Bias represents the extent to which a prevalence estimate produced by the surveillance system deviates from the value of the true prevalence . Bias is reduced as representativeness is increased.
.

	Surveillance design step	Advice for improvement of BIAS
1	**Surveillance system**	
1.1	**Hazard**	
1.2	**Surv. Objective**	
1.3	**Geographical area covered**	
1.4	**Susceptible species**	
1.5	**Risk characteristics**	
2	**Components overview**	
3	**Target population**	
3.1	**Target species**	
3.2	**Target sector**	
3.3	**Sectors missed**	
3.4	**Geographical area covered**	
3.5	**Target criteria**	
3.6	**Percentage covered**	
4	**Disease suspicion**	
4.1	**Definition**	
4.2	**Obligations**	
4.3	**Notification procedures**	
4.4	**Actions upon suspicions**	
4.5	**Actions upon confirmation**	
5	**Enhancements**	
6	**Testing protocol**	Imperfect performance of diagnostic tests may lead to misclassification of samples, which is a source of information bias. Furthermore, testing costs can deter animal owners from participating in surveillance if they have to cover costs themselves. Consider these sources of bias when weighing the various testing options in terms of test performance, type of test to meet your objective and testing costs.
6.1	**Type of test to be carried out**	
6.2	**Type of sample to be collected**	Consider sample types that do not introduce systematic errors. For example some sample types may be difficult to collect from certain population strata (e.g. blood samples from young animals) or may lead to non-participation (e.g. post-mortem). If the chosen sample type only allows targeting part of the target population (e.g. semen, milk), ensure that you create other components that cover the remainder of the target population.
6.3	**Pooling**	

6.4	**Screening/first test**	To avoid misclassification bias, choose a test with high sensitivity and specificity. Further steps to minimize bias include for example batch testing, ring trials between laboratories, positive and negative controls.
6.5	**Confirmatory/ second test**	To avoid misclassification bias, choose a test with high sensitivity and specificity. Further steps to minimize bias include for example batch testing, ring trials between laboratories, positive and negative controls.
6.6	**Further details**	
7	**Study design**	Pay careful attention to study design to minimize bias.
7.1	**Point of sample collection**	The sampling point determines which individuals of the target population are eligible to be selected for surveillance. Bias can arise for example if the sampling point does not provide adequate access to the target population or if sampling units are likely to be non-responsive. Hence, carefully consider such issues when selecting the sampling point. Once a sampling point has been chosen, carefully check the sampling frame that it is a) up to date, b) complete, and c) representative (e.g. farms not delivering animals to abattoir).
7.2	**Selection of units**	
7.3	**Target unit**	
7.4	**Sampling unit**	
7.5	**Sampling design**	
7.6	**Number of units in the target population**	
7.7	**Sensitivity of the testing protocol**	
7.8	**Specificity of the testing protocol**	
8	**Sampling strategy**	
8.1	**Sampling at the primary sampling unit (PSU) level:**	
8.2	**Sampling at the secondary sampling unit (SSU) level:**	
8.3	**Selection criteria WITHIN the population**	
8.4	**Risk-based allocation**	
8.5	**Sample size calculation**	
8.6	**Sample allocation at the primary level**	
8.7	**Sample allocation at the Secondary level**	
8.8	**Sample collection timeline**	
9	**Data Generation/ Sampling collection process**	
9.1	**WHO will collect the samples?**	
9.2	**HOW will samples be collected?**	
9.3	**WHEN/HOW OFTEN will samples be collected?**	
9.4	**Training**	

9.5	**Follow-up**	Lack of follow up may lead to failure to detect systematic errors
10	**Transfer means**	
10.1	**HOW will samples be transferred?**	
10.2	**WHEN/HOW OFTEN will samples be collected?**	
10.3	**Training**	
11	**Data Translation/ sample analyses process**	
11.1	**WHO will perform the analyses?**	
11.2	**HOW will samples be analysed**	
11.3	**WHEN/HOW OFTEN will samples be collected?**	
11.4	**Expected LOAD**	
11.5	**Training**	To minimise bias consider accessibility to the training and ensure it is available for all those involved in the data translation for example where several laboratories are used ensure all staff are trained to the same level.
11.6	**Follow-up**	
12	**Epidemiological analyses**	
12.1	**Are there any epidemiological DATA that need to be collected?**	
12.2	**WHO will perform the analyses?**	
12.3	**HOW will epidemiological analyses be performed?**	
12.4	**WHEN/HOW OFTEN?**	
12.5	**Training**	
12.6	**Data management needs**	
12.7	**Software needs**	
13	**Dissemination of results**	
13.1	**WHO will disseminate the results?**	
13.2	**WHO is the TARGET of dissemination?**	
13.3	**HOW will results be disseminated?**	
13.4	**WHEN/HOW OFTEN?**	
14	**Surveillance review**	
14.1	**Who**	
14.2	**When**	
14.3	**How often**	