

Technical Appendix S1

Questionnaire for the case-control study to identify risk factors associated with avian influenza subtype H9N2 on commercial poultry farms in Pakistan

- This section must be filled in before completing the questionnaire:

Date:	Questionnaire No.:
District:	Farm Code:
Land Area / Farm Area (Sq. meter) :	

- Tick only one answer:

SECTION 1 (LOCATION OF FARM)

Latitude:	Longitude:
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1. Distance of the farm from main road:..... _____ (km)
2. Distance of farm from nearest commercial poultry farm:..... _____ (km)
3. Distance from nearest case (infected) farm: _____ (km)
4. Is this a rice/wheat growing area? **Yes** **No**

SECTION 2 (BIOSECURITY)

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5. Is there a pond (s)/water reservoir inside/near your farm? **Yes** **No**
 6. If yes, do you see any wild/migratory birds come to the pond(s)/reservoir?
..... **Yes** **No**
 7. Can wild birds enter into the shed? **Yes** **No**
 8. Is the farm fully fenced to prevent entry of wild animals? **Yes** **No**
 9. Do you disinfect the area around sheds? **Yes** **No**

10. If yes, how often do you disinfect the area around sheds?
 **regularly** **not regularly**
11. Do you wash and disinfect the cages before re-introduction into the farm?
 **Yes** **No**
12. Do you share the farm equipment with other farms? **Yes** **No**
13. Do the workers change rubber boots or soak them in foot bath before entering the bird area? **Yes** **No**
14. Do the workers change cloths or spray disinfectant on them before entering the bird area? **Yes** **No**
15. Do visitors change rubber boots or soak them in foot bath before entering the bird area? **Yes** **No**
16. Do you have foot bath/dipping area at the entrance of farm? **Yes** **No**

SECTION 3 (FLOCK HISTORY)

17. What was the mortality (%) on your farms? _____
18. Do you vaccinate your birds against H9N2 AIV strain? **Yes** **No**
19. Age of flock: _____ (days)
20. Capacity of farm: _____ (no. of birds)
21. Was the flock affected by infectious bursal disease? **Yes** **No**
22. Was the flock affected by E. Coli infection? **Yes** **No**

SECTION 4 (FARM MANAGEMENT)

23. Do you raise backyard poultry/pet birds at your farm? **Yes** **No**
24. Do you see rodents in the sheds? **Yes** **No**
25. Can truck/large vehicle enter the farm? **Yes** **No**
26. Do you sell your birds/eggs directly to retail shop? **Yes** **No**
27. Do you sell culled birds directly to retail shop? **Yes** **No**
28. Do you store water? **Yes** **No**
29. If yes, do you have cover for your water tank(s)? **Yes** **No**

30. How do you dispose waste from shed after cleaning?.....
 **properly disposed of** **not properly disposed of**
31. How do you dispose of the dead birds?.....
 **properly disposed of** **not properly disposed of**
32. Which type of sheds do you have.....**windowless** **open** **semi- windowless**
33. What kind of ventilation system is used on your farm?
 **fan ventilation** **natural**
34. How does your flock get their drinking water? **automatic** **manual**
35. How does your flock get their feed? **automatic** **manual**
36. What kind of floor cover is in the sheds? **concrete** **saw dust**
37. Egg/bird catching collection system: **automatic** **manual**