

Level 3 Certificate in the
Administration of Medicines

Introduction

This is the workbook for the Level 3 Certificate in the Administration of Medicines. The award consists of two units:

Unit 1 Monitoring and Storing Medication

Unit 2 Administering Medication

The Aim

The aim of the programme is to:

- ◆ Enable you to outline the legislation that governs the administering of medication in a variety of care settings.
- ◆ Help you understand the common hazards and complications that can arise from drugs misuse.
- ◆ Enable you to outline your responsibilities and accountabilities for patient care and confidentiality.
- ◆ Enable you to identify and explain the different routes, methods, records, and equipment available for administering medicines.
- ◆ Help you understand and be able to explain the key words and concepts associated with administering medication to individuals in a care setting.

This workbook is divided into two units, each broken down into sections:

Unit 1 Monitoring and Storing Medication

- Section 1 Your responsibilities and accountabilities
- Section 2 Common types of medicine
- Section 3 Security, storage and disposal of medicines
- Section 4 Labels and records
- Section 5 Confirming that the individual has taken the medication

Unit 2 Administering Medication

- Section 1 Infection control know how
- Section 2 Communication



Introduction

- Section 3 Materials, equipment and aids
- Section 4 Charts and prescriptions
- Section 5 Choosing the right route and safely administering medicines
- Section 6 Monitoring individuals and recognising side effects of medicines

Each section is based upon the essential knowledge you need. Activities have been included that will test your learning.

The workbook is yours so don't be afraid to write in your own thoughts, comments, and ideas in the margins. You might have questions or things you would like to discuss with your supervisor, colleagues, or manager. You can use the book as a working document that will help you to improve how you do your job.



Glossary of Terms

Additional protective equipment – includes: types of personal protective equipment such as visors, protective eyewear, radiation protective equipment.

Aseptic technique – this means that the procedure or technique will be carried out in such a way as to avoid introducing micro-organisms into a vulnerable site.

Bacteria – micro-organisms that can cause infection and infectious disease in humans.

Contaminated – includes items contaminated by body fluids, chemicals or radionuclides. Any pack/item opened and not used should be treated as contaminated.

Individuals – the person who is to receive the medication, this might be an adult or a child.

Infection – invasion of the body by harmful organisms and causing disease/illness.

Medication administration record – denotes the term used for the documentation on which the medication has been ordered/prescribed. This will vary across care settings and environments, such as hospital and community care settings, including medications prescribed by GPs and dispensed by community pharmacists where the instructions will be found on the medication packaging.

Patient Information Leaflet (PIL) – information inside bought and prescribed medications.

Personal protective clothing – includes items such as plastic aprons, gloves, both clean and sterile, footwear, dresses, trousers, shirts and all-in-one trouser suits. These may be single use disposable clothing or re-usable clothing.

Pathogen – a pathogen is a micro-organism capable of causing disease in another organism.

Standard precautions – these are explicit policies for hand washing, broken skin, sharps, protective clothing, spillage, waste and excreta.



Section 1: Infection control know how

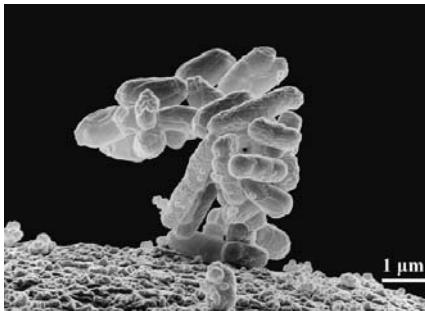
Infections are responsible for approximately half of all known human diseases. A **pathogen** is a micro-organism that is capable of causing disease. The main groups of these pathogens are bacteria, fungi, viruses, protozoa, and helminths (worms and flukes). These are the five main groups of organisms capable of causing disease.

