

OIE Collaborating Centres Reports Activities

Activities in 2021

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Title of collaborating centre:	Veterinary Epidemiology and Public Health
Address of Collaborating Centre:	Private Bag 11 222 Palmerston North 4442 NEW ZEALAND Nanjing Road 369 Qingdao, 266032 P.R.China
Tel.:	+64-6 3505948 +86-8
Fax:	+64-6 3505716 +86
E-mail address:	N.Cogger@massey.ac.nz
Website:	epicentre.massey.ac.nz https://www.cahec.cn/
Name of Director of Institute (Responsible Official):	Prof Jon Huxley
Name (including Title and Position) of Head of the Collaborating Centre (formally OIE Contact Point):	Prof Naomi Cogger, Director EpiCentre
Name of writer:	Prof Naomi Cogger, Ms Liu Ping, Dr Wang Youming, Prof Jackie Benschop, Prof David Hayman

ToR: To provide services to the OIE, in particular within the region, in the designated specialty, in support of the implementation of OIE policies and, where required, seek for collaboration with OIE Reference Laboratories

ToR: To identify and maintain existing expertise, in particular within its region

1. Activities as a centre of research, expertise, standardisation and dissemination of techniques within the remit of the mandate given by the OIE

Disease control	
Title of activity	Scope
African Swine Fever Emergency Response Plan	Production of the fifth edition of ASF response plan for Mainland, China.
Technical Guidelines for the Routine Prevention and Control of African Swine Fever (Revision)	Revised Technical Guidelines for the Routine Prevention and Control of ASF in Mainland, China.
FMD control strategy development for Myanmar and Lao PDR	Analysis of movement data, baseline surveys, post-vaccination monitoring, demographic and population density data over 5 years, comparing vaccinated with non-vaccinated ruminant populations.
Genomic pipeline development	Develop and implement an in-house bioinformatics pipeline for <i>S. aureus</i> and <i>S. uberis</i> isolates collected from cattle
Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
Epidemiological survey on major animal diseases according to National Epidemiological Investigation Plan	Survey for Avian influenza, FMD, ND, PRRS, PPR, CSF, Brucellosis, etc. Mainland China.
African Swine Fever outbreak investigations	Investigated outbreaks in Xin Jiang and Inner Mongolia provinces of Mainland China
Epidemiological survey on direct economic loss caused by brucellosis in sheep	Survey conducted in Inner Mongolia, Xinjiang, Shandong, Shaanxi provinces of Mainland China
Risk assessment of an ASF virus introduction to nine Pacific Island countries	Virtual mission on behalf of the FAO to complete an ASF import risk assessment mission for 9 Pacific Island countries (Samoa, Tuvalu, Federated States of Micronesia, Kiribati, Tonga, Vanuatu, Cook Islands, Fiji and the Solomon Islands) on behalf of the FAO. Reporting in 2022.
National TSE surveillance programme management for Biosecurity NZ	Participation to annual mandatory OIE reporting activities to support the NZ status of absence of TSE.
Infectious bursal disease virus (IBDV) review	Conduct a literature review on the epidemiological characteristics underpinning infectious bursal disease virus (IBDV) surveillance
Antimicrobial resistance (AMR) in the dairy chain in NZ and China	Examining the role of the dairy chain in the spread of antimicrobial resistance in NZ and in China with support of the New Zealand-China Food Protection Network (https://www.crcc.nz/food-protection)

