Workshop: Outbreak Investigation – Detect, Explore, Act

Motivation: We live in a world that is experiencing commonplace and unique outbreaks in both human and animal populations. It is crucial to be able to detect if an outbreak is occurring and know how to promptly step in to describe, analyze and manage the outbreak. The importance of communication in prevention and control will be discussed. This workshop explores the basic principles and steps in investigating and managing outbreaks. We will have detailed information and practical exercises for the key components and provide brief introduction to some more advanced topics related to outbreak investigation. All scheduled days will be a mix of lecture, group discussions and practical exercises. This workshop is designed as an interactive workshop with participant engagement and sharing of knowledge a key focus. We wrap the workshop up with a simulated outbreak exercise.

Learning Objectives:

Day 1 – Identifying and describing an outbreak - From determination of an outbreak to exploration of the cases

Day 2 – Exploring sources of an outbreak - Formulating and testing hypotheses using analytical epidemiology

Day 3 – Managing an outbreak – Communicating, managing and implementing action

We'll wrap up with a practical group exercise: "Control This Outbreak"

Who should attend: Students/academics and health professionals who want to investigate/control disease events. No prior experience necessary. Background reading will be provided. However, a basic familiarity with epidemiology terms and infectious disease principles can be an asset.

Contact Information: Dr. Tasha Epp, tasha.epp@usask.ca

Workshop specifications:

- When: August 14 to 16, 2022 in Charlottetown, PEI.
- Offered in English.
- REGISTER EARLY. Registration will be limited to 30 participants. ISVEE conference attendees will be given preferential access to workshop registration for a limited time.
- This workshop will be offered completely in an in-person format. Online participation is not available.
- It is preferred [not required] that each participant brings their own computer. No special software required, Microsoft Word and Excel will be used.
- Learning material will be provided digitally.

Schedule:
The workshop will run from 8:30 to 4:30. A one hour lunch break will be scheduled. The afternoon of the third day will wrap up by 4 PM.

Day / Time	**Activity**	**Detail**
DAY 1 – DETECT AND DESCRIBE		
Day 1 – Morning*	Overview of Outbreak Investigation and the Importance of Identifying Cases	We'll review the steps of an outbreak investigation and focus on approach to understanding if observed events are an 'outbreak'. We will cover steps for verifying the diagnosis including the concepts of diagnostic test validity and the use of diagnostic tools. We will finish up with a focus on the development of case definitions.
Lunch		
Day 1 – Afternoon*	Outbreak Descriptive Epidemiology	We will provide a quick review of measures of disease frequency. The remainder of the afternoon will be focused on describing outbreaks in relation to the patterns of animal characteristics, time, and location. This will include the building and interpretation of epidemic curves. An introduction to key concepts in spatial epidemiology will be provided.
DAY 2 – EXPLORE THE OUTBREAK		
Day 2 – Morning*	Data Collection for Outbreak Investigation	This portion of the workshop will cover sampling approaches, study design options, and sample size considerations for planning an investigation. There will be a special focus on the principals of designing questions for surveys and an exploration of interview approaches and techniques.
Lunch		
Day 2 – Afternoon*	Analyzing Information from an Outbreak Investigation	We will review the measures of effect important to understand in outbreak investigation. Important techniques to support interpretation of analysis such as standardization and control of confounding will also be covered. Measures will include odd's ratios, risk ratios and the attributable fraction. We will include discussion of approaches for analysis for multiple variables associated with outcomes. We will practice calculating and interpreting measures with real life case examples. The outbreak specific tools of trace-out/ trace-back and network analysis will be presented.

Day / Time	Activity	Detail
DAY 3 – DEAL WITH IT		
Day 3 – Morning*	Key Aspects in Implementing Control Strategies	This portion of the workshop will look at the human factors that are important in successfully implementing disease control decisions. We will cover the consideration of team composition for the investigation, outline the concept of the incidence command structure, introduce behavioural economics theory, and discuss principles of risk communication.
LUNCH		
Day 3 – Afternoon*	The afternoon of the last day will be dedicated to a table top exercise – a 'Real' Outbreak	This will be done as a group oriented activity aimed at giving participants the opportunity to put into practise concepts and skills learned in the workshop.

* Breaks will be woven into the schedule for each morning and afternoon session.

Components of the workshop are drawn from Dr. Epp's graduate course in Field Epidemiology offered alternately with a focus on Animal Health or Public Health at the University of Saskatchewan.

Connect:

For more information visit our website:

Centre for Applied Epidemiology

https://wcvm.usask.ca/the-college/centres/centre-for-applied-epidemiology.php#Welcome

Information about workshop organizers:

Tasha Epp, DVM, PhD
Associate Professor, Epidemiology (Zoonotic Diseases); Large Animal Clinical Sciences, Western College of Veterinary Medicine (WCVM); Joint appointment; School of Public Health, University of Saskatchewan; Director, Centre for Applied Epidemiology, WCVM.

Tasha Epp completed her Doctorate of Veterinary Medicine from the Western College of Veterinary Medicine in 2000 and a PhD in 2007 focusing on the epidemiology of West Nile virus in Saskatchewan horses. From 2003 to 2005, Tasha contributed equine surveillance information to the collective West Nile surveillance initiative in the province. Dr. Epp joined the faculty of the Western College of Veterinary Medicine in January 2007 as an Associate Professor. Her position was a 50% joint appointment with the University of Saskatchewan's School of Public Health, where her contribution was focused on epidemiology. Her current research focuses on dog population and dog bite issues for First Nations', Metis, rural and remote communities in Saskatchewan and assessing the feasibility of surveillance for companion animal diseases within western Canada. She is the Director of the Centre for Applied Epidemiology, which focuses on training, research and service as it applies to the application of epidemiology of real world problems.

Sarah Parker, DVM, PhD

Assistant Director, Centre for Applied Epidemiology, Large Animal Clinical Sciences, Western College of Veterinary Medicine (WCVM), University of Saskatchewan;

Sarah Parker completed her Doctorate of Veterinary Medicine from the Western College of Veterinary Medicine in 1995. She completed a Master of Veterinary Science in 1997 at the WCVM focusing on diagnostic test evaluation. She worked for 9 years with the Canadian Food Inspection Agency, in the Food and Animal Parasitology Laboratory, providing diagnostic test development and supporting diagnostic management. She completed a PhD in Epidemiology with the Ontario Veterinary College, University of Guelph in 2017, focusing on decision analysis to support disease control activities in zoonotic disease. Since 2016 she has been the Assistant Director of the Centre for Applied Epidemiology. Sarah's main focus is to provide research design and statistical support to researchers and students at the WCVM. Along with being involved in training and service delivered by the Centre, she is the manager for the Disease Investigation Unit directed by Dr. John Campbell.