Rapid Reviews COVID-19

Review 2: "Projected HIV and Bacterial STI Incidence Following COVID-Related Sexual Distancing and Clinical Service Interruption"

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RR:C19 Evidence Scale rating by reviewer:

- **Potentially informative.** The main claims made are not strongly justified by the methods and data, but may yield some insight. The results and conclusions of the study may resemble those from the hypothetical ideal study, but there is substantial room for doubt. Decision-makers should consider this evidence only with a thorough understanding of its weaknesses, alongside other evidence and theory. Decision-makers should not consider this actionable, unless the weaknesses are clearly understood and there is other theory and evidence to further support it.

Review:

The results of this manuscript are intuitive and highlight the important point of the potential for competing effects of treatment interruption and HIV/STI incidence and transmission. An understanding of this relationship will help researchers and public health professionals understand the data that they see with regard to STI incidence and expected reporting of new HIV cases.

My main concerns are around the specifics of the methodology and the mechanistic relationship between COVID service disruption and health outcomes:

1. The authors should describe in greater detail the mechanism for the impact of HIV service disruption on onward HIV transmission and how it is implemented within the model (either in the methods section or in the appendix). For example, how is 'reduction in ART retention' taken into account in the model structure during the months where service delivery is assumed to be impacted due to COVID? Do patients cycle on and off ART during this period, and for what duration? Or are patients assumed to be no longer retained in care for the duration of the service disruption period?
 - a. If including potential increases in viral rebound due to reduction in ART access, the number of months/rate assumed for a return to a set-point viral load should be reported in the main text of the methods.
2. A reduction of PrEP initiation was modeled, but an increase in PrEP discontinuation due to COVID-related service disruption seems equally as likely—I would suggest to add that in as an additional HIV/STI intervention modeled.

3. The authors describe how service interruption was reflected in four types of HIV/STI interventions. The first three relate to HIV and the fourth is on 'linked bacterial STI screening and treatment'. It is unclear whether this means that the STI screening/treatment service disruption only relates to clients that are on PrEP or ART ('linked' screening/treatment?). If that is the case, the authors might also consider a reduction in the likelihood of care seeking for STI screening/testing not linked to HIV services. If that is not the case, it should be clarified.

4. Finally, there may be more data available now to validate these projections further, and calibrate to actual STI case data (and possibly new HIV infections- if we see a drop in new cases, probably a reflection of delayed care seeking). It would be very helpful to use any newly available data to construct a 'likely' base case. The modeled results, as they stand, do indeed show the potential trade-offs between service disruption and social distancing on STI/HIV incidence, but some indication as to where we are headed would improve the manuscript significantly—particularly if there are some early insights as to which of these services are impacted and to what degree.