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Commentary

What can U.S. dermatology learn from health care systems abroad? An observation of Taiwan's system of clinical efficiency as a possible model for increased patient access to care and affordability

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Abstract

Background: Difficulty in patient access to care and affordability are major problems faced by our dermatology specialty in the United States. However, Taiwan provides adequate and affordable dermatologic care for all of its citizens. Herein we describe our first-hand observations and findings of the outpatient dermatology experience in Taipei, and contrast it to the experience in the United States.

Observation: In Taipei, Taiwan, we observed patient management, electronic documentation, and billing during outpatient dermatology visits in five settings: one academic hospital outpatient dermatology department, one academic hospital Information Technology department, and three private dermatologists' offices. Through our observations, we found that the dermatology specialty in Taiwan is able to overcome challenges with access to care and affordability through three key system features: (1) short yet frequent patient visits (2) close proximity of ancillary staff, and (3) an integrated and paperless electronic medical record and billing system.

Conclusions: The Taiwan system is attained with some sacrifice, such as shorter time spent with patients and less personalized care. However, because this system can meet the basic dermatological needs of the entire population, possibly better than our current system, it behooves us to study the Taiwan system with respect and care.

Keywords: access to care, health care system, dermatology, Taiwan, United States

Introduction

Difficulty in offering adequate patient access to care has always been a major problem for our dermatology specialty in the United States (U.S.). This challenge may be further exacerbated by the current economic climate. Two main factors comprise the barrier to dermatologic care: First, there is limited availability of dermatologists to provide care, resulting in long waiting times for an appointment. Second, there is a lack of affordability, especially for the uninsured and underinsured patients of low socioeconomic status.

The average time to obtain an appointment with a dermatologist in the U.S. is at least one month, even for a serious chief complaint of a changing nevus [1]. Reported wait times for Medicaid patients are even longer (50 days) [1]. Uninsured and Medicaid patients only comprise 5% of the dermatologic patient population in the U.S. even though the calculated demographic proportions for this population is closer to 27% [2]. Difficulty in access to care is further exacerbated by a mismatch between dermatological manpower and patient needs. Despite a growing aging population resulting in increasing utilization of healthcare services, there is a lack of corresponding growth in the number of dermatology providers—resulting in the inadequate availability of dermatologic care [3].

A prominently discussed alternative to the U.S. system is the single payer national healthcare plan such as in Canada and the United Kingdom (UK). The single payer plans in these countries are much more affordable, but have the well-known drawback of long waiting lists, especially for non-emergent medical conditions. After comparison of various health care reform models across the world, the National Health Insurance (NHI) of Taiwan stands out among the rest in that it is both affordable and accessible for all of its citizens without long wait times. To understand what factors make this possible in Taiwan, we observed first-hand patient management, electronic documentation, billing, and smart card use during outpatient dermatology visits in 5 settings (1 academic hospital outpatient dermatology department, 1 academic hospital Information Technology department, and 3 private dermatologists' offices) in Taipei, Taiwan in November 2011.

Observations

Dermatology in Taiwan

Taiwan instituted the NHI system in 1995 that was modeled after the combination of the national health system of Canada and the U.S. Medicare system. The NHI is a government-run, single-payer national health insurance scheme, financed through a mix of premiums and taxes that compensate both public and private providers [4,5]. This plan was instituted in less than a year with comprehensive coverage including inpatient care, ambulatory care, laboratory tests, diagnostic imaging, prescription, dental care, traditional Chinese medicine, day care for the mentally ill, limited home healthcare, and preventive medicine.

As a single-payer entity, the Bureau of National Health Insurance (BNHI) exercises considerable negotiating power over provider fees and drug prices [4,5]. However, there is more merit to Taiwan healthcare than merely being a single payer system because Taiwan does not have the typical problems of most single payer systems such as long waiting periods, which prevent access to care. Moreover, unlike the Canadian or British systems, patients have freedom of choice and can see any physician in any specialty without referrals. The NHI covers 99% of the population in Taiwan [5]. In the past decade, 72.9% of people in Taiwan were satisfied with NHI, which is superior to five other Organisation for Economic Co-operation and Development (OECD) countries—Australia, Canada, New Zealand, the UK and the U.S. [5]. The unique features, as described below, appear to account for the combination of affordability and easy access to care.

Optimization of Clinical Productivity

There are two main ways that can increase dermatology manpower: One way is to increase the number of dermatologists and the other is to optimize the clinical productivity of each provider. The latter is the approach utilized by the Taiwanese system through maximum efficiency of providers and minimal extraneous duties that take time away from physician availability for patients.

