



Challenges of Health Economics and Observational Research in China

Graeme Jacombs, MA, MSc (with Marco DiBonaventura, PhD)

China Healthcare Reform

As a country in economic transition, China faces fundamental barriers to providing sufficient and good-quality healthcare to the population, including limited market accessibility and lower patient affordability to healthcare. Although the healthcare provision system is well developed and sophisticated, especially in urban areas, the average resource level remains relatively low. For example, China has only about three beds and four physicians per thousand citizens. The shortage of healthcare resources is especially problematic in rural China. Despite the fact that urban China enjoys sophisticated medical care facilities, demand for healthcare products and services still well surpasses the supply. With long lines waiting outside the clinic room in large hospitals, an average patient spends 30 minutes queuing for registration, 90 minutes waiting for the nurse, and only 6 minutes seeing the physician for diagnosis and treatment.

The affordability of healthcare products and services also prevents a large proportion of the population from obtaining medical care: out-of-pocket expenditure on medical care was 18 times higher in 2011 than in 1990, and 45% of total healthcare expenditures come from patients' own pockets.¹ Increases in household healthcare costs have far outstripped inflation: Since 1990, the Consumer Price Index in China has gone up threefold.²

Armed with political and financial power, the Chinese government has embarked on a large and complex endeavor to tackle these two barriers to obtaining healthcare: to improve accessibility and to make healthcare more affordable. This healthcare reform comprises five key initiatives, each addressing a specific systemic problem (Fig 1).¹

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Fig 1. Five key initiatives of the healthcare reform in China.

EDL=essential drug list

Source: Kantar Health: *The National Health and Wellness Survey*. Available at www.kantarhealth.com. Accessed Oct 9, 2012. Reprinted by permission of Kantar Health.

One aim is to improve social medical insurance by extending medical insurance coverage to every citizen in China. A second aim is to rationalize drug costs by reducing the costs of medications. Currently, there is no system in place to evaluate the clinical and health economic evidence of a particular medication. Only academic institutions are involved in such health economic and outcomes research (HEOR) evaluations, though health economic centers are helping the government explore the feasibility of implementing a formal health technology assessment system. It is reasonable to expect more HEOR evidence will be necessary for payer decisions over time. The third aim is to invest in and build primary care systems through revamping the small hospitals and building new community healthcare centers. The fourth aim is to implement the EDL in conjunction with basic healthcare to the rural population to ensure sufficient access to basic medical care. The fifth aim is to reform large urban hospitals, which currently depend upon income from selling medications as opposed to medical services.

Unique Characteristics and Attitudes of Patients in China

The need for these healthcare reforms can be observed by comparing some basic characteristics and attitudes of patients in China with other regions using the National Health and Wellness Survey (NHWS).¹ The NHWS is an annual self-reported health survey of adults (18+ years of age) conducted primarily using the Internet, although also offline in regions/demographic subgroups with low Internet penetration. It is fielded in the United States, five European Union countries (France, Germany, Italy, Spain, and the United Kingdom), urban China, Japan, Brazil, and Russia, using a random stratified sampling framework to mimic the demographic composition of each country.

As shown in Fig 2, patients in China were the most willing to consult with a physician, are the most likely to believe that regular contact with their physician is the best way to avoid illness, and have the strongest preference for branded medications.¹ However, despite these beliefs, patients in China reported the lowest level of physician attentiveness as well as the lowest levels of overall health (as measured by the first item of the Short Form 12 health status instrument).