This section will enable you to:

- ◆ Identify the standard infection control precautions
- ◆ Explain the consequences of poor practice

Sources of infection

Bacteria

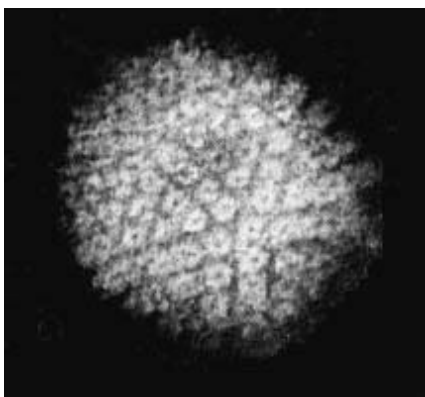


E. coli bacteria

These are unicellular organisms that are visible under a microscope when using an appropriate stain. They are commonly classified according to their shape and also according to their reaction when treated by a dye called “Gram’s stain”. They live in soil, water, and air, on food, on animals, on people and in dust. There are many infections caused by bacteria including those of the:

- ◆ Digestive tract e.g. Salmonella
- ◆ Respiratory tract e.g. pneumonia
- ◆ Urinary tract e.g. cystitis

Viruses



Herpes simplex virus

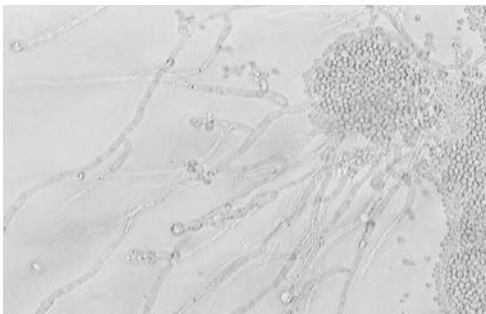
These are minute particles consisting of genetic material and protein and they are not usually defined as living organisms. They do not grow and divide like a cell. They infect cells. The structure of a virus can only be seen using a high-powered electron microscope. Unlike bacteria they have a poor survival rate outside of

living cells. Common infections caused by viruses are:

- ◆ Measles
- ◆ Mumps
- ◆ Influenza
- ◆ Chicken Pox

Serious illnesses caused by viral infections are:

- ◆ Polio
- ◆ Rabies
- ◆ Hepatitis B
- ◆ HIV



Candida albicans, a form of yeast, which causes Thrush

Fungi

These have a more complicated structure than bacteria. Three types of fungi are capable of causing disease in humans these are; yeasts, moulds, and yeast-like fungi. You may have heard of a few of the diseases that can be caused by fungi:

- ◆ Thrush
- ◆ Ringworm

Protozoa

These are microscopic single-celled animals and can carry cross-infection risks as they can be passed from one patient to another. They are parasites living in cells, the blood stream, gut, or urogenital systems. Some common diseases caused by protozoa are:

- ◆ Malaria
- ◆ Sleeping sickness
- ◆ Amoebic dysentery



Helminths (worms and flukes)

Helminths are invertebrate animals, some of which are parasitic. Numerous species cause infections in humans; they broadly fall into two main groups, roundworms, and flatworms. They mainly live in the large bowel as a result of eating infected undercooked and uncooked foods. Worm infections can be avoided by hygienic food preparation and adequate sanitation.

Transmission of pathogens

Disease can spread by many routes such as airborne, direct contact and indirect contact. Micro-organisms can enter and leave the body by several routes.

Route/mode of transmission	Source	Examples
Airborne	Human (talking, coughing and sneezing) Aerosols Dust	Bedding, skin, coughing, sneezing, showers, dusting
Direct contact	Human Food Fluids Insects Animals	Hands, clothing, equipment, uncooked food, disinfectants, blood, water, bodily fluids Flies, mosquitoes Cows
Indirect contact	Contaminated inanimate objects	Objects or equipment used between patients: bedpans, bedclothes, needles, washbowls, surgical instruments, uniforms, notes, etc.

Way in/portal of entry

To establish infection, the micro-organism must be able to gain access to the body or tissues of the host.

Different pathogens enter the body by different routes, the common portals being:

- ◆ Inhalation through the mouth and nose to the respiratory system, e.g. the common cold
- ◆ Cuts and grazes in the skin, surgery wounds, e.g. MRSA
- ◆ Ingestion through the mouth, e.g. Salmonella
- ◆ Inoculation through the skin or mucus membrane into the deeper tissues. A wide variety of viruses are able to enter the body by this route and cause conditions ranging from boils to severe wound infections or viral hepatitis



A possible portal of entry for bacteria



Controlling the spread of infection

The decision about whether an item requires cleaning, disinfecting or sterilisation depends on the risk rating i.e. low, medium, or high.

Low risk – Cleaning

Cleaning may be sufficient to control the micro-organism population and prevent the transfer of infection.

