

# WOAH Collaborative Centre Reports Activities 2023

## Activities in 2023

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### Centre Information

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<b>Name Director of Institute (Responsible Official):</b>	Jon Huxley
<b>Name (including Title and Position) of Head of the Collaborating Centre (WOAH Contact Point):</b>	Prof Naomi Cogger
<b>Name of the writer:</b>	Naomi Cogger

### TOR1 AND 2: SERVICES PROVIDED

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

Category	Title of activity	Scope
Disease control (true)	1. WOA Official Control Program for FMD of China. 2. Formulate national standards of data code and data collection technology for epidemiological investigation of animal diseases. 3. FMD control strategy development for Myanmar and Lao PDR 4. Queenstown, New Zealand Cryptosporidium outbreak investigation and response 5. Leptospira outbreaks investigation and response in New Zealand 6. Ongoing genomics support for the New Zealand Mycoplasma (Mycoplasma) bovis outbreak	1 & 2 Mainland, China. 3. Analysis of movement data, baseline surveys, post-vaccination monitoring, demographic and population density data over 5 years, comparing vaccinated with non-vaccinated ruminant populations. 4. Genotyping laboratory work for a public health response to a potential zoonotic disease outbreak. 5. Formed a national veterinary consortium (veterinary council, vet association, Ministry for Primary Industries, researchers) to support partitioners, disseminate resources and survey for disease incidence. Advise public health, Māori health, regional council, diagnostic labs and communities with detection, diagnoses, and prevention. 6. Technical support for the wider MPI team in the effort to eradicate M bovis
	1. National epidemiological survey plan on major	1. Avian influenza, FMD, ND, PRRS, PPR, CSF, Brucellosis, etc. Mainland China. 2. Sichuan, Guangdong, Henan and Hubei Provinces, Beijing, Xinjiang Uygur Autonomous Region. 3. Heilongjiang and Yunnan Provinces, Inner Mongolia Autonomous Region, Xinjiang Uygur Autonomous Region. 4. Hubei, Gansu and Shaanxi Provinces, Inner Mongolia

<p>Epidemiology, surveillance, risk assessment, (true)</p>	<p>animal diseases. 2. Evaluation of African swine fever detection policy in slaughtering enterprises. 3. Epidemiological survey on the health status and value chain of beef cattle in border areas 4. Epidemiological survey on the reutilization of infected animals. 5. Outbreak investigation of FMD. 6. Supervision on the prevention and control of animal diseases caused by flood disasters 7. Estimating the introduction and establishment risk of Culicoides in New Zealand 8. Description of beehive and equipment movements in New Zealand to inform surveillance 9. Enlisting Kākahi – developing a model system to protect Maui dolphins from toxoplasmosis 10. Antimicrobial resistance (AMR) in the dairy chain in NZ and China 11. Survey and sero-surveillance of at risk workers for Leptospira exposure 12. One Health Surveillance for Anti-microbial use and resistance 13. Risk analysis at the domestic animal/wildlife/human interface, Bwindi Impenetrable Forest National Park, Uganda 14. Likely Pandemic Agents and Scenarios: an Epidemiological and Public Health Framework</p>	<p>Autonomous Region, Xinjiang Uygur Autonomous Region. 5. Chongqing city and Guizhou Province 6. Hebei Province 7. Qualitatively assess the risk of introduction via wind, ships and hitchhiking, and establishment of Culicoides spp. in New Zealand, where they are currently absent 8. Survey-based descriptive analysis of local and long-distance movements of hives and beekeeping equipment and associated biosecurity measures 9. Developing a novel surveillance method to detect pathogen transfer from domestic and feral cats to a critically endangered marine mammal in New Zealand. 10 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 (<a href="https://www.crcc.nz/food-protection">https://www.crcc.nz/food-protection</a>) 11. New Zealand Health Research Funded surveillance to estimate under-ascertainment of leptospirosis in a region of New Zealand 12. Australian Dept of Foreign Affairs and Trade-funded programme 'Mitigating the threat of antimicrobial resistance in Pacific Island countries'. Pacific Islands 13. One Health project in collaboration with local collaborators examining gut microbiota across human-animal and animal-animal boundaries 14. Project led by Te Niwha - Infectious Diseases Research Platform, to help New Zealand prepare for an infectious disease outbreak, including zoonoses</p>
<p>Training, capacity building (true)</p>	<p>1. 7th Cohort of China Field Epidemiology Training Program for Veterinarians (CFETPV)-basic level. 2. 7th Cohort of China Field Epidemiology Training Program for Veterinarians (CFETPV)-advanced level. 3. Extended Training on Veterinary Epidemiology Technology. 4. Applied Epidemiology Training for Veterinarians 5. Informing biosurveillance: Contribution of pteropodid fruit bats to virus spillover in the Philippines: Epidemiology training workshop at the University of Philippines Los Banos, Philippines</p>	<p>1. 61 trainees from 24 provincial &amp; municipal ACDC and 1 national institute. 2. 25 trainees from 18 provincial &amp; municipal ACDC. 3. Chongqing City, Changsha City of Hunan Province; Xinjiang Uygur Autonomous Region, Zhejiang and Shandong Provinces of Mainland China. 4. Trained 18 veterinarians from New Zealand and Asia Pacific Region 5. An international Duke-NUS Medical School, Singapore, led project 'Informing biosurveillance: Contribution of pteropodid fruit bats to virus spillover in the Philippines' working with Research Institute for Tropical Medicine and University of Philippines Los Banos, Philippines, involving veterinarians, ecologists and other expertises.</p>
<p>Zoonoses (true)</p>	<p>1. Dissemination of promotional video on prevention and control of sheep brucellosis. 2. Aquatic Protozoa Analysis and Advice Services 3. Diversity of Cryptosporidium in New Zealand livestock 4. Diagnostic test Validation for leptospirosis 5. Vaccine development for leptospirosis 6. Ongoing work with the New Zealand Food Safety Science and Research Centre (NZFSSRC) 7. CliZod</p>	<p>1. Guizhou, Hubei and Qinghai Provinces of Mainland China. 2. Ministry of Health funded infectious disease surveillance characterizing the zoonotic and non-zoonotic protozoa causing disease in people 3. Massey University Strategic Research Excellence funded genomic characterization of Cryptosporidium species and subtypes from New Zealand livestock 4. New Zealand Health Research Funded project across our veterinary research lab and a human health diagnostic lab to optimize and harmonise a novel genotyping PCR for leptospirosis. 5. Technical and laboratory support with animal pharmaceutical companies to bring a new vaccine (Lepto 4-way) to the market. 6. Work on the investigation of Campylobacter coli/jejuni as a foodborne pathogen using genomics with academic, industry and government stakeholders. PJB is a member of the sector-specific poultry task force of the NZFSSRC 7. Building of an online repository of modelling parameters linking climate and zoonotic diseases published in scientific literature, using artificial intelligence methods – funded by The Wellcome Trust</p>

