Many thanks for inviting me here today, and in asking me to give this commentary.

As George Box almost said '*All models are wrong, but some are useful*'

As I am sure David would agree, this model is certainly wrong, most obviously it would be an exceedingly lucky guess if the ratio 0.5:1 that David choose for the number of secondary infections in an infectious hotspot dweller, that are spread into the community vs spread back in the hotspot, was correct.

As most of David's numerical results rely on this ratio, and as it is wrong, so are they.

However as George Box meant, that is not the point. This model, falls into the smaller category of models that not only wrong, but useful.

It illustrates very nicely the wonderful equity-inducing characteristic of infectious diseases, and one of the key reasons that I, and I am sure many of you, work in this area.

It illustrates that, that if health services ignore the poor and socially disadvantaged, those who tend to bear the brunt of the burden of infectious diseases, the poor and socially disadvantaged will, be generous with their infections and donate them right back at us!

As David suggests, from an academic perspective, it would incredibly interesting to get population level molecular data to start to put some plausible bounds on that 0.5:1 ratio, as has been done in New York for example. If resources were available for this, this would not only be of academic interest, but as in New York, would allow us to identify previously unknown links among genotypically clustered patients, unidentified sites of transmission, and potential false-positive cultures.

However, from a public health perspective, I wonder if perhaps we know enough already?

Because of the excellent efforts of the health dept in Rio, we already know that inhabitants of certain areas of that city are at higher risk TB than others. As such, should we not already be prioritising them to receive a larger per-capita share of the limited health resources in Rio?

If not, and we can't be blind to the large inequalities in Brazil, David's paper will definitely useful in another way, as evidence that can be used for advocacy in arguing for increased health spending for these disadvantaged communities. As his study shows, when doing that we can truthfully make the case to the better off members of the Rio population, that they will personally benefit if we prioritise resources on the poor.

As such I recommend that this paper is added, using the 'George Box' classification, to the select list of 'useful' modelling studies!