Minutes of 14th meeting of the One Health Consortium

Venue: Virtual Mode

Date and time: 20th January 2022

Attendees (in alphabetical order, by first name):

1. Dr. Abhijit Pawde, ICAR-IVRI
2. Dr. Akanksha Nayak
3. Dr. Ankita Bhati
4. Dr. Aravindh Babu, TANUVAS
5. Dr. Arnab Sen, ICAR Research Complex for Northeastern Hills
6. Dr. Arun Prince Milton, ICAR Research Complex for Northeastern Hills
7. Dr. Azhahianambi PV, TANUVAS
8. Dr. Arun Kuman Rawat, NIAB
9. Dr. Barbuddhe SB, ICAR-NRC Meat
10. Dr. Blahwar P
11. Dr. Bina Saikia
12. Dr. Deepak Kumar
13. Dr. Diwakar Hemadri, ICAR-NIVEDI
14. Dr. Gopal Bohra, AIIMS Jodhpur
15. Dr. Gyamnya Baki Garam
16. Dr. Himani Dhanze, ICAR-IVRI
17. Dr. Hira Ram, ICAR-IVRI
18. Dr. Ibotomi Singh
19. Dr. Jasbir Bedi, GADVASU
20. Dr. Jiten Bardoloi
21. Dr. Kamran Zaman, ICMR-RMRC Gorakhpur
22. Dr. Keduzol Ltu
23. Dr. Laxman R Chatlod, ICAR-NRC Meat
24. Dr. Michael Mawlong, Nazareth Hospital, Shillong
25. Dr. Moonmi Khaund
26. Dr. Nagamani K, Gandhi Medical College
27. Dr. Nagendra Hegde, NIAB
28. Dr. Nagendra Nath Barman, Assam Agricultural University
29. Dr. Nitin Kurkure, MAFSU
30. Dr. Pankaj Dhaka
31. Dr. Pankaj Suman, NIAB
32. Dr. Parag Nigam, Wildlife Institute of India, Dehradun
33. Dr. Pramit Ghosh, ICMR-RMRC Dibrugarh
34. Dr. Pronab Dhar, ICAR-IVRI
35. Dr. Pushkala Subramanian, TNMGRMU
36. Dr. Rajeev, ICMR-RMRC Gorakhpur
37. Dr. Ravishekhar Gadepalli, AIIMS Jodhpur
38. Dr. Sandeep Ghatak, ICAR Research Complex for Northeastern Hills
39. Dr. Semsem Bhutia
40. Dr. Shirish V Upadhye, MAFSU, Nagpur
41. Dr. Siraj Ahmad Khan, ICMR-RMRC Dibrugarh
42. Dr. Subeer Majumdar, NIAB
43. Dr. Suresh KP, ICAR-NIVEDI
44. Dr. Swaraj Rajkhowa, ICAR-NRC Pig

45. Dr. Tapan Kumar Dutta, Central Agricultural University
46. Dr. Tilak Ghatani
47. Dr. Vidhi Jain, AIIMS Jodhpur
48. Dr. Vinod Kumar
49. Dr. Vikram Saini, AIIMS New Delhi
50. Dr. Yogesh Gadekar, ICAR-NRC Meat
51. Dr. Zohmingthangi

Minutes

1. Dr. Majumdar welcomed everyone and highly appreciated the participation of 50 scientists of the working group for One Health. He stressed the importance of the participation by individuals (veterinary officers) handling wildlife health. He requested them to come forward for this good cause and participate wholeheartedly.
2. Dr. Rawat stressed on compliance with DBT requirements.
3. It was appreciated that all centres had initiated and/or hired man-power. It was gathered that equipment purchase had been initiated and was at various stages for all the centres. It was requested to all to update by email to Dr. Rawat.
4. Dr. Suresh explained the strategy for arriving at sample numbers for 10 diseases (see Table). It was discussed that literature for TADs and salmonellosis had been shared with Dr. Suresh and he would come up with sample numbers for them in a week's time.