## TOR3: HARMONISATION OF STANDARDS

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the main focus area for which you were designated

Proposal title	Scope/Content	Applicable area
National standards of data code and data collection technology for epidemiological investigation of animal diseases.	Mainland China / Guiding each province to carry out emergency and specific epidemiological surveys.	health management Veterinary products

3. In exercising your activities, have you identified any regulatory research needs\* relevant for WOA?H?

No

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

Yes

Name of WOA?H CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
WOAH Reference Laboratory for FMD	Lanzhou/China	Asia and Pasific	Epidemiological survey and results analysis of FMD in Mainland China
WOAH Reference Laboratory for ASF	Qingdao/China	Asia and Pasific	Epidemiological survey on ASF in Mainland China
WOAH Reference Laboratory for Peste des Petits Ruminants(PPR)	Qingdao/China	Asia and Pasific	Epidemiological survey on PPR in Mainland China
WOAH Reference Laboratory for Newcastle Disease(ND)	Qingdao/China	Asia and Pasific	Epidemiological survey on ND in Mainland China
WOAH Reference Laboratory for Avian Influenza	Harbin/China	Asia and Pasific	Epidemiological survey on Avian Influenza in Mainland China
WOAH Collaborating Centre for Diagnostic Test Validation	Australia	Asia and Pasific	Improve the use and interpretation of diagnostic tests used in human and animal health
Epidemiology, Training and Control of Emerging Avian Diseases	Padova/Italy	Europe	Collaboration on GeoZone project within the framework of an OIE cooperation project to set out the rules for collecting and sharing zone geospatial data

The WOAHA Collaborating Centre Network for Wildlife Health	NZ/Global	Asia and Pasific	Resource centre for WOAHA to support the wildlife health framework
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## TOR4 AND 5: NETWORKING AND COLLABORATION

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

Yes

Name of WOAHA CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
Murdoch University	Perth/Australia	Asia and Pasific	Training, Technical communication
York University	Toronto/Canada	Americas	Training , Experts exchange, Technical communication