Medium risk – Disinfection

Disinfection kills the micro-organisms to a level that is unlikely to cause infection. It does not necessarily kill all bacterial spores and could cause infection to those who are susceptible i.e. patients with poor immunity. Heat is the preferred method of disinfection, but chemicals may be needed if heat is unsuitable i.e. for the skin.

High risk – Sterilisation

Sterilisation involves the complete destruction or removal of all micro-organisms and involves the use of heat, gas, chemicals, or irradiation. Items that require sterilisation are those which are considered to be of high risk to patients. These are generally used for invasive procedures, such as intravenous cannulas etc.

Other methods of controlling the spread of infection include the carer having a high standard of personal hygiene in order to minimise the risk of cross-infection.

Standard precautions

These are explicit policies for hand washing, broken skin, sharps, protective clothing, spillage, waste and excreta. These practices should be applied to all patients in all health care settings in order to show good practice and prevent the spread of infection.

It is accepted that in order to minimise infection five specific practices ought to be considered and used. These are:

- ◆ Hand washing
- ◆ Safe disposal of clinical material
- ◆ Wearing of protective clothing
- ◆ Aseptic technique
- ◆ Personal hygiene

Hand washing

There are two categories of bacteria on our hands these are:

- ◆ Transient – bacteria, which do not normally live on skin, but are transferred to it during daily activities.
- ◆ Resident – bacteria, which live on normal, healthy skin. Everyone has them and they are not usually harmful. They cannot be completely removed.

Thorough hand washing with soap will remove the transient bacteria. However, the resident bacteria are only removed after prolonged hand washing using an antiseptic.



Methods

The method is determined by the type of procedure to be undertaken.

Social – to remove dirt and transient organisms.

Use liquid or a bar of soap.

- ◆ Before starting work
- ◆ Before eating
- ◆ Before drinking



- ◆ Before feeding a patient
- ◆ Before leaving work
- ◆ After visiting the toilet
- ◆ After helping a patient with toileting
- ◆ After handling bed linen
- ◆ Before and after cleaning equipment and furniture
- ◆ Between each patient

Hygienic – to remove or destroy all or most transient organisms.

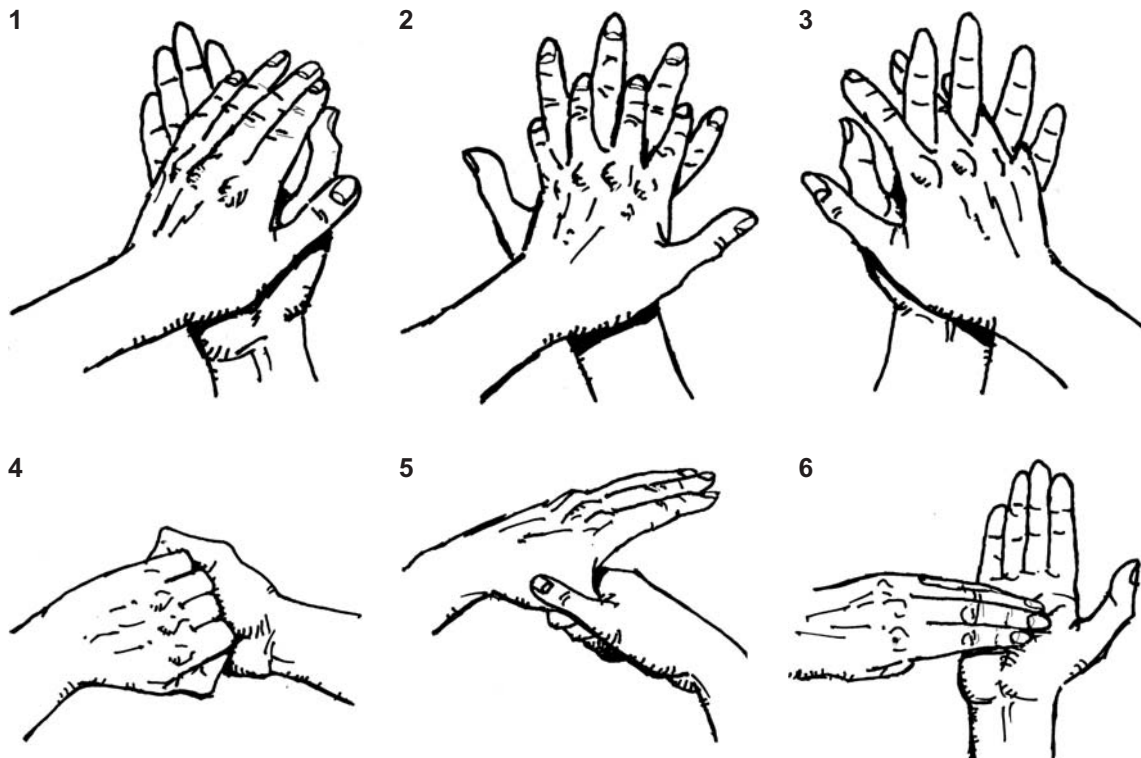
Use antiseptic soap or detergent and either wash thoroughly for 15–30 seconds or apply 5–10ml of alcohol hand rub, ensuring all areas of the hand and fingers are in good contact with the rub and leave to dry naturally.