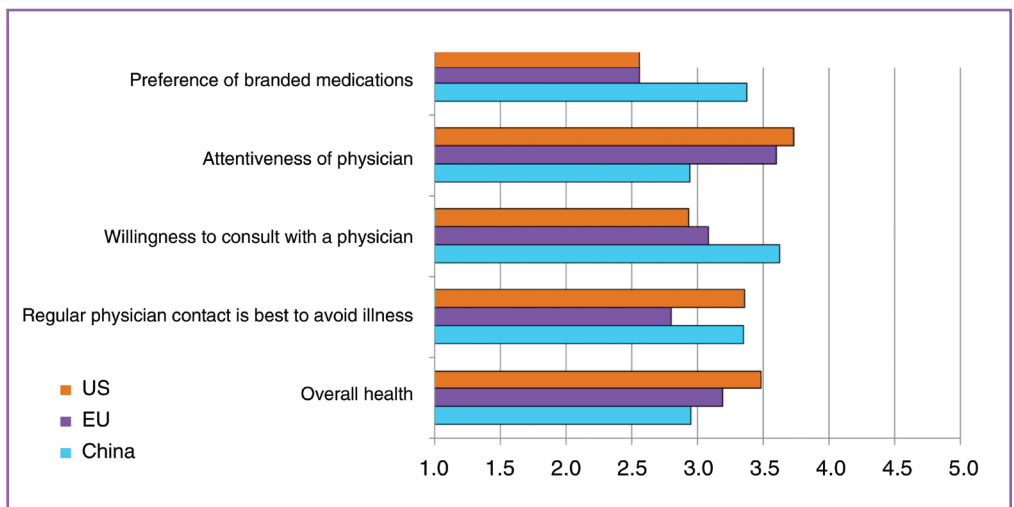


Fig 2. Characteristics and attitudes of patients in China compared with the United States and Europe.

1.0=strongly disagree, 2.0=disagree, 3.0=neither disagree nor agree, 4.0=agree, 5.0=strongly agree

Source: Kantar Health: *The National Health and Wellness Survey*. Available at www.kantarhealth.com. Accessed Oct 9, 2012. Reprinted by permission of Kantar Health.

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A Case Example of Diabetes

The attitude and characteristic differences of patients in China compared with the West suggest significant unmet needs on a population level. This is further illustrated using a case study of diabetes.

The International Diabetes Federation (IDF) estimates that the prevalence of diabetes in China will increase from 9.29% to 12.10% (an increase of 2.80%) by 2030.³ Despite such large numbers of patients with diabetes in China, an overwhelming number of them are unaware that they have the condition. Using data from the China 2010 NHWS (n=19,954), a mere 3.05% of patients reported having been diagnosed with type 2 diabetes, suggesting only a third of patients (even in urban areas of the country) with diabetes are given a diagnosis. This is consistent with other studies that also have shown only a third of patients with diabetes actually receive a diagnosis.^{4,5}

Despite the general similarities in diabetes prevalence in the United States and China (10.9% and 9.3%, respectively) and anticipated prevalence changes, the characteristics of patients in the two countries can be quite distinct. For example, research has suggested strong links between hypertension, obesity, and diabetes. Indeed, patients with diabetes who have these comorbidities are often referred to as “complicated” diabetes patients given the additional challenge of their disease management and their increased risk for both microvascular and macrovascular complications. The frequency of patients with diabetes being “complicated” differs dramatically between China and the United States.⁶

Based on NHWS data, nearly half of all patients in the United States with type 2 diabetes concomitantly reported being hypertensive, and are also obese based on their body mass index (BMI). Only 14% of patients with type 2 diabetes were neither hypertensive nor obese. The pattern is dramatically different in urban China. Analyses of the urban China NHWS data revealed that only 8% of patients with type 2 diabetes are both hypertensive and obese (using the lower BMI standard for obesity for Asian populations as recommended by the World Health Organization).⁷ Over half were neither hypertensive nor obese.

Nevertheless, patients with these additional comorbidities in urban China reported significantly more healthcare resource use events than those without the comorbidities (Fig 3), a pattern that was not observed in the United States.^{6,8}