## TOR6: EXPERT CONSULTANTS

6. Did your Collaborating Centre place expert consultants at the disposal of WOAHA?

Yes

NAME OF EXPERT	KIND OF CONSULTANCY	SUBJECT
Wang Youming	FMD Prevention and Control in China	26th SEACFMD National Coordinators Meeting
David Hayman	Ongoing One Health and infectious disease expertise	One Health advice to WHO, WOAHA, FAO & WHO <a href="https://www.who.int/groups/one-health-high-level-expert-panel">https://www.who.int/groups/one-health-high-level-expert-panel</a>
Emilie Vallee	Expertise on data management	Wildlife data management
Naomi Cogger	Advice/Expertise	Member of WOAHA Observancey Committee
David Hayman	1. Keynote presenter for Theme 4, 9-11 October 2023 Senegal 2. Meeting for committee members, 12 October 2023, Senegal 3. Workshop participant, 12 – 13 October 2023, Senegal	1. WOAHA EBO-SURSY project activities: International symposium on emerging and re-emerging zoonotic diseases: focus on viral hemorrhagic fevers in Africa 2. WOAHA EBO-SURSY project activities: Meeting of the EBO-SURSY project advisory committee. 3. WOAHA EBO-SURSY project activities: Technical workshop for WOAHA focal points – Improving monitoring protocols; integrating scientific recommendations
David Hayman	Chair of the ad hoc next generation information systems	Chair of the ad hoc next generation information systems group. Inaugural meeting 24/10/23

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David Hayman	Co-chair of the WOAHC collaborating centre network: Inaugural meeting of core leadership 20-21 November 2023	The WOAHC Collaborating Centre Network for Wildlife Health
David Hayman	Chair of the ad hoc next generation information systems group. Meeting 22-24 November 2023	The WOAHC ad hoc group for next generation wildlife health information systems
David Hayman	Participant at the ad hoc group's meeting on emerging diseases and drivers of disease emergence in animals, 5-7 December 2023	The WOAHC ad hoc group on emerging disease in animals

## TOR7: SCIENTIFIC AND TECHNICAL TRAINING

7. Did your Collaborating Centre provide advice/services to requests from Members in your main focus area?

No

8. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by WOAHC, to personnel from WOAHC Members?

No

## TOR8: SCIENTIFIC MEETINGS

9. Did your Collaborating Centre organise or participate in the organisation of scientific meetings related to your main focus area on behalf of WOAHC?

Yes

NATIONAL/INTERNATIONAL	TITLE OF EVENT	CO-ORGANISER	DATE (MM/YY)	LOCATION	NO. PARTICIPANTS
International	FAO Asia and the Pacific Regional Consultation Meeting on Veterinary Epidemiology Capacity Development	FAO	2023-04-29	Bangkok/Thailand	40
International	26th SEACFMD National Coordinators meetings	WOAHC	2023-08-22	Kuala Lumpur/Malaysia	50
International	SEACFMD Laboratory Network Meetings	WOAHC	2023-10-24	Lanzhou/ China	50
International	Seminar on Global Burden of Animal Disease (GBADs) Programme	CAHEC, University of Liverpool, Murdoch University, CSIRO	2023-07-10	Qingdao/ China	20
International	Seminar on the further cooperation in the fields of veterinary epidemiology and TAD prevention and control	FAO	2023-07-26	Qingdao/ China	15

## TOR9: DATA AND INFORMATION DISSEMINATION

10. Publication and dissemination of any information within the remit of the mandate given by WOAHC that may be useful to Members of WOAHC

a) Articles published in peer-reviewed journals:

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1. Liu P, Zhang Y, Tang H, Wang Y, Sun X. Prevalence of *Streptococcus suis* in pigs in China during 2000-2021: A systematic review and meta-analysis. *One Health*. 2023 Feb 18;16:100513. doi: 10.1016/j.onehlt.2023.100513. PMID: 37363255; PMCID: PMC10288055.

2. Yang L, Fan M, Wang Y, Sun X, Zhu H. Effect of avian influenza scare on transmission of zoonotic avian influenza: A case study of influenza A (H7N9). *Math Biosci*. 2024

Jan;367:109125. doi: 10.1016/j.mbs.2023.109125. Epub 2023 Dec 10. PMID: 38072124.

