Reviewer’s report

Title: Effect of telehealth on glycaemic control among patients with type 2 diabetes: findings from the Whole Systems Demonstrator cluster randomized trial

Version: 1 Date: 21 March 2014

Reviewer: Susannah McLean

Reviewer’s report:

The authors should be pleased that they have produced what appears to be a thorough and valid assessment of the state of the art of telehealthcare for diabetes.

Minor Essential Revisions:

1. It would be helpful to have some more examples of what precisely was done as a telehealth intervention. The authors have mentioned on several occasions that the interventions were at the discretion of the local service providers, however, if these interventions are to be rolled out we need to know what was done. A supplementary file with a table with details of the interventions at different locations would be very helpful as telehealth is far from homogenous.

2. In the discussion it might be useful to mention the diabetes control and complications trial (DCCT) which suggested a minimum reduction in HbA1c of -2% in order to improve outcomes. In this context the reduction found in this study of -0.21% is unlikely to have a significant clinical impact in terms of improving outcomes.

Discretionary revisions:

1. In 2011 Liang et al studied mobile phones for diabetes self management in a meta-analysis and found a reduction in HbA1c values of a mean of -0.5%. There was some evidence that studies of longer duration demonstrated less tight control, indicating perhaps a novelty effect of the intervention that wore off with time. Perhaps the authors could comment on whether this might be a problem with their study.

2. The authors may be interested to know of other systematic reviews of telehealthcare which include glycaemic control, many of which have found only small effects (<-0.5% HbA1c) which may not be clinically relevant and several of which have found non-significant impacts. They are all cited in our 2012 PLOSone systematic overview of telehealthcare interventions, as follows: Dellifrane 2008, Hailey 2003, Jackson 2005, Liang 2011, Montani 2001, Montori 2004, Pare 2007, Polisena 2009, Ramada 2001, Tran 2008, Verhoveneven 2010 and Wu 2010. In this context we may say that there is a substantial body of evidence that telehealth is not very effective in improving HbA1c control. What is needed is more longer term trials of clinical outcomes such as amputations, blindness and cardiac events to quantify the effect on the outcomes that really matter to patients. This kind of research is increasingly feasible using routine
data techniques similar to the kind used in the authors’ paper.

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I have received an honorarium for speaking about telehealthcare. I have received funding to conduct research, systematic reviews about telehealthcare and have published this research in peer reviewed journals.