Animal Health in Indonesia

Basic Field Epidemiology

**Course Outline**



# Overview

This training course was developed as part of the Australian Indonesian Partnership for Emerging Infectious Disease – Animal Health Program.

The overarching aim for Component 2.1 of the AIP-EID Animal Health Program is to improve the collection, management and use of animal health information to improve capacity for effective disease control and prevention*.*

The training in field epidemiology has been developed to provide veterinary and para-veterinary field staff with the skills required to collect high quality surveillance data, and to make better decisions on the basis of the data collected.

The basic field epidemiology course has been designed for training of para-veterinarians. It may also be attended by veterinarians as a refresher course.

Field epidemiology is the application of general epidemiology skills to problems occurring *in the field*. Field epidemiology skills are necessary to being able to identify and describe diseases in animals, to understand causes of disease and how diseases behave in a population, to guide the systematic investigation of disease in animals and to plan, implement and assess disease control activities.

An advanced field epidemiology resource book has also been developed and is intended to provide a basis for future training of veterinarians in more advanced field epidemiology skills.

# Basic Field Epidemiology

## Competency statement

*A competency statement is a description of what an individual may be expected to be able to do to be successful in their work.*

For a para-veterinarian to be able to use field epidemiology skills together with individual animal clinical skills to provide diagnostic, treatment and disease prevention services for the benefit of Indonesian livestock and their owners.

In order to achieve this, para-veterinarians working in village settings with limited resources need to be able to:

* Explain the difference between sign or syndrome, disease and diagnosis;
* Describe a systematic approach to investigation of disease in animals that involves collection of evidence through history, clinical examination, environmental examination and laboratory testing;
* Understand causes of disease and how to use this information to assess and explain options for farmers to treat and prevent diseases in their livestock;
* Contribute data and information into and use information derived from relevant Animal Health Information Systems such as iSIKHNAS to assist in the above activities.

## Evaluation of participant performance

Participants will be evaluated on a combination of the following:

* Attendance and active participation in discussion in all sessions.
* Completion of exercises and short-answer questions either individually or in groups as required during the training

## Course structure and delivery approach

The *Basic Field Epidemiology* course is designed to be delivered over 3 days. Each day is divided into four, 1.5 hour sessions. The course is designed to be delivered by Facilitators with skills in facilitation of training and not necessarily technical expertise in veterinary epidemiology. Facilitators will be supported by the Facilitator’s manual, PowerPoint or video training material, and resource kit for participants.

Each session (1.5 hours) will consist of:

* A PowerPoint or video to present important technical content
* Discussion to clarify important concepts
* Activities to practice and reinforce concepts
* Feedback and evaluations to confirm understanding

## Course resources

The *Basic Field Epidemiology* course resource documents will be provided in English and key documents and video material will be translated into Bahsa Indonesian.

The *Basic Field Epidemiology* training package includes the following;

* **Facilitator’s guide** – to be provided to all facilitators.

Containing detailed information with lesson plans arranged for each session and learning objective. Important points will be accompanied with suggestions for additional material to be covered, questions and examples to be posed by the facilitators and expected responses as well as tips for facilitating responses.

* **Basic Field Epidemiology Resource Book –** to be accessible toall facilitators and participants.

An easy-to-read book containing the content covered in the course. The manual will be used by facilitators and participants as reference material during the course and afterwards. The manual will also be made available online and as a PDF file that can be downloaded and viewed on any computer or tablet device.

* **Participant Manual –** to be provided toall participants.

An easy-to-read concise manual containing the key concepts covered in the course. The manual will be used by participants as reference material during the course and afterwards.

* **PowerPoint files for each session** **–** to be delivered by facilitators

All sessions with technical content (excluding first and last session) will have two PowerPoint files developed as part of the training package.

The Facilitator PowerPoint file is intended to be presented by the facilitator with the facilitator speaking live to each slide. This file will include activities and discussion points to be managed by the facilitator. There is scope for facilitators to add their own touches including images etc to this file.

The Content PowerPoint file is intended to be prepared in Indonesian as a recorded voice-over that can be run like a video. This file will present the technical content and key concepts for each session. The purpose in recording these is that effort can be invested in recording uniformly high quality material than can be delivered to provide consistent and uniform delivery of the material.

