Reviewer's report

Title: Vitamin D levels are low in adult patients with sickle cell disease in Jamaica and West Africa

Version: 1 Date: 20 March 2014

Reviewer: Virginia Stallings

Reviewer's report:

The authors present data from many studies and countries. Subjects with SCD and healthy subjects are reported. All the controls appear to be female. The issue of vit D and its impact on SCD is of scientific and potentially clinical interest.

1. Major revisions

The methods section required significant revision so that the subjects, samples and study design is clear to the reader. Consider adding a table with details on each site, number, SCD/Control, year of data collection/blood, M/F, and age distribution, latitude info for each data set/city.

Laboratory assays section includes measurements that are not laboratory, and some that are mentioned are not reported. Reduce the detail of the vit D analysis. Were all blood/vit D samples stored in Chicago for all years? Storage length for each data set? The last sentence re storage and duplicate measures is confusion to this reviewer.

Information on dietary intake of vit D, use of vit D supplements and season of the year (sunlight low or high) is needed.

Define terms like 'reference population' and 'age-matched' in the methods or stats section, before used in the results and discussion.

Results

The 2nd and 3rd sentences are discussion points.

There are results (renal, liver, etc) not mentioned in the methods. Did all subjects have these tests? Measured real time or stored and measured with the vit D?

More information is needed to understand Fig 2. Missing label, % mark, and needs to be designed so the group lines are different in black and white print.

Discussion:

Table 2 should be introduced/presented in the Results section, then discussed in the discussion. Use one unit for the vit D in the paper, so change the nmol/l or ng/ml.

Without clarity and detail from the abstract, intro/study aims, methods and results sections, the discussion section and data interpretation can not be fully
evaluated.

**Level of interest:** An article of limited interest

**Quality of written English:** Not suitable for publication unless extensively edited

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

**Declaration of competing interests:**

I declare I have no competing interests.