Author's response to reviews

Title: Variation of cataract surgery costs in four different graded providers of China

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Author's response to reviews: see over
Dear Robin:

Thank you very much for your letter dated 17th June 2010, and the referees’ comments. We have carefully evaluated the reviewers’ critical comments and thoughtful suggestions, responded to these suggestions point-by-point, and revised the manuscript accordingly. All changes made to the text are in red so that they may be easily identified. With regard to the reviewers’ comments and suggestions, we wish to reply as follows:

To reviewer # 1

1. A little more background on CSRs in the context of developing and developed countries would be helpful.

   We added the content of CSRs of developing and developed countries to the section of Background. The cataract surgery rate (CSR, the number of cataract operations performed per million populations per year) is about 5700 in the United States[1], but only about 3000 in semi-industrialized countries such as India, and as low as 200 in some Third World countries[2-3]. However, the CSR may vary between provinces in China, such as 1197 in Beijing, 1548 in Shanghai, 953 in Tibet, 608 in Qinghai; but only 196 in Guizhou, 216 in Chongqing[4].

2. Introduce by way of discussion the range of costs for cataract surgery around the world, and how these costs relate to surgeries performed in the private and public sector, so readers get a sense of costs. Amongst others, a good recently developed source of cost data is the article by Lansingh & Carter (Lansingh VC, Carter MJ. Arch Ophthalmol 2009;127:1183-93.).

   We introduced the various costs of cataract surgery around the world in the section of Background. Average costs incurred by cataract surgery alone in the United Kingdom were about US$620 in 2004 dollars, but another research demonstrated that the cost is US$3461, approximately 5.6 times of the former one[5]. In 2005, the mean total costs per cataract intervention from nine European countries(Denmark, England, France, Germany, Hungary, Italy, the Netherlands, Poland, and Spain) were €714 , ranging from €318 to €1087(€1=US$1.18 for 2005)[6]. Cataract surgery is considerably less expensive in Europe than in the United States with the mean cost of surgery totaled US$2525[7-8].

   We have cited the article by Lansingh Carter in the section of Background, which is valuable.

3. The word “graded” as in “graded eye clinics” needs to be changed as it does not make sense.
We have changed “graded eye clinics” to “graded providers”.

4. Is the JCH located in a small city or a very rural area? It would be useful to categorize the catchment area as “rural” “urban” or “mixed” and insert this data in Table 1 under number of patients from rural region.

JCH located Jingshan County, which is a typical agricultural county in Hubei with a total population of 640,000, 69% were farmers.

5. There needs to be some detail on how costs were obtained.

Costs were based on hospital finance department data.

6. I would suggest breaking down costs as follows: cost of lens; cost of drugs; facility cost (facility charges, which include overheads, personnel costs, including nurses and physicians, cost of operating theater, etc.). In the case of JCH, the cost of physician and his or her equipment charges can go under facility costs. It is also really important to include the cost of 1 preoperative and 1 postoperative visit to be inclusive of total cataract surgery costs. An average of estimate for these items would be better than including no estimate at all.

We divided the costs to three sections according to reviewer’s suggestions and added the costs of 1 preoperative and 1 postoperative visit to the total cost.

7. The URL of the web site(s) of the National and Provincial Bureau of Statistics from which disposable annual incomes was obtained should be included as well as the date it was consulted.


8. State the date (year) in which costs were calculated.

The average cost of a cataract extraction at each clinic during the month of November 2009 was studied.

9. Define “seldom” in the context that ECCE is used. 1%? 5%? More?
The proportion of ECCE in these clinics was less than 2 percent.

10. “What’s more, ZOC conducted surgery alone.” This is not really relevant as only 6/1108 patients had outpatient surgery.
   We deleted the data on outpatient surgery.

11. “Patients paid for equipment depreciation and service charges.” This needs much more explanation.
   Cost for equipment depreciation and service charges means consultation fee. The average consultation fee for each patient was 309US$, which accounted for about 58% of the overall cost.

12. “vein infusion.” Do the authors mean intravenous infusion? Why were antibiotics given this way? Usual practice is to give them orally/topically.
   In my article, vein infusion does mean intravenous infusion. Cataract surgeries in UH and FJH were performed via corneal limbal incision, and Patients had been given antibiotics once a day after operation for 3 to 7 days, because of fear for infection. While a clear corneal incision was used in the other two hospitals.

13. Need to explain to the reader the concept of reimbursement ratio for patients. How many patients at each hospital were insured? If they were insured, did the insurance cover all costs? Did the cost of the surgery vary according to whether the patient had insurance? If the patient had insurance, did he or she have to pay first, and then was “reimbursed” by the insurance company? (Readers are not likely to be familiar with Chinese medical insurance systems.)
   The number of patients with reimbursement was 766(74%) in ZOC, 28(36%) in UH, 30(67%) in FHJ and 25(69%) in JCH. Not all patients received reimbursement. The patients had to pay first, and then were “reimbursed” by the insurance company or new rural cooperative medical scheme. In ZOC, the mean reimbursement ratio (reimbursement/cost) was approximately 71%, ranging from 40% to 95%. The cost of the surgery didn’t vary according to whether the patient had insurance.