3. Wang Y, Vallée E, Compton C, Heuer C, Guo A, Wang Y, Zhang Z, Vignes M. A novel Bayesian Latent Class Model (BLCM) evaluates multiple continuous and binary tests: A case study for *Brucella abortus* in dairy cattle. *Prev Vet Med.* 2024 Jan 12;224:106115. doi: 10.1016/j.prevetmed.2024.106115. Epub ahead of print. PMID: 38219433.
4. Gai Wenyang, Qi Qian, Liu Ping. Epidemic status and prevention and control suggestions of canine brucellosis [J]. *China Animal Health*, 2023,25 (7): 9-10
5. Yang Juan; Peng Qifeng; Liu Ping; Zhang Renjun; Lu Mei; Li Jida; Wang Youming; Li Yan; Yin Yanbo; Zhang Yi. Application progress of liquid chip technology in the detection of disease-related genes [J], *Biotechnology*, 2023,33(02):254-259+267. DOI:10.16519/j.cnki.1004-311x.
6. Chen Feng; Liu Ping; Zhang Dong; Xu Dong; Lv Guixia; Yuan Kai; Cao Zhenshan; Zhang Yue; Wang Youming; Lan Zouran . A Case-control Study on Brucellosis in Sheep Farms in Shandong Province [J]. *China Animal Health Inspection*, 2023,40(04):30-36.
7. Gan Zhe, Li Tingting, Pei Jie, Shen Chaojian, Huang Tao, Xie Jun. Evaluation on the Effect of Field Epidemiology Training Program for Veterinarians in Hubei Province[J], *China Animal Health Inspection*, 2023,40(08):39-44.
8. Chen Yingyu;Shen Chaojian;Guo Aizhen. Curriculum Construction and Trainings for Professionals Related to Veterinary Epidemiology in the New Era[J], *China Animal Health Inspection* ,2023,40(01):48-51.
9. Huang Baoxu;Wang Yuanyuan;Wang Kaicheng;Gao Lu;Gao Shengbin;Li Weihua. Strengthening Animal Disease Prevention and Control to Contribute to Comprehensive Rural Revitalization[J], *China Animal Health Inspection* ,2023,40(04):1-4.
10. Authored by the members of the One Health High-Level Expert, Panel, Markotter, W., Mettenleiter, T. C., Adisasmito, W. B., Almuhairi, S., Barton Behravesh, C., Bivolgou, P., Bukachi, S. A., Casas, N., Cediel Becerra, N., Charon, D. F., Chaudhary, A., Ciacci Zanella, J. R., Cunningham, A. A., Dar, O., Debnath, N., Dungu, B., Farag, E., Gao, G. F., Hayman, D. T. S., Khaitsa, M., Koopmans, M. P. G., Machalaba, C., Mackenzie, J. S., Morand, S., Smolenskiy, V., & Zhou, L. (2023). Prevention of zoonotic spillover: From relying on response to reducing the risk at source. *PLoS Pathog*, 19(10), e1011504
11. Beasley, L. H., Cogger, N., & Compton, C. (2023). Use of equine chorionic gonadotropin in lactating dairy cattle: a rapid review. *N Z Vet J*, 71(2), 53-64
12. Clark, B., Steel, C., Vokes, J., Shan, J. R., Gedye, K., Lovett, A., & Sykes, B. W. (2023). Evaluation of the effects of medium-term (57-day) omeprazole administration and of omeprazole discontinuation on serum gastrin and serum chromogranin A concentrations in the horse. *J Vet Intern Med*, 37(4), 1537-1543
13. Coker, S. M., McInnes, K., Vallee, E., Biggs, P., Pomroy, W. E., Howe, L., & Morgan, K. J. (2023). Molecular characterisation and additional morphological descriptions of *Eimeria* spp. (Apicomplexa: Eimeriidae) from brown kiwi (*Apteryx mantelli* Bartlett). *Syst Parasitol*, 100(3), 269-281
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16. Garcia, R. Jc, & Hayman, D. T. S. (2023). A review and analysis of cryptosporidiosis outbreaks in New Zealand. *Parasitology*, 150(7), 606-611
17. Garcia, R. Jc, Pita, A. B., Velathanthiri, N., Pas, A., & Hayman, D. T. S. (2023). Mammal-related *Cryptosporidium* infections in endemic reptiles of New Zealand. *Parasitol Res*, 122(5), 1239-1244
18. Gedye, K., Poole-Crowe, E., Shepherd, M., Wilding, A., Parton, K., Lopez-Villalobos, N., & Cave, N. (2023). Prevalence of the ABCB1-1Delta gene mutation in a sample of New Zealand Huntaway dogs. *N Z Vet J*, 71(3), 133-136
19. Gonzalez Daza, W., Muylaert, R. L., Sobral-Souza, T., & Lemes Landeiro, V. (2023). Malaria Risk Drivers in the Brazilian Amazon: Land Use-Land Cover Interactions and Biological Diversity. *Int J Environ Res Public Health*, 20(15)
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22. Gulliver, E. L., Hunter, S. A., Vallee, E., & Castillo-Alcala, F. (2023). Causes of mortality of kiwi (*Apteryx* spp.) in New Zealand: a retrospective analysis of post-mortem records, 2010-2020. *N Z Vet J*, 71(2), 75-85
23. Han, J. H., Yoo, D. S., & Lee, C. M. (2023). Effect of a Mismatched Vaccine against the Outbreak of a Novel FMD Strain in a Pig Population. *Animals (Basel)*, 13(19)
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27. Hayman, D. T. S., Barraclough, R. K., Muglia, L. J., McGovern, V., Afolabi, M. O., N'Jai, A. U., Ambe, J. R., Atim, C., McClelland, A., Paterson, B., Ijaz, K., Lasley, J., Ahsan, Q., Garfield, R., Chittenden, K., Phelan, A. L., & Lopez Rivera, A. (2023). Addressing the challenges of implementing evidence-based prioritisation in global health. *BMJ Glob Health*, 8(6)
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b) International conferences:

