



HEALTH HOLDING

HAFER ALBATIN HEALTH
CLUSTER
MATERNITY AND
CHILDREN HOSPITAL

Department:	Infection Prevention and Control Department		
Document:	Multidisciplinary Policy and Procedure (MPP)		
Title:	Epidemiology of Infection		
Applies To:	Health Care Workers		
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1. PURPOSE:

- 1.1 To provide information about the epidemiological principles and methods used to describe how microorganisms are transmitted and how to reduce or prevent disease transmission.

2. DEFINITIONS:

- 2.1 Endemic refers to the usual incidence of a given disease within a geographical area during a specified time period.
- 2.2 Epidemic refers to a greater incidence of disease over the expected incidence of the disease within a given geographical area during a specified time period.
- 2.3 Pandemic refers to an epidemic spread over a wide geographical area, across countries or continents.
- 2.4 Reservoir refers to a place in where an infectious agent can survive but may or may not multiply.
- 2.5 Infection refers to the entry into and multiplication of an infectious agent in the tissues of the host and the tissue damage resulting in apparent or unapparent changes in the host.
- 2.6 Healthcare-associated infections (HAIs) are infections that were not present or incubating at the time of admission to the hospital but are temporally associated with admission to or a procedure performed in a healthcare facility.
- 2.7 Colonization refers to the presence of microorganisms in or on a host with growth and multiplication but without tissue invasion or damage.

3. POLICY:

- 3.1 Healthcare workers are encouraged to become familiar with this concept to develop and expand a knowledge base for interpreting data gathered within and outside the healthcare facility; for understanding the associations between risk factors and infection in different settings; and for appreciating how these findings can be used to reduce infection risks.

4. PROCEDURE:

- 4.1 Chain of Infection: The spread of infection within the hospital requires three essential elements: a source of infectious agents, a susceptible host, and a mode of transmission. Each of the 6 components (or links) in this chain is required to cause colonization or infection:
 - 4.1.1 The causative agent is a biological, physical, or chemical entity capable of causing disease.
 - 4.1.1.1 The reservoir is a place in which an infectious agent can survive but may or may not multiply
 - 4.1.1.1.1 The source of the infectious agent may be patients, personnel, or visitors and may include persons with active infection, persons in the incubation period of the disease, or persons who are colonized by the infectious agent but have no apparent disease.
 - 4.1.1.1.2 Other sources of infection include inanimate objects in the environment, such as equipment and medications that have become contaminated.
 - 4.1.2 The portal of exit is the path by which an infectious agent leaves the reservoir
 - 4.1.3 The mode of transmission is the method by which the organism reaches a susceptible host; three modes of transmission are of particular importance in the healthcare setting:

- 4.1.3.1 Contact Transmission is the most important and frequent mode of transmission in nosocomial infections. This transmission type is further divided into two sub-groups:
 - 4.1.3.1.1 Direct Contact: Involves direct physical contact between a susceptible host and an infected or colonized person, e.g., nurse-patient contact during routine care, patient-patient contact or patient-visitor contact. Such contact can cause direct transfer of microorganisms from one person to another.
 - 4.1.3.1.2 Indirect Contact: Involves the physical contact of a susceptible host with a contaminated intermediate object such as bed linen, instruments, dressings, shared equipment or healthcare environmental surfaces.
- 4.1.3.2 Droplet Contact involves the transmission of microorganisms in droplets generated from an infected or colonized person during talking, sneezing or coughing or generated during certain procedures such as suctioning and bronchoscopy. Microorganisms are aerosolized and deposited on the host's conjunctiva, nasal mucosa and/or mouth.
- 4.1.3.3 Airborne Transmission involves the dissemination of droplet nuclei or dust particles containing the infectious agent in the air. Organisms carried in this manner can be widely dispersed by air currents before being inhaled.
- 4.1.4 The portal of entry is the means by which an infectious agent enters the susceptible host.
- 4.1.5 Although everyone is a susceptible host at some level, the elderly, the young, and those with decreased stomach acid are especially vulnerable. A patient's resistance to pathogenic agents varies greatly. Systemic disease, age (especially extremely young or old age), trauma, surgical and radiological procedures, drug treatments, and indwelling devices can decrease resistance and make patients more susceptible to infection.
- 4.2 Prevention of Disease Transmission. Prevention of the transmission of an infectious agent is the responsibility of all staff:
 - 4.2.1 Treat all bodily fluids as potentially infectious.
 - 4.2.2 Dispose waste according to hospital policy. (Refer to IPC-MPP-094 Waste Management).
 - 4.2.3 Adhere to aseptic technique when required. (Refer to IPC-MPP-016 Aseptic Technique).
 - 4.2.4 Adhere to hand hygiene practices. (Refer to IPC-MPP-013 Hand Hygiene).
 - 4.2.5 Maintain good personal hygiene.
 - 4.2.6 Adhere to the hospital policy for managing isolated patients. (Refer to IPC-MPP-019 Isolation (Expanded) Precautions).
 - 4.2.7 Observe effective housekeeping practices. (Refer to IPC-MPP-103 Housekeeping).
 - 4.2.8 Adhere to STANDARD PRECAUTIONS. (Refer to IPC-MPP-012 Standard Precaution).
 - 4.2.9 Store food and personal belongings appropriately in the workplace.

5. MATERIALS AND EQUIPMENT:

- 5.1 **Forms and Records:**
 - 5.1.1 N/A
- 5.2 **Materials and Equipment**
 - 5.2.1 N/A

6. RESPONSIBILITIES:

- 6.1 All Health Care Workers
- 6.2 Microbiologist
- 6.3 IPC Team








7. APPENDICES:

- 7.1 N/A

8. REFERENCES:

- 8.1 GCC Infection Prevention and Control Manual. Third Edition 2018
file:///C:/Users/SPawar/Downloads/The-GCC-Infection-Prevention-and-Control-Manual-3rd-Edition.pdf

9. APPROVALS:

	Name	Title	Signature	Date
Prepared by:	Ms. Marilou C. Magallano	IPC Practitioner		November 10, 2024
Prepared by:	Ms. Wadha Mohd Al Shammari	IPC Coordinator		November 10, 2024
Reviewed by:	Ms. Awatif Hamoud Al Harbi	IPC Director		November 11, 2024
Reviewed by:	Mr. Sabah Turayhib Al Harbi	Nursing Director		November 13, 2024
Reviewed by:	Mr. Abdullellah Ayed Al Mutairi	Quality & Patient Safety Director		November 17, 2024
Reviewed by:	Dr. Thamer Naguib	Medical Director		November 19, 2024
Approved by:	Mr. Fahad Hazam Al Shammari	Hospital Director & IPC Committee Chairman		November 24, 2024