



Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive



Standard Precautions

These guidelines must be implemented by all healthcare workers

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Foreword

- This document is aimed at all healthcare workers delivering care to all patients in all settings
- This document is adapted from the *Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings, 2007* published by the Centre of Disease Control (<http://www.cdc.gov/ncidod/dhqp/pdf/guidelines/Isolation2007.pdf>)
- Each healthcare facility (including community care areas) must develop local guidelines on Standard Precautions, using if desired this document as a template

1. Introduction

1.1 What are Standard Precautions?

Standard Precautions are evidence based clinical work practices published by the Centre of Disease Control (CDC) in 1996 and updated in 2007 that prevent transmission of infectious agents in healthcare settings.

(Siegal JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings, 2007)

Standard Precautions require **all** HCW's to:

- a. assume that every person is potentially infected or colonized with an organism that could be transmitted in the healthcare setting.
- b. apply a set of work practices to blood, all body fluids except sweat, mucous membranes and non intact skin including:
 - hand hygiene
 - use of personal protective equipment
 - management of spillages of blood and body fluids
 - appropriate patient placement
 - management of sharps
 - safe injection practices
 - respiratory hygiene and cough etiquette
 - management of needle stick injuries
 - management of waste
 - management of laundry
 - decontamination of reusable medical equipment
 - decontamination of the environment.

1.2 What is the rationale for Standard Precautions?

Within a healthcare setting both patients and healthcare staff are at risk of acquiring an infection

Risk to Patients

It has been estimated that 1 in 10 patients acquire a healthcare associated infection (HCAI) (PHLS 1995)

Risk to Healthcare staff

Infection is an occupational risk for healthcare staff. Exposure to blood and body fluids from infected patients poses a risk of infection with hepatitis B, C or HIV for healthcare staff (Cloeren, M 1998)

1.3 How is infection transmitted?

Transmission of infection occurs when the 6 elements of the “Chain of Infection” are present

1.3.1 Chain of Infection (see figure 1)

The chain of infection is a way of describing how disease is transmitted from one living thing to another

1. Infectious agent

An infectious agent is an organism that causes disease:

- bacteria
- viruses
- fungi
- protozoa
- prions

There are two sources of infection:

- A. endogenous or self infection occurs when organisms which are harmless in one site cause infection when transferred to another e.g. E coli.
- B. exogenous or cross infection occurs when organisms are transferred from another source e.g. nurse, doctor, other patient, the environment.

2. Reservoirs

A reservoir is a place where an infectious agent lives and grows (e.g. large intestine, blood, mouth)

3. Portal of exit

A portal of exit is any body opening that allows the infectious agent to leave (e.g. mouth, nose, rectum, breaks in the skin,)

4. Means of transmission

The means of transmission is how the infectious agent travels from the infected person to another person e.g. air, contact (indirect and direct)