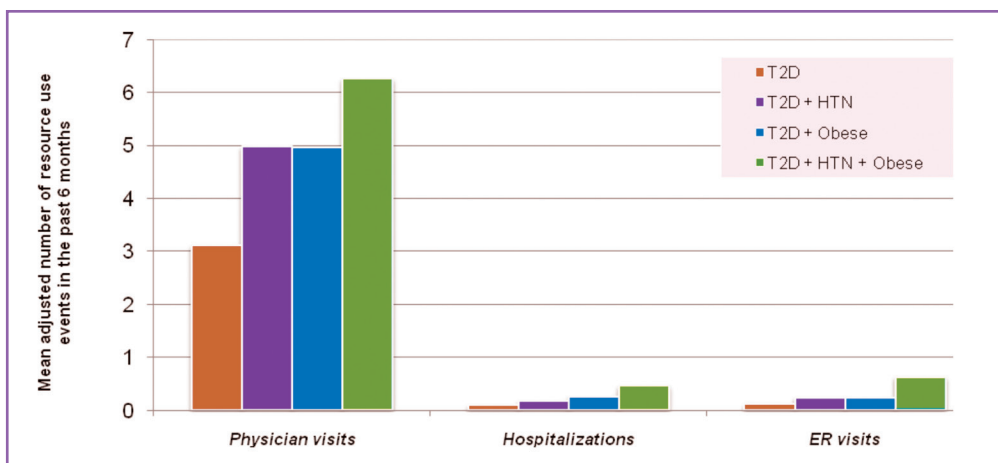


Fig 3. Healthcare resource use burden of patients with type 2 diabetes in urban China, categorized by comorbidity.

T2D=type 2 diabetes, HTN=hypertension, ER=emergency room

Sources: DiBonaventura M. *The Burden of the Complicated Type 2 Diabetes Patient in China*. Available at <http://www.kantarhealth.com/docs/white-papers/burden-complicated-type-2-diabetes-china.pdf?sfvrsn=12>. Accessed Oct 9, 2012.

DiBonaventura MD, Krishnarajah G, Pollack M, et al. *The combined effects of obesity and hypertension on the quality of life, work productivity and activity impairment of type 2 diabetes patients*. The Obesity Society 28th Annual Scientific Meeting, October 2010: San Diego, CA. Reprinted by permission of Kantar Health.

Health Economic and Observational Research Challenges in China

With the unmet needs in urban China from a population and disease level, and the anticipated need for more data to inform healthcare decision making, the importance of health economic and observational research is likely to grow. Yet, there are significant obstacles to executing such research in China.

First, there are several challenges with the initial set-up of this research. Many hospitals do not have electronic patient records and, where they do exist, different systems are used in different hospitals. Although the healthcare reforms do state that electronic records are a requirement, the timeline for this implementation is unclear. To complicate matters further, the actual contact point (the managing physician) is less clear in China than in Western countries, as there is more variability in who manages the patient. Additionally, many patients take their records with them after a consultation, and the hospitals and offices do not always

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have duplicates. All of this makes health economic and observational research that includes retrospective data from, for instance, patient charts particularly challenging.

There are also considerable challenges getting the involvement of physicians in this research. Although in some countries, only doctor- or hospital-level approval is needed for a doctor to participate in an observational study, regional approvals may be necessary in China. Because of its hierarchical structure, the involvement of the Head of Department may be necessary for others to cooperate. Once physicians are involved, the issue of remuneration can be complex. Such payment can be perceived as a bribe, so particular care should be taken not to over-incentivize. Indeed, many physicians in China are looking to develop academic credentials, and getting them involved in subsequent publications may be a stronger motivator than financial remuneration.

Once a project is initiated, managing sites in China can be difficult. With the lack of electronic data collection capabilities, many sites will need to use paper, which can add complexity to the operational aspects of data collection. Because of firewall issues that can prevent direct e-mail communication with doctors, on-the-ground oversight of any local operations is imperative. This is particularly important given the cultural reluctance to admit lack of understanding, which can render virtual training sessions for sites much less effective.

Summary

China is a dynamic country with substantial healthcare reforms underway. Given the disconnect between the preferences of patients (such as attentive physicians) and the healthcare reality, it is hoped that these healthcare reforms will bridge this gap. Yet, this disconnect extends beyond mere patient preferences. At both a population level and within specific disease groups (such as people with diabetes), patients report worse outcomes than their counterparts in the West.

As access improves and new treatments find their way to a growing number of patients to address these unmet needs, greater evidence will be needed on the value of healthcare products and services. Thus, health economic and observational data will become increasingly important. Yet significant challenges exist in obtaining such data in China, and further work is needed to educate physicians and administrators on the merits of these types of studies, as well as the need to put in place effective processes to allow these data to be collected.



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