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1. Xu Quangang. *FAO Asia and the Pacific Regional Consultation Meeting on Veterinary Epidemiology Capacity Development*. Bangkok, Thailand, April, 2023.

2. Wang Youming. *26th SEACFMD National Coordinators Meeting*. Kuala Lumpur, Malaysia, July, 2023.

3. Wang Youming. *SEACFMD Laboratory Network Meetings*. Lanzhou, China, Oct, 2023.

4. Staffs from the division of Epidemiology Survey. *Seminar on Global Burden of Animal Disease (GBADs) Programme*, Qingdao, China, July, 2023.

5. Staffs from the division of Epidemiology Survey. *Seminar on the further cooperation in the fields of veterinary epidemiology and TAD prevention and control*, Qingdao, China, July, 2023.

c) National conferences:

11

1. *National annual meeting on epidemiological survey of major animal diseases*. Hefei, China. April, 2023.

2. *Technical meeting on National Medium - and Long Term Animal Disease Prevention and Control Plan*. Qingdao, China. Sep, 2023.

3. *Technical meeting on the Requirements for Risk Models and Early Warning Systems for the Introduction of Foreign Animal Diseases*, Qingdao, China. June, 2023.

4. *Technical meeting on Risk Assessment, Intelligent Warning and Control System for Emerging and Exotic Animal Diseases*, Qingdao, China. Nov, 2023.

5. Wada, Liu, Vallee, Marshall, Watts, Sood, Macara, Morris (2023). *Finding climate change impacts on animal health using syndromic surveillance data – machine learning approach*. NZVA annual conference 2023

6. Vallee, Wada (2023). *Climate change and zoonotic diseases in New Zealand: what we know, what we need*. NZVA annual conference 2023

7. Benschop, Vallee, Collins-Emerson, Fayaz, Littlejohn, Prinsen, Marshall, Yeung, Baker, Holdaway, Douwes, Quin, Nisa (2023). *Who gets leptospirosis cases in Aotearoa*. NZVA annual conference 2023

8. Wang, Vignes, Vallee, Heuer, Compton (2023). *Bayesian evaluation of four serological tests for the diagnosis of *Brucella abortus* in dairy cows*. NZVA annual conference 2023

9. Vallee & Wada, *The use of artificial intelligence in epidemiological research and disease surveillance – case studies linking climate and health data*, One Health Aotearoa Symposium 2023

10. Nisa, Wilkinson, Edwards, Shum, Moinet, Anderson and Benschop (2023). *Molecular typing of *Leptospira* spp. in farmed and wild mammals in New Zealand*. New Zealand Vet Association Conference, May, Wellington

11. Benschop (2023). *One Health: Issues exercising the Veterinary Profession*. New Zealand Vet Association Conference, May, Wellington

d) Other (Provide website address or link to appropriate information):

2

1. Vallee, Borman, Read, Wada; *First the floods, then the diseases – why NZ should brace for outbreaks of spillover infections from animals*; *The Conversation*

2. Hayman, *Te Niwha report*: [https://teniwha.com/assets/Resources/Te-Niwha\\_Full-Report\\_Likely-future-pandemic-agents-and-scenarios\\_Web.pdf](https://teniwha.com/assets/Resources/Te-Niwha_Full-Report_Likely-future-pandemic-agents-and-scenarios_Web.pdf)

11. What have you done in the past year to advance your area of focus, e.g. updated technology?

12. Additional comments regarding your report: