**Reviewer’s report**

**Title:** Prioritising the development of severity distributions in Burden of Disease studies for countries in the European region

**Version:** 0  **Date:** 29 Nov 2019

**Reviewer:** Michael Porst

**Reviewer's report:**

Thank you for adding this topic to the scientific discourse if it comes to Burden of Disease estimates. I really appreciate your work.

Nevertheless, I would like to give you some comments or notes on your manuscript:

Row 73: What do you mean with "developing a composite approach"? Do you mean to mix the GBD distributions with national one?

Row 79 - 83: Before removing the "asymptomatic group" from calculating YLDs, the specific disease (and therefore the specific context) has to be taken into account. For some diseases it is plausible to consider a asymptomatic group. For example, "Asymptomatic IHD" describes persons who survived an initial IHD event and are living in an interval without symptoms of AMI, heart failure, or angina" (Moran et al. 2012, p. 321). Thus, even if we are using records (claims data) to identify prevalent IHD cases, it is plausible that a group of patients are in an asymptomatic state and should be removed from YLD estimates. So, I would abstain from generalisation. Please make clear that your suggestion is in the context of your data frame and disease specific. As side note, we had a debate about asymptomatic COPD-cases because if we can identify prevalent cases in claims data those have to be mild at minimum (from a medical perspective).

In my opinion, this paragraph should start with a brief discussion about the question, if we can define a asymptomatic group of individuals within the context of a given data frame because that is the important point. And then, you could specify your suggestions.


Row 80: It hast to be clear that asymptomatic equals a state of "no health loss".

Row 103 - 104: I do not really understand the benefit of using absolute differences between the highest and lowest weights for prioritising diseases. Do you want to make clear that the difference in weights means an underestimation of YLDs? Because in conclusion this would be the overall topic. The difference between the highest and lowest weight is just an indicator and
shows the variation of health loss within a disease. If it comes to a suggestion for prioritising there are far more relevant issues, e.g. data access (individual level), measure of life quality in relationship with diagnosis or health state within surveys (see Burstein et al. 2015) or identification of sequela within surveys or claims data. Those have to be taken into account before starting any analysis. I would argue that the 20 leading diseases concerning the estimation of YLDs are itself a good starting point because they produce the highest burden.

Besides this, I checked the result for migraine and did not come to the same result. Because in my opinion the difference between the highest and lowest weight is $0.441 - 0.000 = 0.441$ (with asymptomatic) and $0.441 - 0.223 = 0.218$ (without asymptomatic). Please check this.

If you want to stay with this figure I would suggest to be more clear what is the benefit.

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An article of importance in its field

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