Reviewer's report

Title: Implementation and first-year screening results of an ocular telehealth system for diabetic retinopathy in China

Version: 2 Date: 24 July 2011

Reviewer: Julie Lowery

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Major Compulsory Revisions

1. The authors have done a good job of addressing many of my original concerns. However, a couple remain, including one that is significant. The most significant concern is the discussion, which still does not do a very good job of comparing the findings from this study to those of other tele-retinal screening evaluations, of which there are many. The authors mention only Digiscope and Joslin, and do not provide any data from these studies for comparative purposes. If the paper is to make a contribution to health services research, then the findings from this study need to be discussed in the context of findings from other studies. Otherwise, this paper might be better suited for a clinical journal of ophthalmology.

2. The second reviewer mentioned an important point about the absence of cases without diabetic retinopathy. The authors responded by adding the statement, “The patients with ungradable images or suspected retinal images other than DR, or impaired visual acuity, were automatically referred to the ophthalmologists, so almost all of the patients with normal fundus photographs indeed do not have DR on examination using BCDRT.” I don’t understand this statement—specifically the relationship between ungradable images and patients without DR, and how the latter part of the statement equates to the goal of confirming that patients without DR on examination using BCDRT indeed do not have DR on in-person examination. However, because patients identified as normal by BCDRT were not referred to in-person examination, it is impossible to address this concern (i.e., verifying that patients with normal images indeed do not have diabetic retinopathy on examination), and this should be mentioned as a shortcoming in the discussion.

3. I am not sure I agree with the authors’ response to my suggestion to calculate sensitivity and specificity. Even though the in-person diagnoses may not be the gold standard in ophthalmology, they are definitely the gold standard for purposes of this study—as evidenced by the conclusion that the BCDRT is a “valid system for DR screening” because the BCDRT diagnoses compare favorably to the in-person diagnoses. Nevertheless, it sounds like the authors aren’t able to calculate sensitivity and specificity because of lack of data from patients whose digital images were graded as normal. Again, as noted in the preceding paragraph, this needs to be cited as a shortcoming of the study.
Minor essential revisions

4. In their responses, the authors note that one of the barriers to high annual screening rates is limited knowledge of DR by rural Chinese residents. However, this is not mentioned in the paper itself; it should be added, especially since the authors have added the statement that they “introduced the BCDRT system to the general residents via mass media at first”, presumably in an effort to address this barrier. Also, please provide more information on this media effort, as it sounds quite interesting and would be of interest to others who are attempting to improve screening rates in rural areas.

Discretionary revisions

5. It seems the statement “There were 10 patients diagnosed as PDR according to BCDRT diagnoses, 7 of whom were preretinal or vitreous hemorrhage, and the rest [remaining] 3 were retinal neovascularization”, currently at the end of the first paragraph in the results section, should be moved to the end of the second paragraph after the statement, “The ophthalmologists all agreed with the various abnormalities of PDR in 10 patients.”

6. Suggest rewording the third sentence in the last paragraph of the discussion to, “However, the number of participants in the BCDRT will no doubt increase with time, as evidenced by a high proportion of patients interested in participating in the next screening (96.82%).”

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

Quality of written English: Needs some language corrections before being published

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.