Reviewer's report

Title: Clinical benefit of point-of-care testing for acute coronary syndromes, heart failure and thromboembolic events in primary care: a cluster-randomised controlled trial.

Version: 1 Date: 28 May 2010

Reviewer: James Nichols

Reviewer's report:

The manuscript titled, "Clinical benefit of POCT for acute coronary syndromes, heart failure and thromboembolic events in primary care: a cluster-randomised controlled trial" describes a study comparing the diagnostic effectiveness of POCT for cardiac biomarkers compared to a working diagnosis.

Major compulsory revisions:

1) The study should have included traditional biomarkers and other tests from a clinical laboratory (even though remote from the clinic) as part of the working diagnosis rather than just history, symptoms and physical findings. By providing POCT in the working diagnosis, the study wasn't necessarily comparing speed of test availability (ie biomarkers in the clinic versus in a distant lab) but rather clinical judgment with and without biomarkers. As such these biomarkers have already been well studied and characterized with respect to diagnostic accuracy. This point should be made in the discussion as one potential source of bias in the study design.

2) Another issue that should be further examined is the panel of tests versus availability of single tests. The POCT provided to the clinics allowed analysis of 3 biomarkers at the same time, troponin, BNP and D-Dimer, yet the authors chose to only statistically evaluate the diagnostic efficiency of each marker separately for cardiac syndromes, CHF and thromboembolic events. What, then, was the value of performing all 3 tests as a panel on all patients. If the doctor suspected ACS, then troponin was really only necessary. This fits with the US insurance payer system where panels of tests are not reimbursed and each single test must be justified medically for reimbursement of the test cost. Since the authors performed all 3 tests on all patients, then the authors should have evaluated whether the knowledge of the other two tests increased the diagnostic accuracy of the primary test for the working diagnosis? In other words, if troponin would have predicted ACS with some degree of efficiency, did knowing that BNP or D-Dimer were positive add additional diagnostic accuracy to the working diagnosis? This should be evaluated and discussed.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable
**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.