POLICY ON HANDLING OUTBREAKS

1. **PURPOSE:**
   This policy describes the procedure to be followed in case of outbreaks.

2. **SCOPE:**
   This policy is applicable to all INODAYA Hospitals - Kakinada employees.

3. **RESPONSIBILITIES:**
   All Inodaya Hospitals – Kakinada staff

4. **PROCEDURE:**

   Definitions: An outbreak is defined as an unusual or unexpected increase of cases of a known nosocomial infection or the emergence of cases of a new infection. The number of cases indicating presence of an outbreak will vary according to the infectious agent, size and type of population exposed, previous experience or lack of exposure to the disease, and time and place of occurrence. Identification of an outbreak

   4.1. Identifying an outbreak

   Initially identified

   - By nurses
   - Physicians
   - Microbiologist
   - Through a nosocomial infection surveillance programme

   Early identification of an outbreak is important to limit transmission among patients by health care workers or through contaminated materials. A potential

problem may be initially identified by nurses, physicians, microbiologists, or any other health care worker, or through nosocomial infection, surveillance programme. Appropriate investigations are required to identify the source of the outbreak, and to implement control measures. The control measures will vary depending on the agent and mode of transmission, but may include, isolation procedures or improvements in patient care or environment cleaning.

More than three of the same organism identified through culture at the same area at specific time is considered as an outbreak

4.2. Investigating an outbreak

4.2.1. Systematic planning and implementation of an outbreak investigation is necessary.

4.2.2. Planning the investigation

a) Notify the appropriate individuals and departments in the institution of the problem; establish terms of reference for the investigation. This must include development of an outbreak team and clear delineation of authority.

b) Infection control staff must be part of the outbreak team.

c) Confirm whether there is an outbreak by reviewing preliminary information on the number of potential cases, available microbiology,

severity of the problem, and demographic data of person(s), place and time.

4.3. Case definition

4.3.1. A case definition should be developed. It must include a unit of time and place and specific biological and /or clinical criteria. The inclusion and exclusion criteria for cases must be precisely identified.

4.3.2. A gradient of definition (as definite, probable or possible case) is often helpful. The definition should also differentiate between infection and colonization. Specific criteria to identify the index case may also be developed if relevant information is available.

4.3.3. Example of case definition: A definite case patient will be defined as a patient hospitalized in the ward with diarrhea, cramps, vomiting and in whom routine culture of faeces identifies enterotoxin producing staphylococci.

4.3.4. The case definition can change with time as new information becomes available, or with additional diagnostic information.

4.3.5. A data collection form for case-finding should be developed and include:

a) Demographic characteristics (e.g. age, sex, cause of admission/leading diagnosis, date of admission, date of any surgery, prior antimicrobials)

b) Clinical data (e.g. onset of symptoms and signs, frequency and duration of clinical features, associated with the outbreak, treatments, devices)

c) Any other potentially relevant data.

4.3.6. The form must be straightforward to use. It is completed with information extracted from medical charts, microbiology reports and logbooks. The data collected must also be checked for validity.

4.3.7. The clinical diagnosis will unusually be confirmed microbiologically. Optimal diagnostic specimens to be obtained from cases should be described. It may be appropriate to store selected biological materials for future analysis in anticipation that new diagnostic methods may become available.

4.3.8. To verify the outbreak, the number of cases or isolates observed during putative outbreak period is compared with the number of cases (or isolates) reported during the previous period, or with the number of cases (or isolates) reported in the same period of time one month or one year earlier.

4.4. Describing the outbreak

The detailed description includes person(s), place, and time. Cases are also described by other characteristics such as gender, age, date of admission, transfer from another unit, etc.

4.5. Control measures and follow-up

4.5.1. The aims are:

a) To control the current outbreak by interrupting the chain of transmission.

b) To prevent future occurrence of similar outbreaks.

4.5.2. The selection of control measures is determined by results of the initial analysis in consultation with appropriate professionals (Infection control staff, clinicians, nursing staff and microbiologists). This is also an opportunity to initiate or improve a surveillance system to facilitate evaluation of the efficacy of the control procedures instituted. Continuous surveillance may be implemented in high –risk units.

4.5.3. Immediate control measures for outbreak management

Types of transmission suspected.	Suggested action
Cross- transmission (transmission between individuals)	Patient isolation and barrier precautions determined by infectious agent (s).
Hand transmission	Improvements in hand washing
Airborne agent	Patient isolation with appropriate ventilation
Agent present in water, Waterborne agent	Checking of water supply and all liquid containers. Use of disposable devices.
Food borne agent	Elimination of the food at risk

4.6. Communication

4.6.1. During the investigation of an outbreak, timely, up-to-date information must be communicated to the hospital administration, public health authorities, and, in some cases, to the public. Information may be provided to the public and to the media with agreement of the outbreak team, administration and local authorities.

4.6.2. A final report on the outbreak investigation should be prepared. It should describe the outbreak, interventions, and effectiveness, and summarize the contribution of each team member participating in the investigation. It should also make recommendations to prevent future occurrence. This report can be published in the medical literature, and may be considered as a legal document.

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Summary for Investigation of an Outbreak

- Begin preliminary evaluation and determine a background rate of infection.
- Confirm the existence of an outbreak.
- Confirm the diagnosis using the microbiological methods.

- Create a case definition that may include laboratory and clinical data. Start with a broad case definition that can be redefined at a later date.
- Develop line listings by identifying and counting cases or exposures. Describe the data in terms of time, place and person. Remember that cases may have been discharged from the hospital.
- Construct an epidemic curve. This may indicate the source of the outbreak.
- Develop and test the hypothesis. In larger outbreaks, a case-control method may be the most efficient way of testing a hypothesis: however, if a single hospital ward is affected, a retrospective cohort study is relatively easy.
- Take immediate control measures. Determine who is at risk of becoming ill. Look at changes that may have affected the rate of infection, e.g. new staff, new procedures, new laboratory tests, and staff: patient ratio, etc
- Communicate information to relevant personnel.
- Screen personnel and environment as indicated.
- Write a coherent report (preliminary and final).
- Summarize investigation and recommendations to the appropriate authorities.
- Implement long-term infection control measures for prevention of similar outbreaks.

Control measures

Type of transmission being suspected	Control measure

Cross transmission	**Patient isolation and barrier precautions**
Hand transmission	**Hand hygiene**
Airborne	**Patient isolation with correct ventilation**
Waterborne	**Check water source , containers, use disposable devices**
Food borne	**Remove food ,collect samples and send for analysis**