Author's response to reviews

Title: Characterizing Influenza surveillance systems performance: Application of a Bayesian hierarchical statistical model to Hong Kong surveillance data

Authors:

Ying Zhang (yz62@georgetown.edu)
Ali Arab (aa577@georgetown.edu)
Benjamin J Cowling (bcowling@hku.hk)
Michael A Stoto (stotom@georgetown.edu)

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Dear Ms. Aguirre,

Thank you for considering the revised version of MS: 5888766441173254 “Characterizing Influenza surveillance systems performance: Application of a Bayesian hierarchical statistical model to Hong Kong surveillance data” for publication at *BMC Public Health*. We are grateful for reviewer 3’s comment, which pointed out that we had not been clear about our use of the term “significant.” We have therefore replaced the paragraph where we introduced this term on page 14 with the following text, which we believe more clearly describes what we did.

To present these results graphically with 95% credible intervals (CIs), we estimate the posterior distribution of each coefficient for the correspondence between individual surveillance system and the information environment proxy data. We use the term “significant” when the 95% CI does not include zero, indicating evidence of a statistical correlation between the surveillance system and the information environment proxy data. For instance, in Figure 3A, flu-HA has a CI that is entirely above zero, which suggests a positive correspondence with one of the information environment proxy data— Google search for seasonal flu term. On the other hand the data for %ILI visits at general practitioners shows a lack of statistical correspondence with seasonal flu term searches with a CI that includes zero.

We hope that all these changes fulfil the requirement to make the manuscript acceptable for publication in *BMC Public Health*.

Yours sincerely,

Ying Zhang, PhD and Michael A. Stoto, PhD
Georgetown University
3700 Reservoir Road, NW  Box 571107
Washington, DC  20057-1107
e-mail:  stotom@georgetown.edu
Telephone:   (202) 687-3292