Disease	Prevalence (%)	Species to be covered	No. of villages to be sampled	No. of samples	No. of samples per village/herd
Brucellosis	12	Cattle, Buffalo, Sheep, Goat, Pig	160	3228	18-21
Q fever	10	Cattle, Buffalo	185	4517	21-25
Cysticercosis	18	Pig	152	2205	13-15
CCHF	11	Cattle, Goat, Buffalo	154	3695	20-23
Scrub typhus	22	Rodents*	134	1553	11-12
Swine influenza	28	Pig	105	1075	09-10
TB	12	Cattle, Buffalo	158	3230	18-21
JE	14	Pig	134	2389	16-18
Listeriosis	9	Food*	156	4183	23-27
Crypto-sporidiosis	27	Cattle, buffaloe (calf)	116	1161	09-10
Total			**1454**	**27236**	

5. Dr. Nambi presented on the different kits for surveillance of the various diseases. Discussions ensued and kits were finalized for each disease.

Disease	**Animal**	**Proposed kit**	**Manufacturer**	**Sensitivity**	**Specificity**	**Approx. price (Shipping extra)**
TB	Cattle, Buffalo	PPD (*M. bovis*) Single Intradermal Test	IVRI	84.9% to 93.02%	83.6% to 90.6%	60/10T
	Wild animals	Wild TB alert kit	TANUVAS			

Brucellosis	Cattle, Buffalo, Sheep/ Goat, Pig	Svanovir-Brucella cELISA kit (multispecies) (for validation purpose)	Svanova, Sweden	99.5% to 100%	99.5% to 100%	30,000/96T
		BruAlert-bELISA kit (multispecies)	TANUVAS	100% (95% CI, 88.18-100)	99% (95% CI, 96.43-99.88)	4500/96T
		RBPT kit (Multispecies)	IVRI	79.9%-95.8%	68% to 94.98%	400/4000T
JE	Pig	Pig JEV Ab ELISA Kit	Abbexa, UK	98.3%	98.2%	US$456.75/96T
CCHF	Cattle, Sheep and Goat	ZyDX CCHF (Cattle) ELISA kit (IgG-ELISA)	Zydus Cadila	Unknown (85.7% for human kit)	Unknown (98.44% for human kit)	18,000 + GST/48T
		ZyDX CCHF (Sheep&Goat) ELISA kit (IgG-ELISA)	Zydus Cadila	Unknown (85.7% for human kit)	Unknown (98.44% for human kit)	18,000 + GST/48T
Q-fever	Cattle	VetLine Coxiella Bovine (Ab-ELISA)	NovaTec, Germany/ EuroFins Scientific, Luxembourg	96.20 %	94.47 %	€250/96T
Cysticercosis	Pig, Human	apDia Ag ELISA (confirms viable parasite cyst, very specific) (Human, pigs)	apDia, Belgium	100%	99.6%	€285.50/96T €1189.80/5x96T

6. Dr. Barman presented on the different kits for surveillance of transboundary diseases. Discussions ensued and kits were finalized for each disease.

Disease	Animal	Proposed kit	Manufacturer	Sensitivity	Specificity	Approx. price (Rs.)
ASF	Pig	ELISA	IDEXX, USA			
		ID Screen ASF Indirect	ID.Vet, France			1,18,125
		INgezim PPA Compac	Ingenasa, Spain	99% (94.3%)	100%	73,500 for 480 tests
PRRS	Pig	PRRS X3 Ab Test	IDEXX, USA			1,77,813 for 480 tests
		ID Screen PRRS Indirect	ID.Vet, France			
		INgezim PRRS Universal	Ingenasa, Spain	Am: 94.2% EU: 98.5% OA: 96.3%	99.7%	94,500 for 480 tests
LSD	Cattle	ELISA	IDEXX, USA			
		ID Screen Capripox Double Ag Multispecies	ID.Vet, France		99.7%	2,04,396 for 480 tests
		ELISA	Ingenasa, Spain			

