Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Editorial

A Tale of Two Systems: Health Reform in China and the United States

Nathan G. Congdon, MD, MPH - *Guangzhou, People's Republic of China*
Tin Aung, FRCS, PhD - *Singapore*

The 9-province survey of Zhao et al,[1] provides new evidence of the burden of vision disability facing rural China. The prevalence of presenting blindness among persons 50 years of age and older exceeds 2%, while 1 in 10 persons are visually impaired. Mild impairment, in the range of 20/40 to 20/63, is of increasing importance in an age when the ability to drive and read a computer screen are requirements of day-to-day life for many Chinese citizens; more than a quarter of persons in the economic vanguard Guangdong province suffer from such impairment. Women and those without formal education are at the highest risk for all levels of visual disability.[1]

A major underlying reason for high rates of blindness in China is likely the low cataract surgical rate (CSR), estimated at 460/million/year in 2004.[2] This is among the lowest in East Asia, and roughly 1/10 of the rate in neighboring India. Reasons for this low surgical output have included the disincentive of poor outcomes, particularly in rural areas,[3,4] lack of knowledge about cataract among patients,[5] and unaffordable prices, despite a demonstrated willingness to pay modest amounts for surgery even among rural-dwellers in poor areas.[6]

Like the United States, China has recently embarked on major efforts to reform its healthcare system, and as with the US, much of this reform has been aimed at reducing the proportion of citizens without health insurance. China's New Cooperative Medical Scheme (NCMS)[7] was launched in the wake of the 2003 Severe Acute Respiratory Syndrome (SARS) epidemic to replace the old Cooperative Medical Scheme (CMS), abandoned in the early 1980s as part of Deng Xiaoping's economic reforms. The NCMS system now covers more than 90% of rural citizens, paying 40%-70% of the cost of cataract surgery, for example.

As with the American Medicare system in the 1960s, NCMS promises to introduce a significant new revenue stream for doctors and hospitals. The impact on eye care in China is already highly visible: the growth of private, for-profit chains such as Ai'Er (http://www.aierchina.com/en/Index.htm) and Bright Eyes (http://www.purui.cn) has accelerated. Competition has improved the service level at public hospitals as well. Routine eye examinations are available at most clinics 7 days per week, all year round. Investment in new technology has provided many hospitals even in mid-sized Chinese cities with electronic medical record systems, for example, that would put many of the top centers in the United States to shame. Urban-rural partnerships and cataract outreach screening programs are burgeoning, motivated by the higher rates of reimbursement obtained from NCMS when cataract surgeries are performed locally at county hospitals rather than tertiary centers. Tiered pricing is the rule, with cataract surgeries priced from US $100 to more than $500 even at rural centers, depending on the type of intraocular lens and surgical approach. The availability of NCMS reimbursements has allowed prices to rise while reducing the out-of-pocket cost to patients.

The activities of the Chinese government in eye care have not been limited to improving the insurance landscape. The ambitious Million Cataract Surgeries for the Poor program plans 1 million free surgeries nationwide over the next 3 years, concentrated on poor, rural areas. Government-affiliated organizations such as the Disabled People's Federation are active in nearly every county nationwide, partnering with local providers to carry out large-scale cataract screening activities and free or low-cost surgery. In many cases (though not all), hospitals receive payments of roughly $100 per operation for providing surgeries free of charge in these government programs.

Although all of these activities seem likely to boost China's CSR, and to ameliorate some of the burden of poor vision highlighted in Zhao's article,[1] deep-set institutional problems remain with vision care in China. A major reason for the slow dissemination of surgical knowledge in China (only some half of China's ophthalmologists perform surgery[8]) is the fact that residents and young doctors are rarely given any chance to learn surgery, spending much of their time preparing needlessly detailed charts that may balloon to 50 pages for a routine cataract extraction. Organized ophthalmology and the national government need to promulgate national qualification examinations and standards for training, and hold doctors and hospitals to them. Drawing a lesson from the pages of American medical history, China's training programs need the kind of wholesale house-cleaning precipitated in the United States during the early 20th century by the Flexner Report.[9]

Other systemic inefficiencies remain: most Chinese patients will spend 2 to 4 days in the hospital for a routine cataract operation, and a decade after studies questioned the value of routine preoperative medical testing in the US,[10] virtually all Chinese cataract patients undergo an electrocardiogram, chest x-ray, and laboratory examinations including hepatitis and human immunodeficiency virus testing. While important differences exist between the US and China (high prevalence of hepatitis B, the need for some rural patients to travel long distances for surgery), the preponderance of available data suggests that a practice of universal admission and extensive preoperative laboratory testing for cataract surgical patients is unlikely to be beneficial. Given the potential for substantial cost savings, these policies, which are driven largely by insurance requirements, should either be reconsidered or ideally subjected to careful study.

ISSN 0161-6420/10/$–see front matter
doi:10.1016/j.ophtha.2010.01.025

Lifeline Express (http://www.lifeline-express.com/index.html, accessed on October 15, 2009) and other local and international non-governmental organizations bring in surgeons from urban centers to carry out "campaigns" of free cataract surgery in poor rural areas, often offering little economic benefit or even training to local surgeons, while undercutting the sustainability of local services. Non-governmental organizations and the Chinese government need to limit free surgery to those few areas where patients are truly unable to pay, and to involve local rural surgeons in all programs.

Finally, as China's population continues to age, the government must grapple with the same demographic realities now faced by Washington. By 2050, China's population older than 80 years of age will increase to 83 million,[11] raising significant financial challenges to the long-term sustainability of activities such as the Million Cataract Project, and even such critical programs as NCMS.

Nonetheless, as Americans contend with the thorny problem of reforming our own healthcare system, we have much to learn from Beijing's recent successes in providing insurance to the vast majority of China's much-larger population.

References

1. Zhao J, Ellwein LB, Cui H, et al. Prevalence of vision impairment in older adults in rural China: the China nine-province survey. Ophthalmology 2009;117:409–16.
2. CDPF. Statistics yearbook on the undertakings of people with disabilities in China. Beijing, 2005;3–99.
3. Li S, Xu J, He M, et al. A survey of blindness and cataract surgery in Doumen County, China. Ophthalmology 1999;106:1602–8.
4. Zhao J, Sui R, Jia L, et al. Visual acuity and quality of life outcomes in patients with cataract in Shunyi County, China. Am J Ophthalmol 1998;126:515–23.
5. Yin Q, Hu A, Liang Y, et al. A two-site, population-based study of barriers to cataract surgery in rural China. Invest Ophthalmol Vis Sci 2009;50:1069–75.
6. He M, Chan V, Baruwa E, et al. Willingness to pay for cataract surgery in rural Southern China. Ophthalmology 2007;114:411–6.
7. Yip W, Hsiao WC. The Chinese health system at a crossroads. Health Aff (Millwood) 2008;27:460–8.
8. Lin Y. Prevention of blindness: Priorities in China. Medical Progress 2000;27:12–8.
9. Cooke M, Irby DM, Sullivan W, Ludmerer KM. American medical education 100 years after the Flexner report. N Engl J Med 2006;355:1339–44.
10. Schein OD, Katz J, Bass EB, et al. The value of routine preoperative medical testing before cataract surgery. Study of Medical Testing for Cataract Surgery. N Engl J Med 2000;342:168–75.
11. National Population and Family Planning Commission of China. Available at: http://www.npfpc.gov.cn/en/detail.aspx?articleid=090609162124888037. Accessed November 23, 2009.