

ESR Epidemiological Skills Development Programme

Module 1.2

Effective Case Investigation Course

Course Outline

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Overall aims, objectives and learning outcomes

Purpose of course

To provide a foundation for good practice and the consistent investigation of apparently isolated cases of disease¹ and to provide an understanding of how these investigations contribute to New Zealand's surveillance and outbreak investigation systems.

Intended audience

This course is part of the level one suite of courses being offered under the ESR NCBID epidemiological skills development programme. This course is intended for disease investigators who are seeking to develop or refresh their disease investigation skills and knowledge. This course is aimed at those people involved in the investigation and control of notifiable diseases, while there will be a focus on enteric disease other disease of public health importance will be considered. Initially, it will be offered to disease investigators employed within public health units but may in future include disease investigators employed in other organisations e.g. territorial authorities.

Competencies

The course will develop competencies in the following areas:

- Surveillance
- Public Health Science / Epidemiological Concepts
- Investigation Skills
- Communication
- Reporting
- Prevention and control

Desired learning outcomes

On successful completion of this course participants will **know/understand**:

- The strengths and limitations of the investigation of isolated cases of disease
- The role of the disease investigator
- The steps in infectious disease case investigation
- The purpose, strengths and limitations of standardised case questionnaires

¹ The initial focus of this course will be on enteric disease however it will also consider other diseases of public health significance.

- The transmission risk factors for common diseases and be able to identify sources of further information
- The process and systems for notifiable disease surveillance and control in New Zealand
- The role of environmental sampling and the use of laboratories
- The process for outbreak investigation and the roles within the outbreak investigation team

On successful completion of this course participants will **be able to**:

- Describe and interpret risk factors for common diseases
- Identify sources of further information on disease transmission and disease risk factors
- Apply standard operating protocols for case investigations and identify relevant risk factors to prevent further illness
- Interpret and complete standard national investigation report forms and questionnaires, while remaining open to other information
- Apply good investigation principles and techniques
- Effectively collate and report relevant surveillance and risk factor information for local and national surveillance
- Apply good interview techniques
- Provide practical advice to prevent further spread of infection for common diseases
- Understand the roles of an outbreak investigation team and the steps of an outbreak investigation
- Provide support to a outbreak investigation

Session content overview

Session 01: Introduction to notifiable disease in New Zealand

- Welcome, house keeping, introductions, icebreakers.
- Overview of the Epidemiological Skills Development Programme
- Overview of this course including learning objectives
- What are communicable and notifiable diseases
- How and why did they become notifiable
- Why is it important to investigate and control communicable disease
- Important legislation, powers and responsibilities (Health Act, Privacy Act)
- Key agencies and their roles

Session 02: New Zealand disease surveillance systems and principles

- The role of surveillance
- How does the New Zealand disease surveillance system function
- How surveillance information is gathered
- Fundamentals for good surveillance systems (rubbish in rubbish out)
- New Zealand's surveillance systems (online: EpiSurv, EARS, Sentinel Surveillance; Publications: Public Health Surveillance Report; Local systems: Hospital based systems i.e. Infection Control and death notification reports)
- What are the aims and purposes of local and national surveillance
- International surveillance and New Zealand's obligations under the International Health Regulations 2005 (surveillance requirements under Annex 1 Part A: Core Capacity Requirements for Surveillance and Response)

Session 03: Disease investigation in New Zealand

- How does the NZ disease notification system operate
- How the pyramid of notification affects the detection of disease
- What is the role and purpose of the investigation of individual cases of disease (prevention of spread and identification of source (common sources or broader trends))
- What are the strengths and limitations of individual case investigations
- What are the steps of an investigation
- What are the strengths and limitations of investigating self-reported disease (vs. the investigation of notified cases)

Session 04: Case interview skills

- What are the key types of interview techniques
- Preparation for the interview (knowledge, research, tools and equipment)
- What are the phases of an interview
- Informed consent and privacy issues
- Theory
- Practice
- Taking/recording effective case notes including reviewing hospital case notes
- Standard briefing techniques (to brief the Medical Officer of Health succinctly)

Session 05: Disease transmission and risk factors

- Discussion of common disease and transmission routes including:
 - Enteric disease
 - Non-enteric disease (including vaccine preventable disease and high impact low number diseases)
- Sources of further information (Control of Communicable Diseases Manual (Heymann 2008), NZFSA website, ESR PH lab, medical officers, MoH CD manual, NZ PH surveillance manual, ESR outbreak report, ESR Annual surveillance report, CDC Website)

Session 06: Standard investigation reporting forms

- ESR forms (surveillance data vs. case management information)
- The role of local and national data collection tools
- Value and limitation of standard forms (consistence, prompts ensure a reasonable broad range of questions, questions limited to form, does not take into account less common risk factors or other information.
- EpiSurv: privacy of information entered, who sees what
- Review of data capture tool EpiSurv
- Frequent issues and problems with data quality
- Standard methods for entering data
- Data quality check reports available in EpiSurv
- Tips and Tricks – the EpiSurv ‘Did You Know’ emails

Session 07: Use of the laboratory and sampling

- The appropriateness of collection and analysis of clinical and environmental samples
- Role of the Lab beyond testing
- Limitations of testing and analysis
- Typical requirements for sample analysis (size, volume, storage etc)
- Which lab does what testing and how to find out
- Who to contact for what disease

Session 08: Introduction to outbreak investigations

- Definition of an outbreak including single case outbreaks
- Why investigate outbreaks
- When to step up an investigation to an outbreak investigation
- Outbreak teams and roles within an outbreak team
- Steps of an outbreak investigation

Session 09: Infection control measures and advice

- Standard, droplet, contact and airborne precautions
- Hand hygiene
- Personal protective equipment (PPE), donning and removal correctly
- Environmental Controls
- Social Distancing/Ventilation
- Treatment/Vaccination
- Cleaning advice

- Where to access further advice
- Resources: Norovirus in Elder Care Facilities; Influenza Guidelines
- Key transmission routes –contact, airborne, common vehicle (food, water) vector borne
- Prevention of transmission including universal precautions, PPE and disinfection

Assessment

Students will **pass** the course if they:

1. Achieve a score of 50% or higher on the post course test given on the final day