



***ECVPH – Resident Workshop: 24-26 June 2020, Basel, Switzerland***

**Advanced “One Health” Short-course**  
**Interactive Webinar**

**Lecturers:** Jakob Zinsstag, Nakul Chitnis, Jan Hattendorf

**Aim:** The seminar provides theoretical and practical insight to “One health” for ECVPH Residents. At the end of the short-course, the residents are able to conceptualize their own animal-human transmission models and “One health” studies.

**Content:**

This short-course provides insight and practical work on “One Health” methods. It is presented by a veterinary epidemiologist, a statistician and a mathematician. The audience are residents (in good standing) of the European College for Veterinary Public Health (ECVPH). The Seminar is composed of lectures, self-study, discussions and practical seminar work on:

- Theoretical foundations of “One health”
- One health study design
- Ecology of the animal-human interface
- Antimicrobial resistance surveillance
- Dynamics and economics of cross-species disease transmission
- The students will work through a practical example of an animal-human transmission model and a cross-sector economic analysis of an intervention.

A five page paper will be prepared by each resident during the workshop and presented (ten minutes) at the end of the seminar. The written paper consists of a One Health study plan of the transmission dynamics of a selected zoonosis or non-communicable disease with a plan for an economic assessment. A pass/fail mark will be given for the written paper and presentation.

**Venue:** This course will be offered as an **interactive webinar** via Zoom.

**Registration:** Please contact Dr. Lisa Crump at [lisa.crump@swisstph.ch](mailto:lisa.crump@swisstph.ch)  
(Registration closes on 15 June; maximum of 20 participants)

**Registration fee:** As this Workshop for ECVPH Residents is approved and supported by ECVPH, there is **NO registration fee** for ECVPH resident candidates.

## PROGRAMME

Date	Content	Comments/readings
<b>Wed 24.6.2020</b>		
9.00-10.00	Introduction to the course, presentation of participants and their backgrounds	(Participants share their motivation and expectations for webinar.)
10.00-10.30	Break	
10.30-12.00	Introduction to advanced One Health Methods / Integrated surveillance (Jakob Zinsstag)	(Zinsstag, 2015) Chapter 5
13.30-15.00	Dog-human rabies transmission dynamics: From simple to deterministic models to metapopulation matrix models (Nakul Chitnis)	(Zinsstag et al., 2017; Laager et al., 2019)
15.00-15.30	Break	
15.30-17.00	One Health economics: the example of rabies (Jakob Zinsstag)	(Mindekem et al., 2017)
17.00-17.30	Selection of assessment topics	(Groups are organized)
<b>Thu 25.6.2020</b>		
09.00-10.00	Economics of brucellosis control (Jakob Zinsstag)	(Roth et al., 2003; Zinsstag et al., 2009; Narrod, 2012)
10.00-10.30	Break	
10.30-12.00	Models and "Reality" (Jan Hattendorf)	
13.30-15.00	Analysing multi-host transmission models: case example of opisthorchiasis in Lao PDR (Nakul Chitnis)	
15.30-16.00	Break	
16.00-18.00	Group study / preparation of assignments	Each group provided access to a virtual meeting room.
<b>Fri 26.6.2020</b>		
9.00-09.45	Introduction to One Health approaches on antimicrobial resistance (Jakob Zinsstag)	(Nguyen-Viet et al., 2009)
9.45-10.15	Break	
10.15-12.00	One Health Transdisciplinary Methods (Jakob Zinsstag)	(Guatemala video) MOOC TD: <a href="http://bit.ly/tdmooc">http://bit.ly/tdmooc</a>
13.00-16.00	Finalize course assignment	Each group provided access to a virtual meeting room.
16.00-16.15	Break	
16.15-18.00	Presentations by participants	

## Literature

- Laager, M., Lechenne, M., Naissengar, K., Mindekem, R., Oussiguere, A., Zinsstag, J., Chitnis, N., 2019. A metapopulation model of dog rabies transmission in N'Djamena, Chad. *Journal of theoretical biology* 462, 408-417.
- Mindekem, R., Lechenne, M.S., Naissengar, K.S., Oussiguere, A., Kebkiba, B., Moto, D.D., Alfaroukh, I.O., Ouedraogo, L.T., Salifou, S., Zinsstag, J., 2017. Cost Description and Comparative Cost Efficiency of Post-Exposure Prophylaxis and Canine Mass Vaccination against Rabies in N'Djamena, Chad. *Front Vet Sci* 4, 38.
- Narrood, C., Zinsstag, J., Tiongco, M., 2012. A one health framework for estimating the economic costs of zoonotic diseases on society. *EcoHealth*.
- Nguyen-Viet, H., Zinsstag, J., Schertenleib, R., Zurbrugg, C., Obrist, B., Montangero, A., Surkinkul, N., Kone, D., Morel, A., Cisse, G., Koottatep, T., Bonfoh, B., Tanner, M., 2009. Improving environmental sanitation, health, and well-being: a conceptual framework for integral interventions. *EcoHealth* 6, 180-191.
- Roth, F., Zinsstag, J., Orkhon, D., Chimed-Ochir, G., Hutton, G., Cosivi, O., Carrin, G., Otte, J., 2003. Human health benefits from livestock vaccination for brucellosis: case study. *Bull. World Health Organ* 81, 867-876.
- Zinsstag, J., Durr, S., Penny, M.A., Mindekem, R., Roth, F., Menendez Gonzalez, S., Naissengar, S., Hattendorf, J., 2009. Transmission dynamics and economics of rabies control in dogs and humans in an African city. *PNAS* 106, 14996-15001.
- Zinsstag, J., Lechenne, M., Laager, M., Mindekem, R., Naissengar, S., Oussiguere, A., Bidjeh, K., Rives, G., Tessier, J., Madjaninan, S., Ouagal, M., Moto, D.D., Alfaroukh, I.O., Muthiani, Y., Traore, A., Hattendorf, J., Lepelletier, A., Kergoat, L., Bourhy, H., Dacheux, L., Stadler, T., Chitnis, N., 2017. Vaccination of dogs in an African city interrupts rabies transmission and reduces human exposure. *Science translational medicine* 9.
- Zinsstag, J., Schelling, E., Waltner-Toews, D., Whittaker, M., Tanner, M., 2015. *One Health: The theory and practice of integrated health approaches*. CABI.