Article details: 2017-0084	
Title	Clinical presentation of Lyme disease cases in the higher-risk region of Québec: a retrospective descriptive study
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Reviewer 1	Dr. Muhammad Morshed
Institution	BC Centre for Disease Control, Public Health Laboratory, Vancouver, BC
General comments (author response in bold)	Paper entitled "Recent trends in the use of Lyme disease serology in the higher-risk region of Québec: a retrospective study". 1. The main points they wanted to convey is that Lyme awareness and serology requests in the Cowansville area increased over recent years. 2. Certain symptoms and area of residence were more predictive of a positive serology, which is information that can help guide primary care physicians. This is important findings and need to be published. However, the second part seems problematic and need to be sorted out. Authors did not give enough information about how the diagnoses were made. This is very important. It would be useful to calculate accurate case number and they might be able to come with the same conclusion. So author should define how the diagnosis were made, what kit have been used, did they use two tier diagnosis? If not then why not etc. My specific points are given below. Major: 1. Statistical analysis: line 109 to 112. Authors should give detail how the patients have been diagnosed and what kits they used. Authors mentioned that they considered Lyme positive if IgM or IgG is ever positive. This is a problem. All authors of this s tudy may be aware that there are many false positive IgM and that can occur for so many reasons. If patient was suffering from Lyme disease related symptom for more than 30 days then there is very little value on IgM results alone. Authors should adhere to the accepted diagnostic guideline published by Canada and US IDSA (Ref 10-12) and re-calculate case numbers accordingly and re-write the paper **I clarified that laboratory diagnosis was made through a two-tiered testing, and only symptomatic individuals should have been tested. Although I agree that the duration of symptoms is very important in the clinical interpretation of the laboratory results, it was not possible to properly collect the duration of symptoms through chart review. I added this fact as a limitation of this study.** 2. Line 163: authors claimed 2-9% patients exhibited EM, it would be nice to show what percentage of EM correlated with Lyme serology. This information is very much lacking in Canada and this paper can provider readers some idea on that. Similarly what percentage of acute cases do have Lyme disease by two tier algorithm but lacking EM will be informative as well **We added in our results that 34% of people presenting with erythema migrans and investigated for Lyme disease had positive serology. was reported by only 36% of acute cases, but cutaneous manifestation were present in 74%. We also presented that 48% of IgM positive cases were reported to have erythema migrans, but 79% had some cutaneous manisfestation (this includes what was reported as a rash or cellulitis).** Minor: 1. Abstract background line 25; What kind of hospital (primary care? tertiary care?? How many beds??) **This is now specified in the study setting section.** 2. All scientific name e.g., Borrelia burgdorferi should be italicized as Borrelia burgdorferi. Please make these changes throughout the paper **Borrelia burgdorferi is now italicized throughout the paper.** 3. Line 29 "we then....unit" need to be revised as A retrospective chart.....Medicine Unit were conducted. **Thank you, the sentence was modified accordingly.** 4. Line 41 "which is information....physicians" should change to which can help guiding primary care physicians **Thank you, the sentence was modified accordingly.** I did not go through whole paper but please check for grammatical errors. **Thank you, grammar was revised.**
Reviewer 2	Dr. David N. Fisman
Institution	Dalla Lana School of Public Health, University of Toronto, Toronto, Ont.
General comments (author response in bold)	This is a nice paper. I have only limited comments: 1. I think a map of this region of Quebec, with some symbology to delineate risk regions, would be helpful. It is particularly important given the apparently regional nature of risk. **While we agree with the reviewer on this suggestion, we are not equipped to draw a new map, and the only published maps that show the recently updated limits of the local health network in Quebec (modified since 2015), are published by the MSSS and are not available in English. We opted to leave out.** **http://publications.msss.gouv.qc.ca/msss/fichiers/statistiques/cartes/RSS05_RTS_Estrie-CHUS.png** **http://www.msss.gouv.qc.ca/statistiques/atlas/docs/Carte_PDF/Carte_RUIS_RLS.pdf** 2. People with positive IgM results seem to be particularly interesting from the point of view of (mostly) truly being acute Lyme. You might consider supplemental exploratory analyses where these folks are compared both to those with lone IgG positivity, and compared to seronegative individuals. **We agree and we now present IgM positive cases separately than total cases. However, we only had 9 cases positive for IgG only, which I considered too small to allow adequate comparisons or to provide informative proportions.**