Commentary on ‘Inpatient costs of congenital heart surgery in China: results from the National Centre for Cardiovascular Diseases’

A congenital heart disease (CHD) is a gross structural abnormality of the heart and/or the large intra-thoracic blood vessels which develops during pregnancy. It is the most prevalent congenital condition with globally nine in every thousand babies who are born with a mild or more severe cardiac lesion. The highest birth prevalence rates have been reported in Asia.1 Nowadays life expectancy of patients with CHD is still substantially lower compared to the general population, but important progress following medical-technological evolution and improved healthcare organization has been made over the past decades, resulting in a rapidly growing patient population with often life-long care needs.2

In The Lancet Regional Health – Western Pacific, He and colleagues report inpatient costs of congenital heart surgery in China.3 Such data have only been available from high-income countries while data from low-to-middle income countries remained omitted. He et al.’s4 paper is a strong contribution towards understanding how necessary, life-saving CHD surgery comes with high financial burden. Its importance can hardly be disputed as the patient population with CHD will continue to grow in the future, with major consequences on available resources, especially given He et al.’s5 observation that median total hospitalization costs have been increasing with 4% per year. This is more or less in line with previous European research showing an annual 3.2% increase of hospitalization costs in adults with CHD, even after adjusting for inflation.6 One explanation for the 0.8% faster increase is that CHD care in China is slowly catching up with CHD care elsewhere in the world after a historical backlog.

Translating illnesses and how these illnesses are treated into monetary terms is crucial since it is ultimately the language policy makers do understand. Cost-of-illness descriptions, such as He et al.,1 have the power to identify and define current and future healthcare problems, a necessary step towards evidence-based program and policy development to improve clinical quality in a cost-efficient way. Moreover, these are crucial data to enable cost-effectiveness analyses to compare the value for money of different interventions. It can be argued that the obtained cost data can be used in Chinese cost-effectiveness analyses, since He et al.3 included no less than 6568 hospitalizations from all over China (except for 3 out of 34 provinces).3 Moreover, although cautiousness is strongly advised here, these data might be internationally usable for cost-effectiveness analyses as long as the CHD disease pattern in the target country is similar to the CHD disease pattern as observed in China. European evidence suggest that countries with similar disease patterns have similar cost-of-illness patterns despite existing health system differences.5

One strength of He et al. is the reporting of data with high detail. All costs were for instance classified into 11 categories, providing insight in hospitalization cost drivers. Expenditures for consumables incurred in medical procedures, including disposables during hospitalization and surgery (e.g., injector, surgical suture, dressing disposables, valve) appeared to be the key driver, representing approximately 27% of total costs.3 Moreover, results were stratified according to STAT surgery risk, admission year, CHD severity, and age category. Highest total costs were found in pediatric patients aged one month or younger, followed by adult patients. This reflects the fact that many patients with a complex CHD requires surgery early in life to have good clinical prospects5 and they often need additional re-operation in adulthood as a result of cardiac residua or recurrent lesions.7 In that regard, the authors explicitly call for an integrated, collaborative, and multidisciplinary program to obtain better outcomes although they also point to the inevitable higher cost (at least, on the short-term) that comes with such an approach.7

It must be noted that He et al. reported costs from a health system perspective,1 excluding patient contributions. The authors reported that medical insurance policies in China can vary from region to region with reimbursement rates ranging from 50% to 70%. Given that hospitalizations for CHD operations are often very expensive, additional (Asian) health economic research...
should capture patient expenditures as well. It will be interesting to investigate how these different reimbursement systems do influence healthcare seeking behaviour and what the impact is on patients’ health on the short-, medium-, and long-term.

Lastly, future health economic research should also try to include outpatient costs. Many adults with CHD require lifelong, periodic cardiac follow-up because of their increased morbidity and mortality risk. Health economic studies can help in organizing the care of CHD patients with chronic care needs, such as has recently been demonstrated in Europe: different follow-up care strategies have been associated with long-term medical cost and resource use, providing invaluable information towards the development of efficient treatment strategies.

Declaration of interests
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References