Reviewer's report

Title: A large-scale assessment of hand hygiene quality and the effectiveness of the "WHO 6-steps"

Version: 2 Date: 22 November 2012

Reviewer: Mary-Louise McLaws

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1. Your keeping one decimal place is not unusual, researchers often believe they need to demonstrate accuracy in their data (by reporting to one or two decimal places). This is particularly important when the exposure is life threatening or life saving. However, in behaviour interventions, such as yours, humans are not as reliable as drug trials. My request to remove the decimal is to assist your readers to see the big picture and to accommodate the reality that behaviour reporting is rarely as accurate as one decimal place infers. Does your use of one decimal place e.g. 72.2% (95%CI 70.8%-73.4%) really tell us anymore than 72% (95%CI 71%-73%)?

2. Your removal of 20 participants should be mentioned as a possible limitation in terms of reduces generalisability to other healthcare settings.

3. Your rationale for keeping the older HCWs in two age groups (50-59 and 60-66) to follow the format of a seminal paper (in this instance Pittet et al. 2009) only holds if you have sufficient data which you don't and where you make a comparison with the findings of the seminal paper which you haven't. You could compare your findings with Pittet et al 2009 in your discussion section for just those pass rates for the Total 50-59 and 60+ but not by profession or you could merge 50-59 with 60+. If you look at the total pass rates for the total 50-59 and 60+ there is no significant difference in pass rate by sex which assists the logic of aggregating the two groups (that 50-59 are just as experienced and just as easy/difficult to train as 60+). You need to do one (aggregate) or the other (compare with the seminal paper).