Reviewer's report

Title: Pre-hospital ECG for acute coronary syndrome in urban India: A cost-effectiveness analysis

Version: 1 Date: 15 July 2009

Reviewer: Andrew Moran

Reviewer's report:

The manuscript by Schulman-Marcus et al. is a thorough and well-written analysis of a practical country-specific approach to improving acute ACS outcomes in urban India. The main innovation of this analysis is that it responds to the specifics of the healthcare system in India, rather than applying standardized guidelines from another country. The analysis relies on India-specific data whenever possible, but is also substantiated by a rich international literature regarding diagnostic decision-making and clinical interventions for ACS.

Major Compulsory Revisions

None.

Minor Essential Revisions

More detail is needed in the Limitations section on the limitations of not stratifying the analysis by age and sex categories. The authors need to mention male/female differences in ACS. Average age of presentation and case-fatality are higher in female compared with male ACS patients. While the authors state the limitation of not modeling a wider age range, they maintain that they mirrored some of the effect of age by varying the prevalence of MI/ACS among chest pain patients. There are effects of age on risk from thrombolysis, case-fatality, non-ischemic ECG abnormalities, hospitalization costs, survival, and life-expectancy that are not considered. The main results of this analysis are robust enough that it is appropriate that these issues can be addressed within the limitations section.

The difference in QALY gained between the two strategies is small despite the presumed mortality benefit of increasing thrombolysis in the ECG strategy. The source of the difference and lack of difference in QALY needs more exploration—specifically, is the small QALY benefit of the ECG strategy due to more STEMI patients in the ECG arm receiving thrombolysis, improved overall case-fatality in the ECG arm because more ACS patients are hospitalized, or improved survival due to more longer term secondary prevention in the ECG
arm? Comparison of the incremental QALY accrued from each of the components mentioned would better clarify the source of benefit and lack of benefit from ECG along a complex set of outcome pathways.

Discretionary Revisions

1. The size of the cohort (N) modeled should be mentioned
2. The “cycles” of the model—I assume annual cycles—should be specified
3. QALY “gained” reported for both main strategies (with/without ECG). What is the comparator for the gain for each strategy? Is it no GP visit?

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 that I have no competing interests.