Example of Scoring System

Text:

Of the 127 samples collected from Madagascar and tested by the ELISA assay, eight (6.3%) screened positive for IgG antibodies, of which two were confirmed positive by the PRNT assay at a sera dilution of 1:160 and 1:640. Between the two confirmed IgG PRNT-positive samples, both were from individuals with exposure to ruminants (two of 93 exposed = 2.15% RVFV positive) (Table 2). One of the two IgG PRNT-positive samples, which had a titer of 1:640, also tested positive by ELISA for IgM antibodies. This sample was collected from a man of 58 years, with daily reported exposure to cattle, who lived in Tsiroanomandidy and had no travel history outside Madagascar. This individual also reported monthly handling of raw meat and butchering, frequently sleeping outside close to his cattle, and reported regular exposure to mosquito bites. Despite being IgM positive, there were no reported symptoms of fever or being sick during the last 12 months. Of the 230 samples collected from eastern Kenya and tested by the ELISA assay, 36 (15.7%) screened positive for IgG antibodies. Of these 36 samples, 21 (58.3%) were confirmed positive by PRNT assay at a sera dilution ≥ 1:40. The titer range for the exposed confirmed positives was 1:160 to 1:2,560, and the age ranged from 18 to 65 years with a mean of 37.6 years (Table 2 and Figure 2). Of the 200 samples collected from western Kenya and tested by the ELISA assay, 15 screened positive for IgG antibodies, though, none of these samples were confirmed positive by PRNT assay.

Reference (gold stardard) extraction table by study:

nSample	sampCountry	sampArea	sampY	targetSpecies	sampledMatrix	agent	anMeth	nPositive
230 host (animal or human)	Kenya	Garissa	2012	Human	Blood serum	Rift Valley fever virus	IgG ELISA	36
200 host (animal or human)	Kenya	Western Province	2012	Human	Blood serum	Rift Valley fever virus	IgG ELISA	15
127 host (animal or human)	Madagascar		2012	Human	Blood serum	Rift Valley fever virus	IgG ELISA	8

Reference (gold standard) extraction by individual elements:

(The list of unique values extracted for each element could be simply derived from reference table of elements extracted by study)

nSample: 230;200;127

sampCountry: Kenya; Madagascar

sampArea: Garissa; Western Province

agent: Rift Valley fever virus

anMeth: IgG ELISA

nPos: 36;5;8

Scoring procedure with examples

Two F-scores will be calculated.

1. F-score per individual element is defined as 2*(precision*recall)/(precision+recall), where precision is the proportion of correct element extracted among the elements retrieved by the algorithm, recall is the proportion of correct elements extracted by the algorithm over the total amount of true correct elements extracted by expert.

   In case elements were extracted by study, F-score will be computed on the basis of unique values of extracted data elements as shown in example 2.

2. F-score per study is defined as 2*(precision*recall)/(precision+recall), where precision is the proportion of study correctly extracted among the studies retrieved by the algorithm, recall is the proportion of study correctly extracted by the algorithm over the total amount of study extracted by expert. A study is correctly extracted if all the elements are extracted and if all the extracted elements refer to that specific study.

   In case extraction by study was not performed, F-score per study is defined as zero.

Example 1: Extraction by study

The algorithm extracts:

nSample	sampCountry	sampArea	sampY	targetSpecies	sampledMatrix	agent	anMeth	nPositive
230	Kenya	Garissa	2012	Human	Blood serum	Rift Valley fever virus	IgG ELISA	36
36	Kenya	Garissa	2012	Human	Blood serum	Rift Valley fever virus	IgG ELISA	21
200	Kenya	Western Province	2012	Human	Blood serum	Rift Valley fever virus	IgG ELISA	15
200	Kenya	Western Province	2012	Human	Blood serum	Rift Valley fever virus	IgG ELISA	0
127	Madagascar		2012	Human	Blood serum	Rift Valley fever virus	IgG ELISA	8
127	Madagascar		2012	Human	Blood serum	Rift Valley fever virus	IgG ELISA	2

Conversion in extraction by individual element:

nSample: 230;36;200;127

Score for individual element:

Precision=3/4

Recall=3/3

F-score=0.86

Score for study identification:

Study_Precision=3/6

Study_Recall=3/3

Study_F-score=0.67

Example 2: Extraction by individual elements

The algorithm extracts:

nSample: 230;36;2;200;5;2;127;8

Score for individual element:

Precision=3/8

Recall=3/3

F-score=0.55

Score for study identification:

Study_F-score=0.00