Reviewer's report

Title: Trends in access to water supply and sanitation in 31 major sub-Saharan African cities: An analysis of DHS data from 2000 to 2012

Version: 2 Date: 13 January 2014

Reviewer: Oliver Cumming

Reviewer's report:

I feel that the authors have adequately addressed my comments for the first round.

I have grouped my comments as per the journal's guidance.

Minor essential revisions:

1. Abstract 'conclusions' - the first line doesn't make sense to me. Suggest changing to "Based on DHS data (and using the MDG definitions)..." rather than "gaining access to WS&S metrics" as I don't think cities or people are gaining access to metrics.

2. p. 4 re: refs 10 and 11 - ref 10 (Genser 2008) concerns the effect of the intervention on social and environmental determinants rather than a health outcome. I suggest replacing this with Barreto 2007 (http://www.sciencedirect.com/science/article/pii/S0140673607616389) which is the primary outcome paper for this study and reports the effect of the intervention on childhood diarrhoea. Ref 11 (Barreto 2010) is the same study but a different health outcome (intestinal worms) so relevant here.

3. p. 16 - "open-air defecation": I've not encountered this term and believe that 'open defecation' (no 'air') is the conventional term.

4. p. 17 - "...an exploratory look into what might be driving access to WS&S..." - I think "which factors are associated with progress on WS&S..." would be more appropriate.

5. p. 18 - "This possibly indicates that the MDGs have focused efforts on this improved/unimproved variable while other measures of access... are being neglected". Surely what is meant here is that the MDGs have possibly diverted attention away from issues such as open defecation or collection time rather than the neglect of certain 'measures'.

6. p. 22 - I feel that the use of the term 'JMP metrics' is often confusing. Here ("urban residents who are defined by JMP metrics of improved WS&S") it would be much clearer to state that although many urban residents may be classified as having 'improved' access to drinking water, the quality and quantity of their water remains poor or inadequate. I think this paragraph could do with at least one
more reference re: water quality.

Discretionary Revisions:

7. p. 18 - I think this is an important point re: increasing disparities (re: at the same time that more people are gaining access to improved, more people are practising open defecation). Although you haven't done this in your analysis, examining these trends by, for example, wealth quintiles may shed light on the determinants of this disparity.

8. p. 19 - I don't really understand your assertion re: population density and it seems a little speculative as you don't have any data or references to support your assertion re: densification in more developed areas.

9. p. 23 - an issue of style but you might consider beginning with the limitations and then a "despite these limitations..." paragraph.

10. p. 25 (final sentence) as well as more effective investment of external funds (aid and concessionary loans)?

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

**Quality of written English:** Acceptable

**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.