OneHealth Surveillance for AMR	One Health surveillance for antimicrobial resistance and use in Asia and the Africa
Enhancing Capacity for Early Detection of Viral Haemorrhagic Fevers	Epidemiological and laboratory training are being undertaken to enhance capacity for rapid detection of vial Haemorrhagic Fevers in Liberia
Training, capacity building	
Title of activity	Scope
6th Cohort of China Field Epidemiology Training Program for Veterinarians (CFETPV)	27 trainees from 18 provincial ACDC, 1 national institutes
Training on Veterinary epidemiology Technology	Jiang Su, Chong Qing, Xin Jiang, Gui Zhou, Hai Nan, Shan Dong and other provinces of Mainland China
Training on Epidemiological Study Design	40 trainees from provincial animal disease prevention and control center of Mainland China
Training of Trainers (ToT) in Outbreak Investigation and Response Management Training 2021	A virtual training for training-of-trainers in outbreak investigation and response management delivered via the online Massey University Moodle platform (Stream) and four Zoom synchronous sessions between 31 May and 8 July 2021. A total of 27 participants from eleven countries - Brunei, Indonesia, Lao PDR, Malaysia, Mongolia, the Philippines, Papua New Guinea, Singapore, Thailand, Timor-Leste, and Vietnam have completed the virtual training.
Advanced Geographical Information System (GIS) Virtual Training 2021	A virtual training for Advanced GIS training delivered via the online Massey University Moodle platform (Stream) and seven Zoom synchronous sessions between 27 July and 30 August 2021. A total of 30 participants from eleven countries - Cambodia, China, Indonesia, Lao PDR, Malaysia, Mongolia, the Philippines, Papua New Guinea, Singapore, Thailand, and Vietnam have completed the virtual training.
Epidemiological Study Design Virtual Training 2021	Virtual tutor-moderated workshops in study design delivered via the online Massey University Moodle platform (Stream) and five Zoom synchronous sessions between 5th November and 10th December 2021. A total of 33 participants from eleven countries - Cambodia, China, Indonesia, Lao PDR, Malaysia, Mongolia, the Philippines, Papua New Guinea, Singapore, Thailand, and Vietnam have completed the virtual training.
Asia-Pacific Centre of Veterinary Epidemiology (APCOVE)	Founding the Asia-Pacific Centre of Veterinary Epidemiology (APCOVE) for capacity building as a partner of 7 universities in Australia (5), USA (1), New Zealand (1). In 2021 we developed content for 35 self-directed modules. The course will run for the first time with a cohort of 120 students drawn from Cambodia, Indonesia, Myanmar, Lao PDR, Philippines, PNG, Timor-Leste, Vietnam.
Ministry for Primary Industry applied epidemiology program	EpiCentre staff designed and delivered the Ministry for Primary Industries' applied epidemiology Programme is designed to up skill industry, private practitioners and government officials to support animal health and biosecurity responses. Twenty individuals from New Zealand, South East Asia and the Middle East completed the course in 2021.
Enhancing Capacity for Early Detection of Viral Haemorrhagic Fevers	Epidemiological and laboratory training are being undertaken to enhance capacity for rapid detection of vial Haemorrhagic Fevers in Liberia
Zoonoses	
Title of activity	Scope
Anthrax outbreak investigations	Shan Dong province of Mainland China

Protecting NZ farmers from infection with a new <i>Leptospira</i> strain of serogroup Tarasov - an international concern?	PhD research to identify and isolate the new strain, identification of highly affected dairy herds, modification of sample collection transport and culture protocols, working with 3 vaccine companies towards a modified vaccine
Control of <i>Campylobacter</i> in Poultry	Examination of isolates from broiler flocks using whole genome sequencing and metagenomics to elucidate pathways for contamination.
Diagnostic Tool for <i>Leptospira</i>	Development of a diagnostic tool to type <i>Leptospira</i> in NZ Human, animal and environmental sources
Risk factors for human leptospirosis in NZ	A case-control study of leptospirosis in human in NZ to elucidate risk factors for notification. https://www.hrc.govt.nz/resources/research-repository/emerging-sources-and-pathways-leptospirosis-paradigm-shift

ToR : To propose or develop methods and procedures that facilitate harmonisation of international standards and guidelines applicable to the designated specialty

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the surveillance and control of animal diseases, food safety or animal welfare

Proposal title	Scope/Content	Applicable area
National Epidemiological Survey Plan on Major Animal Diseases in mainland China	Mainland China / Guiding each province to carry out emergency and specific epidemiological surveys	<input checked="" type="checkbox"/> Surveillance and control of animal diseases <input type="checkbox"/> Food safety <input type="checkbox"/> Animal welfare
Technical Guidelines for the Routine Prevention and Control of African Swine Fever (Revision)	Mainland China / Guiding the staff in feed production, farm, transportation, slaughtering and safety disposal to carry out ASF prevention and control	<input checked="" type="checkbox"/> Surveillance and control of animal diseases <input type="checkbox"/> Food safety <input type="checkbox"/> Animal welfare
African Swine Fever Emergency Response Plan (Fifth Edition)	Mainland China / Guiding each province to carry out ASF prevention and control	<input checked="" type="checkbox"/> Surveillance and control of animal diseases <input type="checkbox"/> Food safety <input type="checkbox"/> Animal welfare