* **Administration documents** - to be provided toall facilitators to ensure that courses are prepared and delivered to a uniform standard. These documents include:
	+ Participant pre-course information,
	+ Training course preparation checklist,
	+ Attendance and assessment list,
	+ Evaluation forms - to be completed by participants at the conclusion of the course to provide feedback to the facilitators and program managers.
	+ Certificate template.
* **Online support –** Teaching materials, videos/powerpoints and additional learning resources will be made available through a custom developed website that will be developed to enhance the teaching program.

Additional online resources and capacity may be developed depending on internet availability and accessibility including participant registration, course evaluation and participant assessment tools

## Course sessions and objectives

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| **Basic field epidemiology training for animal health in Indonesia** |
| **Session** | **Session Objectives** |
| Session 1: Welcome and introduction | Have shared recent work experiences and opinions about their work and the benefits of better support with training or resources |
| Have met facilitators and other participants and made to welcome |
| Have shared recent work experiences and opinions about their work and the benefits of better support with training or resources |
| Understand the structure and schedule, and the role of evaluation of the training course |
| Have developed the ground rules for the training course by consensus |
| Session 2: Overview of Field Epidemiology | Describe the main roles of Para-veterinarians |
| Explain the relevance of epidemiological skill to para-veterinary work |
| Describe the overall concept of epidemiology |
| Understand the importance of both veterinary clinical skills and field epidemiology skills in animal health |
| Explain how epidemiology skills help prevent zoonosis |
| Session 3: Signs, syndromes, and making a diagnosis | Describe the effect of disease on animal health and production |
| List possible signs of disease |
| Define a syndrome |
| Explain the difference between a differential diagnosis list and a definitive diagnosis |
| Session 4: Disease investigation | Describe a systematic approach to disease investigation |
| Explain how to collect and use information from the investigation process to modify the differential diagnosis list and identify a likely diagnosis |
| Session 5: Causes of disease | Explain how and why disease occurs in some animals and not in others |
| Session 6: How disease progresses | Outline the infectious disease progression in individuals and populations |
| Session 7: Transmission and spread of disease | Understand methods of transmission, spread and maintenance for infectious diseases of animals  |
| Session 8: Using a field epidemiology approach to larger disease investigations | Understand when a systematic epidemiology approach to larger disease events or outbreaks will be useful |
| Describe the cases and assign animals to cases and non-cases based on initial findings |
| Session 9: Collecting data and counting cases | Describe how you would collect data on cases and non-cases |
| Session 10: Making sense of the information you collect | Use counting of cases and local populations (animals in one or more areas) to describe patterns of disease |
| Outline how data analysis methods could be used to describe extent and severity of disease and help identify possible causes |
| Outline how you would develop hypotheses and control measures |
| Session 11: Application of epidemiological approach to routine cases | Understand how epidemiology skills are applied in routine work through case examples |
| Session 12: Course evaluation and conclusion | Complete evaluations and receive certificates |
| Contribute to training course conclusions |

# Advanced Field Epidemiology

## Resource content

The *Advanced Field Epidemiology* *Resource Book* has been developed as a resource to allow provision of training in those areas described in the competency statement below.

If training is to be delivered to veterinarians based on the content in the Advanced Field Epidemiology Resource Book then a training package and approach to training will need to be agreed and developed. It is likely that this will differ from the para-veterinary training package because it is expected that training to veterinarians will involve fewer delivery occasions with delivery likely to be managed in English using a combination of Australian and Indonesian experts.

## Competency statement

For veterinarians to be able to use advanced epidemiology skills in investigation of priority or emerging infectious disease, and for assessment and utilisation of iSIKHNAS disease data to conduct disease control planning at district, provincial, and central government levels.

In order to achieve this, veterinarians need to be able to:

* Apply epidemiology skills in planning, implementing, analysing and reporting on disease investigation activities. This includes conducting additional field investigation studies to provide improved understanding of causes of disease and help inform on the optimal control strategies;
* Understand the interpretation of diagnostic test data and information. Apply interpreted diagnostic test results to disease investigation and control activities including the development and interpretation of new diagnostic tests;
* Describe, assess and compare options for control or eradication of animal diseases.