- ◆ Before any procedure involving a high-risk patient.
- ◆ Before all procedures needing an aseptic technique e.g. dressing wounds.
- ◆ After contact with infected patients.
- ◆ After handling contaminated equipment and materials.

Hygienic hand washing technique

The correct procedure is to:

- ◆ Wet hands under running hot water
- ◆ Apply liquid soap or anti-microbial preparation and cover all surfaces of the hands
- ◆ Rub vigorously for at least 10 to 15 seconds using the six step procedure as follows:



For each step use five forward strokes and five backward strokes.

1. Rub your hands together, palm-to-palm.
2. Rub your right palm over the back of your left hand, and then your left palm over the back of your right hand.
3. Rub your hands together palm to palm with your fingers interlaced.
4. Rub your left fist in your right palm, and then your right fist in your left palm.
5. Rotate your right thumb in your left palm, and then your left thumb in your right palm.
6. Rub your right fingers in your left palm, and then your left fingers in your right palm.

Don't forget to wash your wrists. Rinse thoroughly under running water to remove all soapsuds and dry thoroughly on single use paper towels.



Surgical – to remove and destroy transient organisms and reduce detachable resident organisms.

Use antiseptic soap and water. Brush nails and wash hands and forearms using defined technique for a minimum of three minutes. Dry with a sterile towel. Alternatively wash hands with soap and water and after drying rub in a minimum of 5ml of an alcohol hand rub.

- ◆ Before surgery and aseptic techniques for invasive procedures

Safe disposal of clinical material

Each year health care settings produce thousands of tons of waste. Clinical waste must be incinerated to ensure that health care workers and patients are not at risk of causing infection or becoming infected.

Clinical waste is defined as:

- ◆ Soiled surgical dressings, swabs and instruments
- ◆ Material other than linen from infectious disease cases
- ◆ All human and animal tissue, excretion, and blood
- ◆ Discarded syringes, needles, broken glass and sharp surgical instruments
- ◆ Pharmaceutical and chemical products
- ◆ Used disposable bedpan liners, urine containers
- ◆ Incontinence pads, sanitary pads and tampons
- ◆ All items contaminated with human excretion or blood

The wearing and disposal of protective clothing

The third specific practice in the control and prevention of infection is the proper use of protective clothing, which is not to be considered as a separate issue, but part of the whole process. Protective clothing is to be worn if it is thought that direct contact with blood, bodily fluids or excreta may be encountered. It is beneficial to know what items are

available even if your role does not require you to use them all.

Items of protection may include:



- ◆ Gloves
- ◆ Aprons
- ◆ Gowns
- ◆ Eye protectors
- ◆ Hats
- ◆ Masks
- ◆ Special shoes
- ◆ Overshoes

As a carer it is important to realise why these items are necessary but not to forget that they may be alarming to the patient. Therefore care needs to be taken when explaining their use:

- ◆ To prevent the care workers clothes from becoming contaminated with pathogenic organisms.
- ◆ To prevent the transfer of pathogenic organisms to another person.
- ◆ To prevent the care worker from acquiring an infection from the patient.



Gloves are NOT a substitute for hand washing, which should always be done after using them

Plastic gloves and aprons are the most commonly used items of protective clothing. However, if worn incorrectly they can become vehicles of infection instead of preventing infection.

Gloves

It has been identified that gloves are very effective in protecting the health care worker from patient pathogens. They must be worn to prevent infection of both the user and the patient for:

- ◆ Any aseptic invasive procedure.
- ◆ Any practice that involves the handling of blood and bodily fluids e.g. handling dirty linen, soiled dressings, incontinence pads.