ToR: To establish and maintain a network with other OIE Collaborating Centres designated for the same specialty, and should the need arise, with Collaborating Centres in other disciplines

ToR: To carry out and/or coordinate scientific and technical studies in collaboration with other centres, laboratories or organisations

3. Did your Collaborating Centre maintain a network with other OIE Collaborating Centres (CC), Reference Laboratories (RL), or organisations designated for the same specialty, to coordinate scientific and technical studies?

Yes

Name of OIE CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
OIE Reference Laboratory for FMD	Lanzhou/China	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	Epidemiological survey and results analysis of FMD in mainland China
OIE Reference Laboratory for ASF	Qingdao/China	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	Epidemiological survey on ASF in mainland China
OIE Reference Laboratory for Peste des Petits Ruminants(PPR)	Qingdao/China	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	Epidemiological survey on PPR in mainland China
OIE Reference Laboratory for BSE	Qingdao/China	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	Risk Assessment of negligible BSE risk of BSE in mainland China
OIE Reference Laboratory for Newcastle Disease(ND)	Qingdao/China	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	Epidemiological survey on ND in mainland China
OIE CC for Diagnostic Test Validation Science in the Asia Pacific region	Melbourne/Australia	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	Validation of new diagnostics for Mycoplasma bovis.
OIE CC for Epidemiology modelling and surveillance	Teramo/Italy	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East	Specification of technical aspects of GIS systems for zoning

4. Did your Collaborating Centre maintain a network with other OIE Collaborating Centres, Reference laboratories, or organisations in other disciplines, to coordinate scientific and technical studies?

Yes

Name of OIE CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
Murdoch University	Perth/Australia	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	Training, Experts exchange, Technical communication
Department of Livestock Development (DLD)	Department of Livestock Development (DLD) Bangkok/Thailand Africa Americas Asia and Pacific Europe Middle East Training , Technical communication	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	Training , Technical communication
City University of Hong Kong	Hong Kong/ China	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	Training , Technical communication
York University	Toronto/Canada	<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	Training , Experts exchange, Technical communication
Animal Welfare an OIE Bioethical analysis	Palmerston North/New Zealand	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	Completed a review of literature surrounding fish welfare

ToR: To place expert consultants at the disposal of the OIE.

5. Did your Collaborating Centre place expert consultants at the disposal of the OIE?

Yes

Name of expert	Kind of consultancy	Subject
Wang Youming, Shen Chaojian	Asia-pacific Regional Network of Standing Expert Groups on ASF, organized by OIE, Feb-5, 2021.	Current situation and control measures of ASF in China

Wang Youming, Gao Lu	FAO African Swine Fever Global Pool of Expertise	Epidemiological investigation and surveillance of African swine fever in China
Xu Quangang, Gao Shengbin	FMD Prevention and Control in China	24th SEACFMD National Coordinators Meeting
David Hayman	COVID-19 Origins expert group strategy meeting, jointly with WHO	Expert support for the joint WHO, China, OIE WHO-led mission to investigate the COVID-19 Origins
Art Subharat	Regional Project Steering Committee On-Line(Zoom)Meeting for the ASEAN Regional Strengthening of FMD Control in South-East Asia (OIE- MFAT)	Findings of an animal movement survey in Myanmar and Lao PDR
Art Subharat and Chris Compton	Specification of technical aspects of GIS systems for zoning project lead by Institute Zooprofilattico Sperimentale dell Venezia	GIS and zoning
David Hayman	One Health High Level Expert Panel (OHHLEP) expert member	OneHealth advice to WHO, OIE, FAO & WHO

ToR: To provide, within the designated specialty, scientific and technical training to personnel from OIE Member Countries

6. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by the OIE, to personnel from OIE Member Countries?