14. Discuss the findings of the study in comparison with other studies or papers in which costs of cataract surgery in China are mentioned.
   The most common cost of cataract surgery in China from 2001 to 2004 is US$312 — 999 per eye[4]

15. Can the use of multifocal lenses be justified? Why were domestically produced lenses not used?
Costs of multi-focal intraocular lens or adjustable intraocular lens were more than 1,100 US$, which were too expensive to be reimbursed; thereby most patients chose single focus intraocular lens. Patients didn’t use domestically produced lenses because they thought that the quality of imported lens was better than domestic lenses.

16. Why were patients staying a week or more in some hospitals? What are the barriers to introducing outpatient surgery in these and other hospitals in China? If this practice were adopted, how would it affect costs?

Cataract surgeries in some hospitals were performed via corneal limbal incision, and Patients stayed one week or more because of fear for complications.

17. Toward the end of the Discussion, discuss what could be done in China to bring improve infrastructure for cataract surgery and bring costs down.

Most of Chinese elderly population is rural-dwelling and cataract is the leading cause of blindness and low vision in this group. Approximately 66% of the cataract operations were conducted in county hospitals with limited eye care services and 34% in specialized and provincial center [9]. Because of the low benefit level and low reimbursement rate, patients had to face a very high financial burden even after New Rural Cooperative Medical Scheme reimbursement[10]. Moreover, the shortage of cataract care specialists in county hospitals is also a barrier for many people who need cataract surgery. Consequently, efforts should be made to increase the financing of health care and to train qualified surgeons for county hospitals.

18. At the end of the Discussion, summarize the strengths and weaknesses of the study.

We have summarized the strengths and weaknesses at the end of the Discussion. The data from four different graded providers were provided in the results, which were of potential use to blindness prevention programs. However, there was no a statistical point of view in our report, and the selected four places could not fully represent the status of other areas in China. Further work is needed to explore the cost-effectiveness of cataract surgery in different graded provided in China.

19. Axes on all graphs need labels. For example, in Figure 2, X axis needs “Hospital” and explanation of the abbreviation of the hospitals (e.g., ZOC), and Y axis should state “Cost of cataract surgery ($U.S.).”

We have modified the labels of graphs according to the requests.
1. A literature review should be made and used in the introduction chapter and, in more detail, in the Discussion. This review, in the introduction, would give some evidence on the relationship between costs and costs coverage of eye therapy (and cataract surgery in particular, if possible) and national, regional and/or social disparities in treatment usage; it would also give examples of how this topic has been explored by different authors, as a way to justify the methodological approach chosen in this work. In the discussion section, the literature review would back or help to interpret the findings of the authors in view of strengthening their call “for more financial support (to) the New Rural Cooperative Medical Schemes to raise the ratio of reimbursement”.

We added the relevant content of developing and developed countries to the section of Background and Discussion. In the discussion section, we explained the content of New Rural Cooperative Medical Schemes as following:

China is a developing country with the majority of its population residing in rural areas, but the relatively poor economic condition in rural areas is a major issue influencing the feasibility of performing cataract surgeries [9]. China had developed a successful health insurance system (Cooperative Medical Scheme, CMS) in the rural areas since the 1950s. Unfortunately, CMS collapsed during the shift towards a market economy at the end of the 1970s[10]. The New Cooperative Medical Scheme (NCMS) is a ‘voluntary’ and heavily subsidized program established in 2003 to reduce the risk of catastrophic health spending for rural residents in China[11-13]. The scheme coverage was 95.9% in Shandong and 88.0% in Ningxia in 2006[13], and 85.9% of the total rural population by the end of 2007[14]. However, the reimbursement ratio of the scheme was only around 30% of inpatient expenditure. In 2001, Helen Keller International (HKI) initiated free cataract testing and a low-price, high-quality cataract surgery programme in rural areas in south China [15]. Surgery was subsidized by HKI and priced at 66US$. A total of 80% of those surveyed stated that they were willing to pay something for surgery, but only 56% of these respondents stated a willingness to pay amount of 66US$ or more. The expensive cost for cataract surgery, compared with the rural annual income per capita, may be an important contributing factor for the low CSR in rural China.

2. The Methods section is much too short and should give more detail on the sources of data used to assess the different surgery and associated costs and to ensure their comparability.

Charges were based on hospital finance department data. In addition to the costs for one episode of cataract surgery, each provider was asked to provide information on the reimbursement fees they received for performing the service.
3. The cases of outpatient surgery should not be included in the study since they are found only in one clinic; the numbers are very low anyhow.

We deleted the data on outpatient surgery.

4. That the incomes estimates of clinics’ patients are not personal but are average values drawn from statistics per province and urban or rural location of residence should be clearly stated. It is implicit in the results section.

We added the URL of the web site(s) of the National and Provincial Bureau of Statistics from which disposable annual incomes as well as the date it was consulted( Data from Guangdong province available from www.gdstats.gov.cn/tjgb/t20100225_74438.htm; Hubei province available from www.stats-hb.gov.cn/structure/xxgk/tjgb/qstjgbzw_185369_1.htm; Jingzhou city available from www.stats-hbjz.gov.cn/Html/tongjigongbao/1131 41335_4.html; Jingshan County available from www.jingshan.gov.cn/article/2010/0120/article_8100.html; Accessed on 5 July 2010).

We acknowledge the reviewer’s comments and suggestions very much, which are valuable in improving the quality of our manuscript.

Thank you and all the reviewers for the kind advice.

Best Regards.

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References


