Limits to International Estimates of Stroke Costs

Ronald B. Low, MD, MS; Adnan I. Qureshi, MD; David C. Low, MS

See related article, pages 661–666.

Lundstrom et al show a marked increase in cost of caring for patients with stroke with spasticity compared with the cost of caring for patients with stroke without spasticity.1 This is an important contribution to our understanding of stroke and its costs. If a reader attempts to generalize Lundstrom et al’s findings to other countries, we see 2 important limitations that are not clear in their article: treatment of spasticity and using Purchasing Power Parities (PPPs) to estimate costs in other countries.

First, the spastic patients in their study were not treated pharmacologically for spasticity. Their patients were not treated with botulism toxin (Botox) or even dantrolene, baclofen, or benzodiazepines. Had the spasticity been treated, the costs might have been lower.

Second, Lundstrom projects the costs to countries outside of Sweden by converting costs in Swedish Krona to adjusted costs in other countries, in their currency, by multiplying Swedish costs by a PPP multiplier (Lundstrom et al’s supplemental Table I). PPP is used by economists to adjust for cost of living. We would not need PPP if most word trade involved easily (relatively cheaply) transported, nonperishable items such as cameras or CT scanners; the cost of an expensive SLR camera in Stockholm will be pretty close to the cost of the same camera bought in New York after converting the currency from dollars to Krona. Many costs of daily living are more perishable and less easily transported: buying a meal, renting an apartment, getting medical care, or having hair cut. To adjust for cost of living in different parts of the world, economists in different regions buy a market basket of food, shelter, a haircut, and other common purchases needed for living. Healthcare costs are a very small part of this PPP market basket. From the costs of items in this market basket, economists calculate PPP. With tongue partly in cheek, economists sometimes use an even simpler index that looks only at purchasing food: the “Big Mac Index,” a “market basket” of one item, a McDonald’s Big Mac.2

Health expenses track differently from the overall cost of the PPP market basket. Comparatively, a Big Mac is reasonably priced in the United States and Canada; health care is expensive. We have reproduced data from supplemental Table I of their article for 6 countries. We have added 4 new columns: exchange rate, Big Mac Index,2 and stroke (spastic and not) costs converted back to dollars. The Big Mac Index is the cost, in US dollars, of a Big Mac in that country. Additionally, for each adjusted stroke cost in local currency, we converted those costs to US dollars. To calculate stroke costs in dollars, we used the exchange rate on January 30, 2009, taken from the same article in The Economist that reported the Big Mac Index.2 We note that although the methods of calculating costs differ, the stroke costs for Denmark projected by Lundstrom seem higher than costs actually measured recently ($12 150/patient in direct costs for all strokes).3 Denmark’s economy resembles Sweden’s in many ways; we would anticipate even greater disparity between real costs and those modeled on supplemental Table I for the United States and other countries with medical economies that differ more markedly from Sweden’s. Because of the PPP conversion, Lundstrom’s supplemental Table I suggests that stroke care costs in the United States and Canada are relatively inexpensive, whereas we know that those 2 countries actually have comparatively high healthcare costs. If we used exchange rates from late 2009, which reflect the recent devaluation of the US dollar, there would be an even greater disparity between real costs for caring for strokes in the United States and the costs projected by Lundstrom’s method.

International comparison of healthcare costs is desirable; a tool for adjusting by cost of living would be helpful. Using PPP to adjust healthcare costs does not seem helpful. Pharmacological treatment of spasticity might be beneficial for many reasons.

Disclosures

None.

References


Key Words: costs | spasticity | stroke care | stroke recovery | treatment
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