Yes

- a) Technical visits: 0
- b) Seminars: 1
- c) Hands-on training courses: 4
- d) Internships (>1 month): 0

Type of technical training provided (a, b, c or d)	Content	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
c	Applied epidemiology with a focus on the control and management of transboundary diseases	New Zealand, South East Asia and the Middle East	20
b	Workshop for MPI members about the national Surveillance Information Management System for surveillance and investigations for animal health (Biosecurity NZ).	New Zealand	30

c	training-of-trainers in outbreak investigation and response management	Brunei, Indonesia, Lao PDR, Malaysia, Mongolia, the Philippines, Papua New Guinea, Singapore, Thailand, Timor-Leste, and Vietnam	27
c	Advanced GIS training	Cambodia, China, Indonesia, Lao PDR, Malaysia, Mongolia, the Philippines, Papua New Guinea, Singapore, Thailand, and Vietnam	
c	Study design	China	40

ToR: To organise and participate in scientific meetings and other activities on behalf of the OIE

7. Did your Collaborating Centre organise or participate in the organisation of scientific meetings on behalf of the OIE?

Yes

National/International	Title of event	Co-organiser	Date (mm/yy)	Location	No. Participants
International	Global Expert Group meeting on African Swine Fever	FAO	Mar 2021	Qingdao/China	25
International	Global Symposium on Surveillance and Analysis of PPR	OIE	Jun 2021	Qingdao/China	50
International	Network meeting on Public-private Partnership to Defeat African Swine Fever	OIE and FAO	Jun 2021	Qingdao/China	50
International	The 1st FETPV in the Asia network preparation meeting	FAO	Oct 2021	Qingdao/China	15
International	SEACFMD Joint LabNet and EpiNet Virtual Meeting	OIE	Feb 2021	Qingdao/China	25

ToR: To collect, process, analyse, publish and disseminate data and information relevant to the designated specialty

8. Publication and dissemination of any information within the remit of the mandate given by the OIE that may be useful to Member Countries of the OIE

