Reviewer’s report

Title: Classification of veterinary surveillance to inform economic analysis

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Reviewer: Cynthia L Gibert

Reviewer’s report:

Major compulsory revisions

The manuscript is well-written and the proposed model for veterinary surveillance addresses in broad strokes the economic import of having a structured veterinary surveillance system in place that addresses the three facets of such surveillance – sustainment, investigation, implementation. There are no major compulsory revisions.

Minor essential and discretionary revisions

The three examples of responses to infectious pathogen-related outbreaks: the 2003 H5N1 highly pathogenic avian influenza outbreak in Vietnam, the more endemic issue of salmonella in poultry stocks in Europe beginning in 2003, and the sequelae of the 1992 foot and mouth disease vaccination ban in the EU, address the stages of the proposed veterinary surveillance system.

There should be some clarification in the scenario concerning the H5N1 outbreak in Viet Nam as it is written in the present tense and does not provide many details as to the duration of the surveillance, particularly, in the implementation phase, or of the economic costs of epidemic both social and momentary in this largely agrarian setting. It is not clear in this section what the time frames are and this should be clarified. The economic costs of the response to such an epidemic are not trivial yet the country itself may be poorly equipped to do the needed surveillance over time in the sustainment phase.

Some discussion could be included as to the feasibility of the sustainment phase in resource poor countries versus less resource poor countries, such as those in the European Union.

There needs to be more effort to demonstrate to policy makers at all levels the societal and economic benefits of veterinary surveillance.

The proposed model is logical but it is difficult to determine how this differs from the current systems in place for such surveillance. The authors should define how their model differs from such current systems. Another more difficult issue is the required coordination at the international level that is not addressed. For example, during the SARS epidemic organizations such as the WHO and CDC did not initially assist in controlling the epidemic in Taiwan because of political reasons despite the fact that the spread of the epidemic there not only threatened Taiwan but the larger global community.
In the section on plans to reduce the prevalence of salmonella infections in poultry stocks in the EU some expansion of the discussion on the transition phase should be considered. In the section on foot and mouth disease in Europe, it is not clear what is meant by the statement that “Europe passed all stages in the past 60 years” since the dates are not included.

Even though the three outbreaks chosen for discussion are representative of some of the issues involved when there is indeed an outbreak of an infectious pathogen, the discussion itself seems to overly simplify the true impact of the response to such outbreaks. These discussions are not as well thought out as those of the more theoretical model.

The use of scientific nomenclature in the manuscript should be reviewed and be corrected, if needed, to be in compliance with the journal requirements, as it is inconsistent. There are some other minor editorial changes that should be made and would be noticed by the authors upon review. In the scenario sections the use of tenses should be consistent throughout and not switch from the present to the past tense.

Decision re publication

After some rewriting of the case scenarios and possibly some shortening of the initial discussion of the three phases of the surveillance model, the manuscript should be considered for publication. The topic of veterinary surveillance is of increasing importance. If the model discussion was somewhat abbreviated, since it is repetitive in places, the authors might appropriately discuss the issue of bioterrorism, in particular animal terrorism. The use of animal terrorism would potentially threaten livestock and migratory animal populations. Animal terrorism, the use of animal populations to introduce highly pathogenic zoonotic infections into such populations seeking to ultimately infect human populations, is a topic that does not get enough attention.

Level of interest

This article should be of interest not only to researchers and scientists but also to policy makers and the informed lay public as veterinary security issues and the, accordingly, mandated surveillance will be an ever increasing issue at the national and international level. The costs both economic and social, the related upheaval, and the required cooperation that must supersede political and geographic barriers will remain significant issues. Logical and sustained attention as outlined in this manuscript is mandatory.

Quality of written English

The manuscript is well-written, could be shortened is so desired. There are some minor edits that would be appropriate, and the use of the present and past tenses in the case scenarios addressed.
**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.