Reviewer's report

Title: Analysis of prices paid by low-income countries - how price sensitive is government demand for medicines?

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Reviewer: Suthira Taychakhoonavudh

Reviewer's report:

This study analyzes the demand for medicines in the low-income countries using Ramsey pricing rule. Analysis of demand for pharmaceutical product is hard in low-income countries where data is not available. The study use back-calculation approach to get the demand responsiveness of the medicine which can serve as an exploratory research for the study on the demand for medicine.

Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached)

The part I concern about this manuscript is the methods. The authors explain very well the Ramsey theory in the background section. However, these are some concerns I have about the assumptions that were made in this study.

1. The authors indicate that they use the price of the relevant generic drug in the market as the proxy for the marginal cost of the drugs. They also accept as true that these branded drugs were off-patent (p.1, third paragraph) If this is the case, I'm more inclined to believe that the price elasticities calculated in this study are price elasticities for the branded drugs when there's a generic available in the market instead of that particular medicine itself. The condition of the market is different when there's a generic available in the market and government has substitutions for the branded drugs in the market. Thus, demand responsiveness should also be different when there's only one supplier in the market compare to multiple suppliers. It's not surprising that the study found that low-income countries are elastically responsive to changes in the price of medicines since there're generic substitutions and change in price of the branded drugs could drive government to purchase generic drugs instead of branded drugs.

2. If the elasticities calculated from this study are price elasticities for the branded drugs when there's a generic available in the market, then the conclusion that were drawn from this study about the market access restrictions to new products faces by low-income countries are much weaker.

3. In p.13, the authors indicate that some of the observations were dropped in the cases when the branded price was below the generic price and when the branded price and generic price were relatively similar. I believe that this is also an explanation of how the company reacts when there's generic available in the market and prices of the branded drugs and generic drugs are pretty similar or even lower.
Minor essential revisions includes the use of term” molecule level”. I’m not sure does the author mean the analysis was done at the “generic name” level. Please clarify. In p.14, the correlation between income and price was reported. However, the only the magnitude of the correlation was reported but not the significance level.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

'I declare that I have no competing interests'