a) Articles published in peer-reviewed journals: 44

1. Benschop, J., Nisa, S., & Spencer, S. E. F. (2021). Still 'dairy farm fever'? A Bayesian model for leptospirosis notification data in New Zealand. *Journal of The Royal Society Interface*, 18(175), 20200964. doi:doi:10.1098/rsif.2020.0964
2. Bloomfield, S. J., Benschop, J., Midwinter, A. C., Biggs, P. J., Marshall, J. C., Hayman, D. T. S., . . . French, N. P. (2021). Genomic and phenotypic comparison of two *Salmonella* Typhimurium strains responsible for consecutive salmonellosis outbreaks in New Zealand. *International Journal of Medical Microbiology*, 311(7), 151534. doi:https://doi.org/10.1016/j.ijmm.2021.151534
3. Browne, A. S., Midwinter, A. C., Withers, H., Cookson, A. L., Biggs, P. J., Marshall, J. C., . . . French, N. P. (2021). Transmission Dynamics of Shiga Toxin-Producing *Escherichia coli* in New Zealand Cattle from Farm to Slaughter. *Appl Environ Microbiol*, 87(11). doi:10.1128/aem.02907-20
4. Buckle, K., Bueno, R., McFadden, A., van Andel, M., Spence, R., Hamill, C., . . . Mioulet, V. (2021). Detection of Foot-and-Mouth Disease Virus in the Absence of Clinical Disease in Cattle and Buffalo in South East Asia. *Frontiers in Veterinary Science*, 8. doi:10.3389/fvets.2021.691308
5. Burgess, S. A., Aplin, J., Biggs, P. J., Breckell, G., Benschop, J., Fayaz, A., . . . Midwinter, A. C. (2021). Characterisation of AmpC and extended-spectrum beta-lactamase producing *E. coli* from New Zealand dairy farms. *International Dairy Journal*, 117, 104998.
6. Burgess, S. A., Cookson, A. L., Brousse, L., Ortolani, E., Benschop, J., Akhter, R., . . . McDougall, S. (2021). The epidemiology of AmpC-producing *Escherichia coli* isolated from dairy cattle faeces on pasture-fed farms. *J Med Microbiol*, 70(10). doi:10.1099/jmm.0.001447
7. Crump, J. A., Thomas, K. M., Benschop, J., Knox, M. A., Wilkinson, D. A., Midwinter, A. C., . . . Zadoks, R. N. (2021). Investigating the Meat Pathway as a Source of Human Nontyphoidal *Salmonella* Bloodstream Infections and Diarrhea in East Africa. *Clin Infect Dis*, 73(7), e1570-e1578. doi:10.1093/cid/ciaa1153
8. Earl, L., Fang, F., Janes, R., Gedye, K., French, N., Collins-Emerson, J., & Benschop, J. (2021). An evaluation of diagnostic tests in a case series of suspected leptospirosis patients seen in primary care. *N Z Med J*, 134(1539), 33-43.
9. French, N., Jones, G., Heuer, C., Hope, V., Jefferies, S., Muellner, P., . . . Priest, P. (2021). Creating symptom-based criteria for diagnostic testing: a case study based on a multivariate analysis of data collected during the first wave of the COVID-19 pandemic in New Zealand. *BMC Infect Dis*, 21(1), 1119. doi:10.1186/s12879-021-06810-4
10. Gates, M. C., Evans, C. A., Heuer, C., Voges, H., & Weston, J. F. (2021). Temporal trends in bulk tank milk antibody ELISA and PCR test results for bovine viral diarrhoea in New Zealand pastoral dairy herds. *N Z Vet J*, 69(2), 73-82. doi:10.1080/00480169.2020.1806756
11. Greening, S. S., Rawdon, T. G., Mulqueen, K., French, N. P., & Gates, M. C. (2021). Using multiple data sources to explore disease transmission risk between commercial poultry, backyard poultry, and wild birds in New Zealand. *Prev Vet Med*, 190, 105327. doi:10.1016/j.prevetmed.2021.105327
12. Greening, S. S., Zhang, J., Midwinter, A. C., Wilkinson, D. A., Fayaz, A., Williamson, D. A., . . . French, N. P. (2021). Transmission dynamics of an antimicrobial resistant *Campylobacter jejuni* lineage in New Zealand's commercial poultry network. *Epidemics*, 37, 100521. doi:https://doi.org/10.1016/j.epidem.2021.100521
13. Greening, S. S., Zhang, J., Midwinter, A. C., Wilkinson, D. A., McDougall, S., Gates, M. C., & French, N. P. (2021). The Genetic Relatedness and Antimicrobial Resistance Patterns of Mastitis-Causing *Staphylococcus aureus* Strains Isolated from New Zealand Dairy Cattle. *Vet Sci*, 8(11). doi:10.3390/vetsci8110287
14. Haase, C. G., Fuller, N. W., Dzal, Y. A., Hranac, C. R., Hayman, D. T. S., Lausen, C. L., . . . Plowright, R. K. (2021). Body mass and hibernation microclimate may predict bat susceptibility to white-nose syndrome. *Ecology and Evolution*, 11(1), 506-515. doi:https://doi.org/10.1002/ece3.7070
15. Han, J. H., Subharat, S., Wada, M., Vink, D., Phiri, B. J., Sutar, A., . . . Heuer, C. (2021). Impact of risk-based partial vaccination on clinical incidence and seroprevalence of foot and mouth disease in Lao PDR. *Transbound Emerg Dis*. doi:10.1111/tbed.14299
16. Han, J. H., Yoo, D. S., Pak, S. I., & Kim, E. T. (2021). Understanding the transmission of African swine fever in wild boars of South Korea: A simulation study for parameter estimation. *Transbound Emerg Dis*. doi:10.1111/tbed.14403
17. Isaksen, K. E., Linney, L., Williamson, H., Cave, N. J., Beausoleil, N. J., Norman, E. J., & Cogger, N. (2020). TeamMate: a longitudinal study of New Zealand working farm dogs. I. Methods, population characteristics and health on enrolment. *BMC Veterinary Research*, 16(1), 59. doi:10.1186/s12917-020-2273-2
18. Jayasinghe, M., Midwinter, A., Roe, W., Vallee, E., Bolwell, C., & Gartrell, B. (2021). Seabirds as possible reservoirs of *Erysipelothrix rhusiopathiae* on islands used for conservation translocations in New Zealand. *J Wildl Dis*, 57(3), 534-542. doi:10.7589/jwd-d-20-00177
19. Knox, M. A., Garcia-R, J. C., Ogbuigwe, P., Pita, A., Velathanthiri, N., & Hayman, D. T. S. (2021). Absence of *Cryptosporidium hominis* and dominance of zoonotic *Cryptosporidium* species in patients after Covid-19 restrictions in Auckland, New Zealand. *Parasitology*, 148(11), 1288-1292. doi:10.1017/S0031182021000974
20. Lake, R. J., Campbell, D. M., Hathaway, S. C., Ashmore, E., Cressey, P. J., Horn, B. J., . . . French, N. P. (2021). Source attributed case-control study of campylobacteriosis in New Zealand. *Int J Infect Dis*, 103, 268-277.

