Reviewer’s report

Title: Assessment of Inpatient Multimodal Cardiac Imaging Appropriateness at Large Academic Medical Centers

Version: 0 Date: 23 Aug 2015

Reviewer: Ricardo Fonseca

Reviewer’s report:

Thank you for giving me the opportunity to review the manuscript "Assessment of Inpatient Multimodal Cardiac Imaging Appropriateness at Large Academic Medical Centers".

This is yet another paper evaluating the AUC ratings, and conclude that the majority of tests are classifiable according to the AUC, are appropriate and cardiologists have better rate for appropriate tests. The study consists of retrospective review of nearly 533 inpatient cardiac investigations (TTE, TEE, SPECT and cardiac catheterization) at three Canadian academic hospitals. 99.8% of test were classifiable according to the latest edition of AUC for each modality, the majority (91%) were appropriate and 5% rarely appropriate. The results show that Cardiologists ordered more appropriate studies compared to Internal medicine specialists with no difference in rarely appropriate testing.

The paper clearly shows the effort that the authors put in this study. It is well written. It shows the comparison of appropriateness between two specialties in Canada. This study is important for this country due to it exposes the behavior of appropriateness in major hospitals. However I have some points to take into account:

1. More cautious wording in the Introduction regarding the growth of imaging. There has been some moderation in growth in the United States within the last few years that has often been cited in the belief that the problem of growth in imaging is "controlled".

2. The authors are using an "old" vocabulary: in 2013 the terms "inappropriate" and "uncertain" were changed with "rarely appropriate" and "may be appropriate".

3. One of the most important weakness of this study is its methodology. There was only one reviewer who scored the test according to the AUC. There is no additional information about the background of this reviewer and his knowledge/training about AUC: was the individual performing the determination of appropriateness connected to the imaging laboratory and in any way "blinded" to the hypothesis of the study? We do not know if the study is reproducible due to there is no comparison between the characterization of appropriateness by different reviewers. This raises substantial doubt about the overall integrity of this body of literature.

4. In general, this study did not add on what is already known. Although the majority of studies come from the US, there are several studies that show the appropriateness trends
in other countries and several of them have shown similar results when comparing cardiologists to internal medicine specialists and other specialties.

5. References may be updated. Some studies have been published in the second half of 2014 and during 2015.

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