figure has surged drastically, altering a physical attribute to improve one's appearance or to fit a social norm has been a phenomenon of many societies for thousands of years. Until the revolution of Sun Yat-Sen in 1911, women in China practiced foot binding, an incredibly painful and permanently deforming practice. In the United States in the 19th century women wore corsets to make their waists as small as possible, often resulting in broken ribs and damaged internal organs. Individuals today are not any less influenced by societal pressures to appear a particular way.

Reconstructive procedures have been used to correct physical deformities since ancient times. According to the American Society of Plastic Surgeons, physicians in ancient India used skin grafts in reconstructive surgery as early as 800 B.C. The punishment for adultery was having the top of the nose cut off, and a method now called Everett surgery was used to recreate the nose out of skin from the forehead. Jumping ahead a few thousand years, America's first plastic surgeon was Dr. John Peter Mettauer who performed the first cleft palate operation in 1827. Despite his achievements it was not until World War I,

almost a hundred years later, that plastic surgery gained real footing in the medical arena. Modern weapons such as flamethrowers and trench mortars caused severe facial wounds and burns that were unprecedented in the history of plastic surgery.

Recognition of the progress and history of plastic surgery by the American Board of Surgeons occurred in 1931 with the establishment of the American Society of Plastic and Reconstructive Surgeons (ASPRS). In the late 1930's, the American Board of Plastic Surgery (ABPS) was established. The board conducted an exam for physicians to qualify as plastic surgeons. The public perception of plastic surgery has long been limited to cosmetic work, only. In 1999, the name of ASPRS was shortened to ASPS to help equate "plastic surgery" with "reconstructive surgery" as well as cosmetic (ASPS, 2007).

Cosmetic surgery is the progeny of reconstructive surgery. With advancements in reconstructive surgery coinciding with demand for enhancing one's appearance, a medical discipline emerged for the healthy. After the end of the Great War healthy individuals, particularly women, replaced soldiers as the primary patients of plastic surgeons. This may have been perfect timing; fashion until the 1920's clothed women from head to toe, but in the roaring twenties the flappers in America wore knee-length sleeveless dresses that encouraged women to have long slender legs and a waif-

like body. Plastic surgeons had to convince their contemporaries that there is an altruistic nature to operating on medically healthy individuals. In 1891, clinical psychiatrist Enrico Morselli coined the term "dysmorphophobia," meaning fixation on specific qualities of the body that often leads to much anguish. By the 1920s the idea that plastic surgery could treat depression stemming from bodily imperfections was widespread. This idea resonates today as cosmetic surgeons sometimes refer to themselves as psychiatrists with a scalpel.

Plastic surgery benefited tremendously from the scientific developments in the 1960's. A versatile new substance, silicone, emerged as an important tool for plastic surgeons. Initially used to treat skin imperfections, its use was extended to breast implants in 1962. However, controversy developed in the 1980s and 1990s around claims that the silicone gel was responsible for a number of systemic health problems, including autoimmune disorders. The FDA mandated that only saline breast implants may be used, and it was not until January 2007 that silicone was re-approved.

The recent growth of plastic surgery can easily be attributed to safer, less invasive surgical techniques. For example the endoscope, a fiber-optic tool that has been used for nearly a decade in other surgical disciplines like orthopedics has infiltrated plastic surgery and has greatly reduced scarring and recovery time. The promise of a more pleasant post-op experience is very encouraging for patients who are considering having some sort of procedure done.

In the last several years the popularity of minimally invasive procedures such as Botox injections and chemical peel has grown sharply. 2005 saw a 13% increase in minimally invasive procedures from the year before. 3.8 million Botox procedures alone were performed in 2005 compared with 783,000 laser hair removal procedures. For comparison, about 300,000 liposuction procedures were performed in 2005. In the 1950's researchers discovered that

injecting overactive muscles with botulinum toxin type A, or Botox, decreased muscle activity by blocking the release of acetylcholine at the neuromuscular junction, thus preventing the muscle from contracting for several months. Research in the 1990s led to the discovery of the cosmetically desirable effects of Botox and in April 2002 it was approved by the FDA in such capacities. Injections of this toxin are so popular that doctors are administering it at events called Botox parties, small gatherings of men and women at the physician's office. This is more affordable for the patient and it eases some of the stress of getting an injection.

