Review report on "Transmission potential of mpox in Mainland China, June-July 2023: estimating reproduction number during the initial phase of the epidemic" by Akhmetzhanov *et al.*

The study by Akhmetzhanov et al. presents a thorough analysis of effective reproduction numbers during the initial phase of the mpox outbreak in China. The authors collected case data and relevant information from different sources and constructed more reliable epi curve to estimate effective reproduction numbers. Overall, the analysis that the authors conducted is well-described, and the manuscript provides timely insights for public health responses in China and other surrounding countries. There are several minor points that need to be clarified, and several arguments on the generalizability of their findings need to be reconsidered. Detailed comments are as follows:

General comments

1. Interpretation of projections

    This projection represents the worst-case scenario in a sense, because this analysis assumes the continuation of exponential growth until September. In fact, there is a saturation effect depending on the population size of remaining susceptible individuals (who contribute to onward transmission). Besides, there is an effect of changes in behavior, which has been seen during the 2022 mpox outbreak in Europe. Please carefully discuss this limitation, just to avoid misinterpretations from the public.

2. Assumptions

    a. Eq.9: This eq seems like *R-r* translation where the generation time is normally-distributed (eq 3.4 of Wallinga and Lipsitch 2007). Also please re-check the notation (I assume not mu^2 but r^2 for the second term)

    b. Assumed generation time distribution: in line.191, the analysis refers to Guzzetta et al.'s estimate, but later studies indicated shorter mean serial intervals (Madewell 2023 EID 8.5 days; Miura 2023 JID 10.1 days). Estimated R_e values would be affected by the choice of this assumed GT and also depend on the assumption that the serial interval distribution is exactly the same as the generation time distribution. Please discuss or mention these points for clarification.

Minor comments

1. Line 42: I understand the author's point, however, the wording "spillover to the broader

general population" may need to be rephrased, because this sounds as if the MSM population is the source of "spillover" and the "non-general" population. Could this be "spread to other populations (or communities)"?

2. Line 69-70: I think this argument on the upward bias is true only during an exponential growth phase.

3. Line 75: ranged from 3.02 to 5.16? It would be easier to read if these numbers are ordered from smaller to larger.

4. Line 287: Were there no interventions or campaigns to raise the risk awareness in Mainland China/Taiwan/Hongkong, including social media promotions? If there is additional discussion on the potential effect of behavior changes or possible bias in testing during the initial phase of an outbreak, that would be helpful in interpreting R_e estimated in this study along with the situation in China.

5. Line.302: This sounds a bit subjective argument and contradicts findings on patients' behavior in Western countries. Perhaps it would be more convincing to refer to any citation, or otherwise good to skip this point.