The first unique aspect of the Taiwanese dermatology system is the model of short but frequent visits. The typical waiting time for a dermatological appointment is one day and patients often receive same day appointments. The dermatology clinics operate very efficiently with a range of 30 patients seen each half-day session in the academic hospital setting and up to 100 patients for each half-day session in certain private practice settings. In our observations, the dermatologist stays in the same examination room while the patients rotate through, allowing for increased efficiency. The visits are often focused on one chief complaint. Thus the visits are shorter in duration but are also more frequent—typical follow-up occurs in one or two weeks.

The second factor is close proximity of ancillary staff to aid the flow of clinic. Each dermatology office had a nurse sitting next to the physician who provides patient education. There is also a pharmacist within the office with whom the dermatologist communicates electronically to provide instructions to the patient on proper use of medication.

The third factor is maximal integration of health information technology. One innovative feature that symbolizes this system is the Integrated Circuit (IC) card or "smart card" (Figure 1) carried by all Taiwanese citizens. The smart card is the size of a credit card and contains 32 kilobytes of memory to include not only the provider and patient information but, in fact, the entire medical record of the patient [6]. The physician places the card into a reader and the patient's medical records are instantly accessed on a computer screen (Figure 2). The use of the smart card allows for access to the patients' medical records and paperless billing, both conducted instantaneously. Electronic medical records with preset templates by the physician expedite patient charting. Patients can also use their smart card to register for an appointment through an automatic kiosk or in person. The smart card also allows for increased accountability with electronic tracking of all clinic visits and documentation, thereby reducing potential abuse of the system by the physician or patient. This leads to reduced insurance fraud, overcharges, and duplication of services and tests.

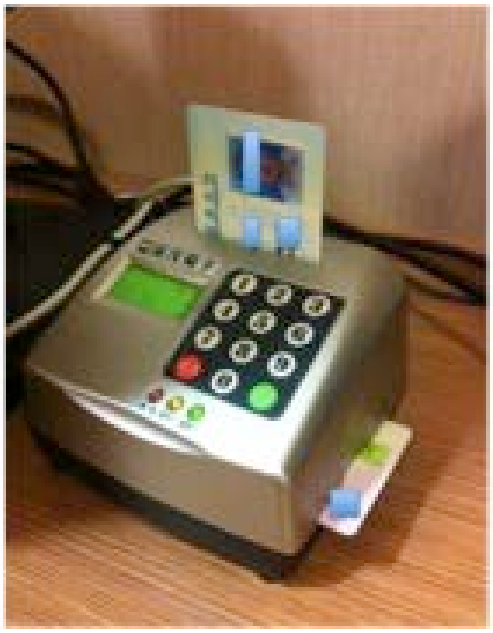

Figure 1: National Health Insurance smart card. Microchip in the smart card contains the entire patient medical record. **Figure 2: Smart card reader**. Protected health information of the patient is kept confidential, as the physician's identification card (inserted on the side) is necessary to access medical records.

Affordable Care for All Citizens

The factors mentioned above, including short yet frequent visits, ancillary support staff, the smart card, and minimizing administrative time and costs, increase the clinical productivity of the provider, leading to potentially improved access to care without long wait times in Taiwan. These same factors also contribute to fiscal efficiency; allocated funds are maximized to direct patient care resulting in a system that is affordable for patients. By conducting short, focused clinical visits with the cooperation of the patient and aid of ancillary staff who make the rapid flow of the clinic possible, a single physician is able to see a higher volume of patients. It therefore, becomes feasible to charge less per patient visit.

A single, unified electronic system can improve patient care and vastly reduce the burden of claims processing and billing. With the smart card, bills are directly charged to the BNHI, which has a uniform fee schedule [4]. This system eliminates the temptation to "up code" by providers, therefore, decreasing the need for provider audits by the payer. Decreased potential for audits and malpractice claims reduces physician time spent on defensive patient charting. Therefore, only the most clinically relevant information is charted. Physicians are paid automatically in one to two weeks [4]. An entirely paperless system allows for the lowest health care administrative costs in the world—2.2 percent of the total health budget in Taiwan [4], as compared to 6.6 percent in the U.S. [7]. The U.S. health care system, which is led by for-profit insurance companies, spends 11 cents on the dollar more on paperwork and administration than any other developed nation. This alone accounts for more than $200 billion a year [8]. It has been reported that American insurers and physicians spend billions of dollars disputing over insurance claims, leading to profits for consulting firms who assist both sides [9,10]. Taiwan spends 6.23% of its Gross Domestic Product (GDP) on health care [4] compared to 17.6 percent in America [7]— with the U.S. figures being one of the highest among industrialized nations [11].