Another milestone in plastic surgery came in the 1990s. In 1998, President Clinton signed the Women's Health and Cancer Rights Act of 1998 (WHCRA) which included a provision requiring insurance companies to cover the cost of reconstructive breast surgery for women who have undergone a mastectomy. Currently plastic surgeons are working to ensure that treatment of children's deformities will also be covered by insurance plans.

Despite the glamorous representation of cosmetic surgery, in particular, on programs such as E's Dr. 90210 and ABC's Extreme Makeovers, it is important to remember that things may go wrong. When considering having even the smallest procedure done, the patient is responsible for researching a physician's credentials and check to see if the physician is board certified in plastic surgery.



Medical Book Review: *Hope Or Hype: The Obsession with Medical Advances and the High Cost of False Promises*, By Richard A Deyo, M.D., M.P.H., Donald L Patrick, PH.D.

Paul Myoung

Science and medicine have always been two sides of the same coin. Doctors, physicians, and researchers are charged with the same responsibility to promote the betterment of healthcare and advance its human science. But within the mix, where do the policy makers fit? What role does Washington play in the competitive field of medicine? Not only is the science behind medicine essential, so to the economics that govern the access, quality and affordability of healthcare. Universal healthcare coverage might be a helpful step toward a better future, but *it* alone does not solve the multiple disparities in health care and the lack of medical accountability that exist in the American health environment today.

I am concerned that in a few years, health care won't change. The science will progress and new treatments will be discovered, but the social and personal components essential to the efficiency of medicine will be forgotten. I oftentimes overhear doctors in the hospital cafeteria line complaining. What may surprise you is that their gripes were neither directed to the patients, the medicine, nor the long work hours; it was the poor managerial and inefficiencies of their profession. Whether it was malpractice or the overbearing costs of Medicare and Medicaid bills, it was something that didn't deal with medicine directly. It seemed as though their once felt love for

medicine became overshadowed by the inconsistencies in the hospital administration and the bodies that command the direction that healthcare is going.

My concerns are best embodied in a recent book I read. *Hope or Hype*, written by two professors of medicine at the University of Washington in Seattle, Richard Deyo, MD, MPH, and Donald Patrick, PhD, MSPH, sets the stage for a discussion of US health care by elucidating the common social misconceptions of rising costs, the true betterment of medicine, and the proper actions needed for lasting and meaningful change.

There is no argument that health care issues need to be addressed in a clear and simple fashion to the American public. However, there is much debate as to the type of change that our current situation warrants for future safety, access, and quality of medicine. In this piece, both doctors have taken a very comprehensive look at health care expenses and set grounds for strategic efforts in addressing our mass cultural beliefs in medical "breakthroughs," which have in part contributed to driving much of the cycle of spiraling medical costs. The authors combine ingredients in medical ethics and health policy writing to offer an intelligent, thoroughly referenced, and inclusive look into key health subjects ranging from pharmaceuticals, health insurance, and

surgical devices to overall medical efficacy and measurement of progress.

The book is partitioned into three focal areas: myths of medical and drug innovation, the main players in governing medical care, and lastly, a reflective examination of the current state of American healthcare and the forecasted consequences of its inactions—or more appropriately, misguided actions.

The book begins with a guide through the foggy forest of American consumer culture and its pervasive merge of individual need and want. The existence of an inherent myth of “newer is better, more is most, and cheaper is worse,” within the psyche of most people sets a conducive environment for deceptive means and successful advertising.

Deyo and Patrick begin their investigation with a pejorative look at pharmaceutical marketing and medical technology. They claim marketing is a science that lacks class and conscience, proving to be dangerously effective in selling a product, method, and idea. Taking high-tech medical devices for example, the touted scientific innovations are what an average person would see on their local and national news outlets, not the exorbitant cost nor the unnecessary extremeness. A few months ago, German doctors transplanted a temporary “total” artificial heart into a 62 year-old Berlin patient. Soon, the frenzy and rumors ensued, hitting airwaves as “realistic” medical future, making the front page of National Geographic magazine, and causing news pundits to question America’s superiority in scientific rigor and intellectual competence. How does a hopeful idea wrapped around an experimental device project medical certainty and future success? What is the practicality of a nascent, drastic, and very expensive form of treatment in weight with more traditional forms? In this example, the artificial heart’s “success” is experimental at best and dangerous at least, where only time will reveal the true application of its usability. But one must ask

the question: where do preventative measures and betterment of lifestyle fit into the mix of this argument?

We must ask ourselves, does high-tech medicine crowd out low-tech benefits? Public policies—water quality, education, housing, and health codes—are more powerful determinants of population health than singular technological steps. Despite the truth that medical technology is intended to benefit the relatively few people with a particular disease or problem, it also contributes little to the welfare of the whole. Deyo and Patrick argue of what use a medical “breakthrough” is if it only benefits those who can afford the treatment and access the types of care needed?

In all honesty, it is not easy to weigh the wants and needs of individuals against those of the population as a whole. However, this book critically asks the important questions in clinical medicine: Are we placing too much emphasis on medical technology? Is there an excessive or misguided use of medical treatment? What role does social care play in improving health care, and what role should it have?

Let’s consider the first question: medical technology is adopted too quickly. Because of this, there lies a cost of reduced ability to evaluate it critically. In many cases, the new treatment shows to be no more effective than the conventional treatment. For instance, usage of pulmonary artery catheter for high-risk surgery patients, long-term hormone replacement therapy after menopause, or radical mastectomies for breast cancer clinically proved to have no basis for improving successful surgery or treatment. In addition to costing less than the newer techniques, older methods show a longer track record of safety and effectiveness. The incorporation of these unneeded treatments into common medical practice is a main factor in adding to the exorbitant costs in American health care.

So why do doctors use these risky and wasteful (sometimes harmful) procedures? Let's consider how doctors develop preference of procedures and prescriptions. Deyo and Patrick, having experienced the entire gamut of drug firm wooing and enticements, both carry strong opinions against drug advertising to doctors and consumers. Often times, the main player in treatment decisions are the patients. This can be a good and bad thing. In 2000, drug companies spent \$13.2 billion on promotions to doctors and hospitals alone. Doctors' prescribing decisions are sought after and bid like professional sports drafts; being wined, dined, and pampered to place its drug on the doctor's table and prescribing habits. In addition to those prescribing the medication, drug firms also set their crosshairs to those taking the prescriptions.

Big pharma pairs with huge marketing agencies to directly market their drugs to the listening public. This form of advertising is called direct-to-consumer (DTC) advertising, and is only legal in the United States and New Zealand. Other countries have opted for independent sources to give drug information instead of the drug companies, in order to "help establish informed choice for patients instead of just more brand awareness."

Still, underneath the happy drug commercials and colorful news ads is the reality that newer is not always better and there are consequences to the public's obsession with medical technology. Some may be advances *in* health care, but many are not advances *of* it.

However, who regulates these direct-to-consumer ads? The FDA is charged with overseeing DTC ads, but what many people don't know, is that the FDA generally doesn't have the authority to pre-approve ads before they go to the public. The reviews come when the ads are printed or aired, usually well after they have achieved wide exposure. Also, the FDA's level of power is limited to sending

regulatory warning letters; they can't levy fines.

Not only should the safety of these drugs be questioned, so should the need for them as well. As a former *New England Journal of Medicine* editor stated, "The less important the drug, the more marketing it takes to sell it. Important new drugs do not need much promotion. Me-too drugs do." But not only are these DTC advertisements so prevalent and almost expected in consumer media outlets, the drug claims are usually left unchecked and subliminally accepted. A "pill for every ill" sense of entitlement runs popular in the American psyche and the drug marketers know how to take advantage of this expectation. Yet, drug makers portend efforts to test the efficacy and safety of their drugs, in legerdemain fashion. Often times, drug makers sponsor long-term studies that analyze drug performance; however, pertinent data is often withheld, supportive figures often repeated in publications, and unfair comparisons are vainly made in attempts to increase prescription of a product. This book brings up the fact that in many cases, the wrong questions are being asked. For example, the FDA requires evidence of drug efficacy and safety, but does not necessarily require comparison with the best available alternative; nor does it require companies to publish its evidence in medical journals. Many powerful pharmaceutical companies, despite spending millions financing studies and follow-ups, purposely withhold extensive data revealing drug complications and lack of effectiveness versus a competing brand.

Deyo and Patrick also address the fact that the drug may not be the reason for health improvement in treating an ailment or disease. In addition to the placebo effect, natural healing and regression to the mean—a statistical method where random fluctuation creates impression of improvement—help to explain why patients often improve even with ineffective treatment.

Deyo and Patrick do not forget to reflect on the actions of doctors as well, with many either jumping on the drug bandwagon, performing needless extensive surgery (over treatment), or agreeing to do popular procedures (gastric bypass) on the basis of an “if I don’t some other doctor will” attitude. It’s true that every surgeon wants to be seen as cutting edge, but surgery offers a lesson in how low-tech aspects of care have a big influence on the high-tech results; such as a quality nursing staff. Some doctors may tout to have the latest instruments and surgical machinery, yet often times newer equipment signals less doctor experience in using the technology.

Pharmaceutical companies and medical device manufacturers do not carry total responsibility for America’s bulging health care bills however; with greater emphasis being put on expensive treatments, its no wonder the US pays more for its health care than the rest of the world. Deyo and Patrick brilliantly guide the reader through empirical examples and thoughtful recommendations toward improving the path that medicine is heading towards. Some may find their words cynical toward medical technology and “conservative” toward advancement, however their efforts are not geared to batter medicine, but to address genuine concerns to this imperfect science. Medical technology should not be halted, but the process of its adoption should be collective in nature, where all parties—doctors, patients, media, pharmaceuticals, insurers—should be willing to make some changes in order to solve multi-faceted problems in health care.

Much of the book elucidates misconceived notions and blind trusts in medical care, while empowering the consumer to seek introspective opinion and voice in the matter. It is my genuine belief that health care is everyone’s issue, regardless of status and belief. Because of this, it is the government’s obligation to push this issue, and to keep a

balance between social change and medical development in face of the ever-present techno-consumptive ways and entitled attitude of its people. The government needs to address the questions and spearhead the efforts toward collective change. There are no quick fixes or magic sutures to relieve pain or restore immediate function; and there are neither simple nor quick ways to solve these problems.

It is important to consider whether we are overusing medical treatment, exaggerating its benefits over its risks, and failing to maintain a balance between social change and technological development. Currently, there are more questions than answers: Are these medical advances worth it? Should these potentially beneficial treatments for the few be valued over preventive treatment for the many? Who should pay for which kinds of treatment? And the list goes on, leading to further complications and confusion within and about the health care culture. Nevertheless, collective efforts need to be made in Washington to secure lasting benefit and future value of medicine.

If you wish to better yourself, freshen your perspective, or broaden your knowledge of the health care issues at hand, *read* this book. Take an active role as a student of knowledge and a potential leader of change. They say that the purpose of knowledge is not understanding, it is *action*. Go act on this knowledge and see for yourself how much you will start to question the established system and how you can be a working part in its advancement.



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