

Unit 17: Causes and Spread of Infection

Unit reference number: T/616/2947

Level: 2

Unit type: Optional

Credit value: 2

Guided learning hours: 20

Unit summary

Many illnesses and diseases are contracted as a result of the spread of infection, both in and outside of care settings. All care workers have a responsibility to protect people from harm of infection.

This unit will help you to understand the causes and transmission modes of infection, the differences between infection and colonisation, the areas of infection and the types of infection caused by different micro-organisms.

You will also develop an understanding of the methods of transmission, the conditions needed for micro-organisms to grow and the routes of entry into the body, including the key factors that encourage infection.

Learning outcomes and assessment criteria

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria outline the requirements the learner is expected to meet to achieve the unit.

Learning outcomes	Assessment criteria
1 Understand the causes of infection	1.1 Identify the differences between bacteria, viruses, fungi and parasites 1.2 Identify common illnesses and infections caused by bacteria, viruses, fungi and parasites 1.3 Describe what is meant by infection and colonisation 1.4 Explain what is meant by systemic infection and localised infection 1.5 Identify poor practices that may lead to the spread of infection 1.6 Identify how an understanding of poor practices can be applied to own professional practice
2 Understand the transmission of infection	2.1 Explain the conditions needed for the growth of micro-organisms 2.2 Explain the ways an infective agent might enter the body 2.3 Identify common sources of infection 2.4 Explain how infective agents can be transmitted to a person 2.5 Identify the key factors that will make it more likely that infection will occur 2.6 Discuss the role of a national public health body in communicable disease outbreaks

Content

What needs to be learned

Learning outcome 1: Understand the causes of infections

Bacteria, viruses, fungi and parasites

- Micro-organisms (microbes) (microscopic living organisms).
- Pathogens are micro-organisms that cause infection e.g. bacteria, viruses, fungi, parasites.
- Pathogenic and non-pathogenic.
- Differences, e.g. cell structure, shape, size, effects of changes in cell structure.

Common illnesses and infections

- Viruses, e.g. influenza, common cold, norovirus.
- Bacteria, e.g. MRSA, E. coli, salmonella.
- Parasites, e.g. fleas, ringworm, lice.
- Fungal infections, e.g. thrush, ringworm, athletes foot
- Infection:
 - cause of disease, passed from person to person, causes, signs and symptoms.
- Colonisation:
 - how micro-organisms can establish themselves in their ideal environment but not necessarily cause disease.
- Systemic infection:
 - spreads throughout the body.
- Localised infection:
 - limited to a specific part of the body
 - localised can become systemic.

Poor practices that may lead to infection

- Poor practice, e.g. coughing and sneezing without covering mouth, poor personal hygiene, not washing hands between contact with individuals.
- Soiled linen:
 - storage (should be in labelled bags), not separating infected and non-infected linen, not washing at correct temperatures.
- Clinical waste, e.g. infected matter, dressings, used plasters, needles:
 - storage (should be in colour-coded bags).

What needs to be learned

Learning outcome 2: Understand the transmission of infection

Conditions needed for the growth of micro-organisms

- Temperature.
- Humidity.
- Nutrients.
- Time.

How infective agents might enter the body

- Inhalation, e.g. breathing in airborne bacteria from coughs and sneezes.
- Ingestion e.g. from eating contaminated food.
- Direct contact, e.g. breaks in skin due to injury, skin conditions, poor hand drying.
- Physical contact with infected matter from wounds and bodily fluids.
- Fomites – objects capable of transmitting organisms from one individual to another, e.g. facecloths, towels, bed linen.
- The chain of infection – organism, reservoir, portal of exit, transmission, portal of entry, vulnerable hosts.

Common sources of infection

- Sources, e.g. airborne, blood borne, sexually transmitted, fecal, oral, environment, stagnant water, warm-water systems, animals.
- Cross-infection due to poor personal hygiene such as:
 - not washing hands after using the toilet
 - not washing hands before eating
 - not washing hands before and after delivering personal care
 - poor hygiene practices when changing dressings
 - not washing regularly
 - not changing clothes/uniform regularly
 - inadequate hygiene routines in settings, including trolleys and work surfaces.
- Non-use/inaccurate use of personal protective equipment (PPE) such as:
 - not using gloves/aprons
 - not changing gloves and aprons between different users of service.
- Lowered immunity due to existing illness, e.g. acquired Immune Deficiency Syndrome (AIDS), influenza in older users of services.
- Suppressed immunity due to organ transplants or chemotherapy.

What needs to be learned

- Improper storage of food such as:
 - infective agents transmitted by improper storage of food
 - leaving cooked food uncovered
 - storing raw food next to cooked food
 - not maintaining refrigerators at appropriate temperatures.
- Improper preparation and cooking of food, including reheating food.
- Improper disposal of waste, including:
 - Use of colour-coded bags for biological waste
 - kitchen waste
 - infected dressings from wounds.
- Ineffective management of laundry:
 - storage of soiled linen
 - use of personal protective equipment (PPE) when dealing with infected linen
 - not washing linen at recommended temperatures.

Role of public bodies

- Public Health England - providing an integrated approach to protecting UK public health through the provision of support, advice and training to:
 - NHS and local authorities
 - emergency services
 - infectious diseases government list.
- Department of Health – helps people live better for longer, improving out of hospital care, creating quality healthcare services.
- Health and Safety Executive – enforces COSHH (Control of Substances Hazardous to Health).
- Role of Public Health England.
- Food Standards Agency – working with local authorities to enforce food safety in organisations, such as:
 - NHS trusts
 - hospices
 - nursing homes
 - residential care homes
 - day-care centres.

Suggested resources

Books

Ayling P (Editor) – *Knowledge Set for Infection Prevention and Control* (Heinemann, 2007), ISBN 9780435402327

Tilmouth T, Tilmouth S – *Safe and Clean Care: Infection Prevention and Control for Health and Social Care Students* (Reflect Press, 2009). ISBN 9781906052089

Websites

www.gov.uk/government/publications	Government guidelines on infection control in care homes.
www.gov.uk/government/organisations/public-health-england	Government department to protect and improve the nation's health
www.nice.org.uk	NICE guidelines on infection control.
www.who.int/csr/resources/publications/4EPR_AM2.pdf	World infection control standard precautions in health care.

Assessment

This guidance should be read in conjunction with the associated qualification specification for this unit.

This unit is internally assessed. To pass this unit, the evidence that the learner presents for assessment must demonstrate that they have met the required standard specified in the learning outcomes and assessment criteria, and the requirements of the assessment strategy.

To ensure that the assessment tasks and activities enable learners to produce valid, sufficient, authentic and appropriate evidence that meets the assessment criteria, centres should follow the guidance given in *Section 8 Assessment* of the associated qualification specification and meet the requirements from the assessment strategy given below.

Wherever possible, centres should adopt an holistic approach to assessing the units in the qualification. This gives the assessment process greater rigour and minimises repetition, time and the burden of assessment on all parties involved in the process.

Unit assessment requirements

This unit must be assessed in accordance with the assessment strategy (principles) in *Annexe A* of the associated qualification specification.

Assessment of all learning outcomes (knowledge) may take place in or outside of a real work environment.