Swine influenza	Pig	Influenza A Ab test. SIV	IDEXX. USA			
		ID Screen Influenza A N protein Swine	ID.Vet. France			
		INgezim Influenza Porcina	Ingenasa. Spain	87%	89%	78.750 for 480 tests
Nipah	Pig. Goat	No kits available. Dr. Barman to write to Dr. Simon Graham. Pirbright Institute				

Notes:

1. ASF cases are still in peractute form. Seroconversion may need endemicity, so it was suggested tissue (market/PM) simultaneously by rtPCR using OIE recommended primers.
2. Since goat pox vaccine is being used in some places, criteria should be fixed to identify unvaccinated cattle.
3. Considering budget constraints and ease of procurement, the option of keeping all 3 kits was suggested.

7. The following assignments were decided for coming up with SOPs for sample collection for animal surveillance. The SOP should include sampling frame (no. of samples, species, location etc.), how to collect, process and store samples, kits to be used for each disease (as decided above) and how to report the results.

	Disease
Dr. Kurkure's group	Cysticercosis. Q fever
Dr. Gill's group	Brucellosis. CCHF
Dr. Barbuddhe's group	Listeriosis. Salmonellosis. Scrub typhus
Dr. DhinakarRaj's group	Cryptosporidiosis. TB
Dr. Himani Dhanze	JE

8. Dr. Kamran Zaman presented chart detailing SOP for patient categorizations and tests needed for hospitalized individuals. He also discussed the table for various kits for surveillance in humans. Discussions ensued and kits were finalized for each disease.

Disease	**Sample**	**Test**	**Kits**	**SOP to prepare**
Tuberculosis	Sputum	Microscopy (ZN/Auramine staining if samples are few)		Dr M Mawlong to provide initial guidance document
		Line Probe Assay, where possible	PCR being developed at NIAB may be tested	
		Isolation if needed and possible (only for in contact persons when animals are found positive)		
Brucellosis	Serum	IgG ELISA	IgG Novatech	Dr Vikram Saini
JE	Serum, CSF	Active cases – CSF – IgM Serum IgG (for household)	NIV JE IgM Kit IgG Inbios Kit	Dr Nagamani
CCHF	Serum	ELISA	AIIMS Jodhpur, GADVASU to decide the kit	AIIMS Jodhpur
Q fever	Serum	ELISA IgG	IgG Novatech kit	AIIMS Jodhpur
Scrub typhus	Serum	ELISA IgM	IgM Inbios Int Kit	Dr Nagamani
Cysticercosis	Serum	Primarily clinical. MRI/CT scan of suspected epileptic / AES cases IgG ELISA	IgG NovaLisa / Novatech ELISA	Dr Kamran/ Dr Khan

Crypto-sporidiosis	Stool	PCR Ag ELISA	Ag ELISA kit Abbexa / Dr Nagmani madam	Dr Kamran / Dr Khan
Salmonellosis (NTS)	Stool	Culture XLD & PCR	PCR details by Dr Barbudhe	Dr Barbudhe
Listeriosis	Placental bits, meconium, Deep cervical swab, stool, CSF	Culture	Culture details by Dr Barbudhe	Dr Barbudhe
Nipah	Blood, serum, CSF	RT PCR	Dr Barman to request Dr Simon, Pirbright	Dr Barman/ Dr Arnab

9. For surveillance in humans, patient-centred followed by contact tracing and community surveillance was discussed. It was decided that forward surveillance (tracking from patient to contacts to community) would be followed if hospitals have confirmed cases and backward surveillance would be followed if veterinary fraternity informs the medical fraternity about cases in animals, with the potential of humans being exposed.
10. All were requested to share emails of colleagues from their respective centres.
11. Dr. Majumdar requested all to keep collecting samples for analysis for the first report due in the next 20-25 days.
12. The meeting ended with vote of thanks.

(Dr. Subeer Majumdar)

(Dr. Nagendra Hegde)