doi:10.1016/j.ijid.2020.11.167

21. Li J, Jin Z, Wang Y, Sun X, Xu Q, Kang J, Huang B, Zhu H. Data-driven dynamical modelling of the transmission of African swine fever in a few places in China. *Transbound Emerg Dis*. 2021 Oct 16. doi: 10.1111/tbed.14345.
22. Michael, S. A., Hayman, D. T. S., Gray, R., & Roe, W. D. (2021). Risk Factors for New Zealand Sea Lion (*Phocarctos hookeri*) Pup Mortality: Ivermectin Improves Survival for Conservation Management. *Frontiers in Marine Science*, 8. doi:10.3389/fmars.2021.680678
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26. O'Connell, A. B., Irving, A. C., Hughes, P. L., Cogger, N., Jones, B. R., & Hill, K. E. (2021). Evidence for the Continued Occurrence of Chorioretinopathy in Working Sheep Dogs in New Zealand in 2010. *Animals*, 11(8). doi:10.3390/ani11082229
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b) International conferences: 10

1. Guo Fusheng, Shen Chaojian, Liu Hanze. Global Symposium on Surveillance and Analysis of PPR. Qingdao, China, June.2021
2. Guo Fusheng, Shen Chaojian, Liu Hanze. The 1st FETPV in the Asia network preparation meeting. Qingdao, China, Oct. 2021.
3. Liu Hanze, Guo Fusheng, Shen Chaojian. Network meeting on Public-private Partnership to Defeat African Swine Fever. Qingdao, China, June.2021.
4. Wada Masako, Supatsak (Art) Subharat, Ashish Sutar, Ronello Abila, Syseng Khounsy and Cord Heuer. Development of FMD simulation models in endemic settings: Lao PDR as a case study. Modelling in Animal Health conference, 2021
5. Wang Youming, Shen Chaojian. Global Expert Group meeting on African Swine Fever. Qingdao, China, March. 2021
6. Wang Youming, Xu Quangang, Gao Shengbin. SEACFMD Joint LabNet and EpiNet Virtual Meeting. Qingdao, China, Feb.2021.
7. Wang Youming, Xu Quangang, Gao Shengbin. 24th SEACFMD National Coordinators Meeting. Qingdao, China, Oct. 2021.
8. Wang Youming, Gao Lu. OIE-East Asia contact person's meeting. Qingdao, China, June. 2021.
9. Wang Youming, Shen Chaojian, Gao Lu . FAO African Swine Fever Global Pool of Expertise. Qingdao, China, March. 2021.
10. Wang Youming, CaiLijuan, WuXiaodong. African swine fever Seminar between China and Russia. Qingdao, China, Oct. 2021.

c) National conferences: 3

1. National annual meeting on epidemiological survey of major animal diseases. Qingdao, China. May27-28, 2021.
2. Workshop on revision of Technical Guidelines for the Routine Prevention and Control of ASF. Qingdao, China. June 3-4, 2021.
3. Annual meeting on China Field Epidemiology Training Program for Veterinarians. Qingdao, China. Dec 16-17, 2021.

d) Other

(Provide website address or link to appropriate information): 4

1. Phiri, B., Marquetoux, N., 2021. Evaluating the surveillance of transmissible spongiform encephalopathies in New Zealand. *Surveillance* 48, 12-14.
2. Marquetoux, N., Compton, C., 2021. Salmonella study launched this spring - we need your help. *DCV newsletter* 39, 12-13.
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4. David Hayman contributed to World Health Organization. "WHO-convened global study of origins of SARS-CoV-2: China Part." (2021). <https://apo.org.au/sites/default/files/resource-files/2021-03/apo-nid311637.pdf>

9. Additional comments regarding your report: