Reviewer's report

Title: Are vaccination programmes delivered by lay health workers cost-effective? A systematic review

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Reviewer: Stephen Jan

Reviewer's report:

The paper provides a timely systematic review of the economic evaluation literature on the cost-effectiveness of lay health workers in delivering vaccination programs. It comes in the wake of an earlier Cochrane review by Lewin and colleagues on the effectiveness of such programs. I believe the paper addresses an important global health issue given that the ability to achieve the MDGs in coming years will be heavily dependent on establishing an evidence base around affordable and cost-effective primary health care strategies.

The rationale for a systematic review of this type is fairly clear. The methods used in the paper are standard and the authors have gone to considerable lengths in their trawl of all the available literature – as evident in Appendix 1. However, it is a little surprising that they have ended with so few studies meeting the inclusion criteria – but ultimately that is the nature of such reviews where such criteria are pre-specified.

The paper is generally well written and the discussion of findings generally based on well reasoned arguments. One of the main conclusions from the study is that future research in this area needs to take into account the institutional characteristics in which the programs are delivered. They provide a convincing case for such consideration in the area of vaccine cost-effectiveness since the costs of such services are heavily reliant on the broader health care context in which they are delivered. Given such context specificity, it follows that cost-effectiveness results need to be presented alongside other sources of evidence to ensure that they are not inappropriately generalised to other settings. I wonder whether the authors could be a bit more systematic in identifying these issues that limit the generalisability of results since this is a crucial point - generalisability is essentially what readers are looking for drawing on the findings of systematic reviews. The factors that could be considered are variations in context (including comparator, cost structures), methodology, perspective and intervention design.

On page 17 the paper discusses some of the ‘technical’ characteristics of the studies. I think this would be better labelled ‘methodological characteristics’ and could be broadened to discuss more specifically the type of costs included e.g. were cost offsets such as reduced hospitalisations from reduced number of cases factored in? To what extent were other health system costs included? (In other words how incremental was the analysis?) How was effectiveness valued?
One of the CEAs estimated life years saved and another estimated QALYs but no detail was given as to how they were estimated. Were the studies done alongside clinical trials or were they modelled costs-effectiveness analyses?

Conversely summaries of the studies and their findings on pages 10-14 could probably be shifted into an appendix.

Overall I think the study provides a potentially valuable synthesis of the evidence in this area but could be improved with some re-writes addressing the issues highlighted above.

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare no competing interests