

# AAVMC One Health Case Study Proposal



## **Q fever in the Suburbs: Zoonotic Disease Outbreak Tabletop Training Exercise**

Armando E. Hoet<sup>1,2,\*</sup>, Joanne Midla<sup>3</sup>, Jeanette O'Quin<sup>1</sup>, Jason Stull<sup>1</sup>, the Ohio One Health Alliance working group<sup>4</sup>.

<sup>1</sup> Veterinary Preventive Medicine Department, College of Veterinary Medicine, <sup>2</sup> Division of Epidemiology, College of Public Health, The Ohio State University; <sup>3</sup> Zoonotic Disease program, Ohio Department of Health; <sup>4</sup> Ohio Department of Agriculture, Division of Animal Health; United States Department of Agriculture, Animal and Plant Health Inspection Services, Veterinary Services; USAF School of Aerospace Medicine; Wright State university; and The Ohio State University.

\* Corresponding author:

Armando E. Hoet, DVM, Phd, DACVPM  
Director, Veterinary Public Health Program  
Department of Veterinary Preventive Medicine  
College of Veterinary Medicine  
The Ohio State University  
A100Q Sisson Hall  
1920 Coffey Road, Columbus, Ohio 43210  
614-292-0684, 614-292-4142 (fax)  
<http://vet.osu.edu/vph-mph>

## 1. Component(s) of the One Health Framework addressed

The main component to be addressed in this proposal belong to the section on “Microbiologic influences on health and disease”, specifically how to respond to “long standing and re-emergent diseases” that can affect the community as well as agriculture. In addition, the “Environmental Health” section will also be addressed in this scenario as the environment will play a key role in disease exposure of the community.

Specific subcomponents, such as the ones listed below, will also be covered in the proposed scenario:

- Early detection and actions to avoid spread of this pathogen from animal populations to humans.
- Mechanisms of disease transmission from animals to human disease
- Impact on human health by this pathogen in a population (as well as potential impact in agriculture)
- Interprofessional actions involving the health care and public health systems on how to respond to this disease in the community
- Options to manage and prevent the zoonotic transmission of this disease applying One Health principles

## 2. Targeted Student Audience(s)

We have pilot tested this type of case scenario methodology within the Annual Health Professionals Summit organized at The Ohio State University, which is “an annual interprofessional event organized by students intended to improve understanding of issues affecting the delivery and practice of One Health and increase collaboration among future health-professional leaders.” **Professional students that participated included dentistry, law, medicine, nursing, pharmacy, public health, optometry, social work and veterinary medicine, among others.** We have also included this type of scenario in different graduate level courses, as well as in electives and capstone courses that are part of the veterinary curriculum at OSU.

**Therefore, the case scenario to be developed in this proposal will primarily target these groups of health professional and graduate students,** but it would be “flexible” enough that could be used with other audiences (including continuing education for professionals from different fields).

## 3. Synopsis of case study

Efforts to prevent and control the spread of emerging/re-emerging zoonotic diseases require a coordinated interdisciplinary response by public health professionals. We propose the development of a participative zoonotic disease outbreak tabletop exercise. The realistic scenario will focus on a zoonotic outbreak (Q Fever) affecting a suburban community. Due to the classification of this biological agent as Category-B, as well as its potential agricultural origin and multiple transmission pathways (aerosol, foodborne, waterborne, direct contact), an outbreak of this disease in the community must involve multiple agencies and professionals. Therefore, as the scenario develops, participants will engage in group discussion and decision-making opportunities designed to simulate a multiagency response. Through this exercise it is expected for students to learn about the role of their chosen profession in a zoonotic outbreak as well as the roles of other professions including public health, human and animal health, environmental health, law enforcement and emergency management. In recent years, we have successfully created similar types of scenarios (e.g. AI, Rabies, Tuberculosis) in collaboration with a multidisciplinary panel (DVMs, MDs, nurses, EMS, epidemiologists) from different public health and agricultural/veterinary agencies as well as academia. Using those scenarios, over 600 public health officials as well as veterinary and graduate students have been trained. The critical reviews from such audiences will be used to further develop the Q-Fever case to target the needs of professionally and geographically diverse health students. The completed interactive exercise will have two distinct formats: one for small groups (workshop style), and one for large classes (conference style).