Reviewer’s report

Title: Reference intervals for thyroid stimulating hormone and free thyroxine derived from neonates undergoing routine screening for congenital hypothyroidism at a university teaching hospital in Nairobi, Kenya: A cross sectional study

Version: 0 Date: 03 Jan 2016

Reviewer: Harvey Chiu

Reviewer's report:

The study by G. Omuse, et al. is an interesting study of thyroid function tests of a population base not well characterized, and given inherent genotype differences of the African population to the Caucasian population for whom the Roche e601 assay reference range has been developed, is an important study. Strengths of the study include the large number of patients surveyed in a relatively understudied population.

Considerations:

1. Are the authors able to provide a sense that their population cohort did not include premature patients? Given the inherent immaturity of the thyrotrope axis with increasing prematurity, with a correlate delayed TRH and TSH surge, inclusion of premature neonates could skew the TSH and Free T4 values towards lower values than would be expected with a non-premature cohort.

2. Were the "total of 1673 and 1359 non duplicate values for TSH and ft4 respectively" representative of all consecutive patients who had samples drawn? Were there patients sampled that were not included in the survey? It would be helpful to make this less ambiguous.

3. The authors make the interesting observation of a gender difference between ages 0-7 days. For the different age groups, are the authors able to provide a sense of the male/female
representation (perhaps a percentage) for the other age groups, to provide a reassurance of adequate representation of each gender, given their interesting observation in the subgroup.

4. Overall the manuscript is well written. Semantic changes may be helpful (line 262 - suggest to delete "called Tietz" and have Reference [5] enable the reader to refer to the Tietz textbook).

**Are the methods appropriate and well described?**

If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**

If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**

If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**

If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**

Please indicate the quality of language in the manuscript:

Acceptable

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