As previously stated, 99% of Taiwanese citizens are covered by the national health system [5]. For employed individuals, the employer contributes 60% of the premium, the employee contributes 30%, and government subsidizes 10% [4]. The government fully subsidizes the premiums for the unemployed and citizens with low socioeconomic status and offers partial subsidies to

veterans and the self-employed. The average insurance premium for employed workers is 4.6% of wages [4]–the average in the U.S. is 12% of wages for individuals already covered by their employers [12]. The typical copay for an outpatient visit with a dermatologist is $2 and copays are capped to prevent patients facing a great financial burden or bankruptcy. In Taiwan, the typical copay for prescriptions is 20% of the cost of the drug and the co-pay is capped at $64.

Discussion

Healthcare reform is occurring throughout the world and nations can learn from the experiences of one another. The U.S. faces challenges of lack of patient access to care as well as the lack of affordability of care especially for the uninsured, underinsured, or low-income individuals. Although policymakers in the U.S. discuss what might be learned from the experience of health care reform abroad, they most often focus on larger nations such as the UK and Canada and they rarely pay attention to experiences of smaller nations. Taiwan is a country with 23 million citizens, a population closer to that of Canada than the U.S. Therefore, the population and geographic size differs from that of the U.S. However, these factors should not deter us from learning from the effective system in Taiwan. The nationalized health care plans of Canada and the UK are affordable, but access is often difficult and waiting times are long. Taiwan provides an ideal affordable model with easy access without long waits.

We have identified three key factors of the Taiwanese model that may account for its success: (1) high volume of short yet frequent visits, (2) close proximity of ancillary staff including a pharmacist, and (3) an integrated and paperless electronic medical record and billing system, resulting in minimal administrative duties and costs.

The major difference between the Taiwanese and U.S. dermatology modus operandi is that in Taiwan, many more patients are seen each day with much shorter visits that typically focus on one chief complaint. This requires both ancillary staff, including assistant nurses, and a pharmacy within the office, so that these team members can take over much of the responsibility for patient education and instruction. The system is also made possible by proper patient expectations and cooperative behaviors. With many other patients waiting to be seen, they are mindful of the limited time available for the dermatologist to attend to their problem and are willing to focus on the chief complaint at hand. The patients were content with this practice, possibly because they are aware that they can easily return for more visits— as compared to the situation in the U.S. in which difficult access to a provider and high copayments may pressure the patients to have all of their concerns addressed in one visit.

Moreover, as a side benefit, there may be merit to short, frequent, focused visits to reinforce treatment plans because patient non-adherence to therapy is a common phenomenon [13,14]. Non-adherence may relate to patients' misunderstanding of directions, forgetting to use the medications, or altering or completely stopping the regimen because of perceived ineffectiveness, loss of motivation, or side effects. The effects of non-adherence such as wasted, unused medications, and consequent poor control leading to increased hospital stays exceed $100 billion a year in the U.S. [15]. An analysis of patient adherence to dermatologic treatments through electronic means of measuring medication containers was performed by Feldman et al., who found that adherence rates declined from 84.6% to 51% in only 8 weeks [14]. Subsequent studies demonstrated that adherence rates were significantly higher around the time of return office visits and concluded that the use of frequent follow-up visits can be an effective way to boost adherence and achieve better treatment outcomes [16].

It must be noted that we merely observed the benefit of frequent and shorter visits in Taiwan, but further analysis is needed to ascertain any benefit in the U.S. Certainly no system is perfect and there exist potential drawbacks to the Taiwanese single payer health insurance system, such as less time with patients and increased demand on providers to meet patient needs. Both factors may lead to reduced quality of care. Despite certain drawbacks, the Taiwanese healthcare system serves as a working model to tackle the major obstacles in U.S. healthcare of access to care and affordability.

Conclusions

The NHI in Taiwan, combined with the use of a uniform electronic records and billing system with the smart card, provides a model of a highly efficient system to deliver adequate dermatologic care to all citizens regardless of socioeconomic status. We present this observation as a possible way to manage a dermatology center. However, no studies have been performed to demonstrate that the Taiwanese system is more effective than the current system in the U.S. Even though the Taiwan system is attained with some sacrifice, such as shorter time spent with patients and less personalized care, this system can meet the basic dermatological needs of the entire population, possibly better than our current system. Therefore, it behooves us to study the Taiwan system with respect and care.

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