

Minutes of 10th meeting of the One Health Consortium

Topic: Sample size estimation

Venue: Virtual Mode

Date and time: 7th January 2022; 4.00 pm- 5.30 pm

Attendees: Drs. Subeer Majumdar, AK Rawat, JPS Gill, DhinakarRaj, Nagendra Hegde, KP Suresh, Azhahianambi

Minutes:

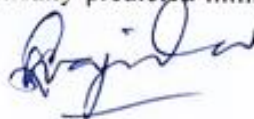
1. Dr. Suresh presented on the work done so far on 10 diseases (brucellosis, Q fever, cysticercosis, CCHF, scrub typhus, swine influenza, tuberculosis, JE, listeriosis and cryptosporidiosis) towards deciding sample numbers. The deduction was based on meta-analysis of the data in published literature, and keeping states as units for surveillance purposes. The following parameters were considered for deciding the sample numbers:
 - a. No. of studies
 - b. Total sample size from all the studies
 - c. Total events
 - d. Overall prevalence
 - e. Species to be covered
 - f. Target population
 - g. Sensitivity and specificity of the tests to be used for surveillance
 - h. Herd level prevalence
 - i. Confidence interval

Based on these data, the no. of villages to be sampled and the no. of samples for each of the diseases/species was projected.


Accordingly, the following numbers were put forward for further discussion:

Disease	No. of samples	No. of samples/village or herd
Brucellosis	3298	25-30
Q fever	4165	26-32
Cysticercosis	640000	50-200
CCHF	4515	29-39
Scrub typhus	1144	18-21
Swine influenza	765	8-90
Tuberculosis	2727	21-25
JE	2788	25-31
Listeriosis	2726	23-27
Cryptosporidiosis	616	8-90

2. Discussions ensued on too few numbers for some diseases, how state level data will be projected, time-lines, funding, optimum usage of kits etc. and the following points were agreed upon:
 - a. States will be considered as units for surveillance purposes. Depending on population and other criteria, districts will be randomly assigned in each state.
 - b. The no. of samples will be predicted as done by Dr. Suresh and accordingly samples will be collected for the first cycle. However, it was noted that the no. of samples would be the minimum required for structured surveillance and decided that the suggestion of Dr. Gill to collect additional samples as per agreed percentage above the statistically predicted minimum number may be implemented.



- c. Based on data from the first cycle, inclusion of risk factors and any other required parameters, the sample numbers will be further refined for collection and analysis during the second and third cycles.
 - d. Target states as well as target host species need to be defined for each of the diseases.
 - e. Attention shall be paid to how many samples can be accommodated per plate while deciding the number of samples, so that entire plates will be used for testing. It was suggested that centres could join hands if plates and reagents are partially utilized. Alternatively, it was opined that unused part of the plate be used for carrying out local studies such as outbreaks, herd testing etc.
 - f. Dr. Suresh should liaise with NRC-Meat for predicting the no. of samples for listeriosis and salmonellosis.
 - g. For cysticercosis, only grazing animal population should be considered. For cryptosporidiosis, only calf population should be considered.
 - h. Once the sample size is estimated, sampling strategy will be framed.
 - i. Investigators from the northeast to send literature on transboundary diseases as soon as possible to Dr. Suresh so that sample sizes can be determined for those diseases as well.
3. It was decided that the next meetings would be held as follows:
- a. Meeting of medical experts on 11-01-2022 at 4:30 PM
 - b. Project-wide meeting on 12-01-2022 at 4:30 PM
 - c. Meeting on sample size estimation and sampling strategy on 18-01-2022 at 4:00 PM
 - d. Project-wide meeting on 20-01-2022 at 4:00 PM


(Dr. Subeer S. Nagarkar)
Dr. Suresh
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