Reviewer’s report

Title: Spectral analysis of HIV seropositivity among migrant workers entering Kuwait

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Reviewer: Christian T. Bautista

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Comments on: Spectral analysis of HIV seropositivity among migrant workers entering Kuwait

Overall Comments:
The paper is well written, covers an important health topic and is of interest to a wide variety of readers. I would recommend accepting it for publication.

Specific Comments:
Grammar; Page 2, change “upon arrival in Kuwait from HIV high burden areas” to “upon arrival in Kuwait from areas with high HIV prevalence”

Grammar; page 2, change “However, Mann-Kendall test” to “However, the Mann-Kendall test”

Pg. 2–3. Remove from results the sentence on the periodogram and the power spectrum and focus on the results of the 3 month cycle.

Grammar; pg. 3, change “INRODUCTION” to “INTRODUCTION”

Grammar; pg. 3, change “has spread to over 190 countries in less” to “has spread worldwide in less”

Grammar; pg. 4 “through out” to “throughout”

General comment: In the introduction, the authors should provide additional information, even if anecdotal on the makeup of the immigrant workers. Are they predominantly male, less than 30 years old, or? Are they allowed to bring their families with them? Is it possible to generalize that they primarily have low educational backgrounds?

General comment, methods, pg. 6. Would it be possible for the authors to discuss in a few more sentences the background methodology of frequency domain (spectral) analysis? For what purpose was it initially developed? Has it been used before in epidemiology i.e., for the analysis of influenza outbreaks?

General comment, results, pg. 6-7. The authors should indicate which three month seasonal period had the highest HIV prevalence. Additionally, it’s
unclear if information on country of origin was available, however, the information on HIV prevalence by country of origin would be extremely interesting.

Grammar; pg. 7. The first and second sentences of the discussion do not flow together. The authors state at first that population-based studies suffer from biases, which is true, then go on to state that population-based registries are the best surveillance tool in Europe. I assume they are referring at first to broad population level HIV prevalence surveys, and secondly that they are referring to the specific HIV registries in Western Europe, where the governments are given all identifying epidemiological information for persons testing HIV positive, however, this is not clear.

Grammar; pg. 10, change “spatial distributions with in countries of origins” to “spatial distributions within their countries of origin”

Figures.
I don’t believe the information in Figure 1 needs to be shown. I’d rather see a graph of overall HIV prevalence by year, although this information is presented in table 1. Likewise, Figure 2, by itself, is uninformative. I believe a few short sentences should be included to explain what is being shown; is the three month period indicated by the spike in red that is shown at 2.5 months?

What next?: Accept after minor essential revisions

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.