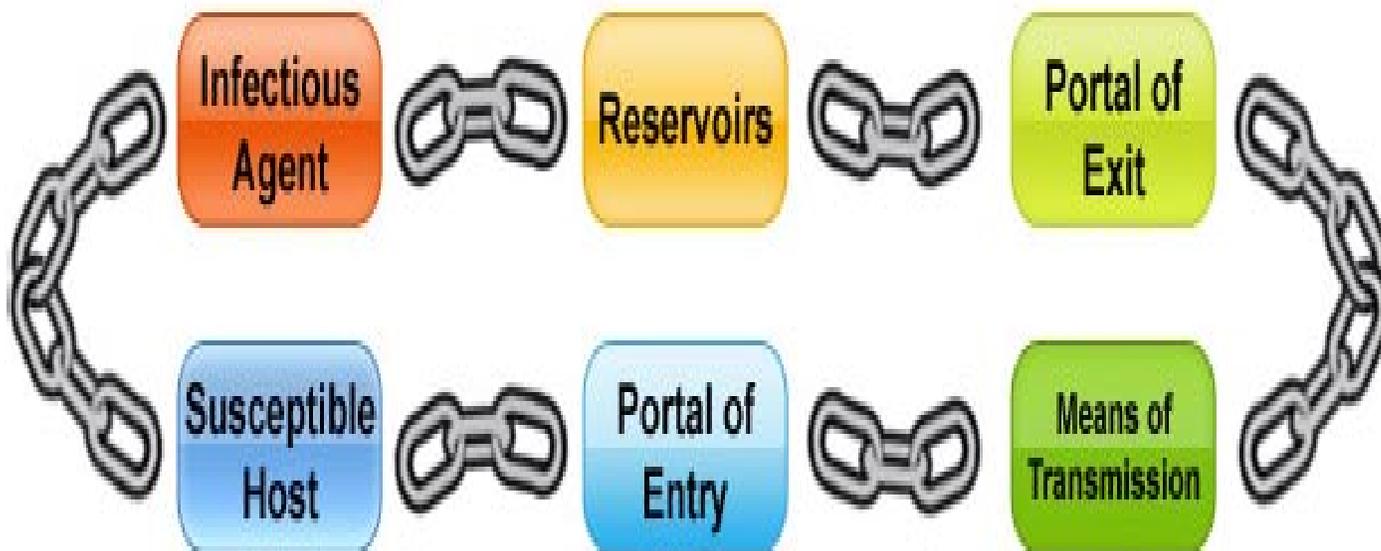
5. Portal of entry

The portal of entry is any body opening that allows the infectious agent to enter (e.g. nose, mouth, eyes, mucous membranes, a break in the skin, a device inserted into the skin etc)

6. A susceptible host

A susceptible host is a non infected person who could get infected

Figure 1 Chain of Infection



The purpose of Standard Precautions is to break the chain of infection focusing particularly but not exclusively on the mode of transmission, portal of entry and susceptible host sections of the chain.

Aseptic technique and antibiotic prophylaxis while not components of Standard Precautions are other key practices used to break the Chain of Infection at the infectious agent, reservoir and portal of exit sections of the chain

1.4 Standard Precautions and the Chain of Infection

While the implementation of Standard Precautions breaks the chain of infection thus minimising transmission of infection within the Healthcare environment some highly transmissible infections required additional precautions to Standard Precautions. These additional precautions are Transmission-based Precautions.

1.4.1 Transmission-Based Precautions

Transmission-based Precautions are Contact, Airborne and Droplet Precautions

- **Contact Precautions**

Contact precautions should be applied in addition to Standard Precautions to prevent transmission of highly transmissible organisms that are transmitted from person to person via the contact route (e.g. Meticillin resistant *Staphylococcus aureus*)

- **Airborne Precautions**

Airborne Precautions should be applied, in addition to Standard Precautions, to prevent transmission of highly transmissible organisms that are transmitted via the air from one person to another (e.g. Tuberculosis)

- **Droplet Precautions**

Droplet Precautions should be applied, in addition to Standard Precautions, to prevent transmission of highly transmissible organisms that are transmitted via respiratory secretions from one person to another (e.g. Influenza)

1.5 Responsibilities

1.5.1 Healthcare workers

All healthcare workers are responsible for:

- implementing Standard Precautions at all times
- attending induction and ongoing training on Standard Precautions
- reporting any deficits in knowledge or resources to line managers
- reporting any illness as a result of occupational exposure
- not attending for duty with known or suspected infection without first informing occupational Health department
- advising visitors of infection prevention and control requirements such as hand hygiene and cough etiquette

1.5.2 Managers of Healthcare facilities

Managers of Healthcare facilities are responsible for ensuring that the resources necessary to implement Standard Precautions are provided including:

- an infection prevention and control service
- an occupational health service
- an infection prevention and control induction programme for new staff
- an ongoing infection prevention and control education programme for staff
- equipment (e.g. personal protective equipment, cleaning equipment)
- physical infrastructure (isolation rooms, hand wash sinks etc)
- development of an action plan to address any non compliance with Standard Precautions identified by regular audits (see 1.5.3)

1.5.3 Infection Prevention and Control staff

Infection Prevention and Control staff are responsible for;

- providing education on Standard Precautions to all staff
- ensuring local guidelines and policies on Standard and Transmission- based Precautions are in place and regularly reviewed
- surveillance of epidemiology important organisms and notifiable diseases
- providing ongoing advice to staff
- auditing implementation of Standard and Transmission-based Precautions in conjunction with relevant department/ward areas (e.g. ward/hygiene managers) and feedback results to department/ward managers and healthcare managers (see 1.5.2)

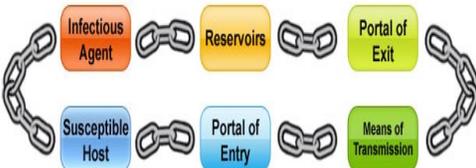
2.0 Clinical work Practices in Standard Precautions

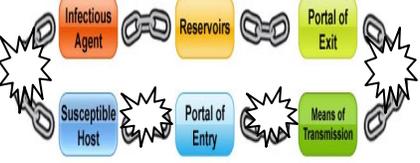
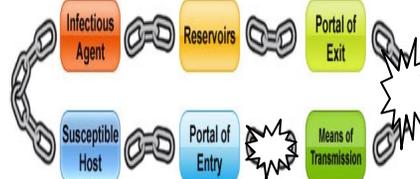
The following pages (10-18) describe the Clinical Work Practices in Standard Precautions in detail.

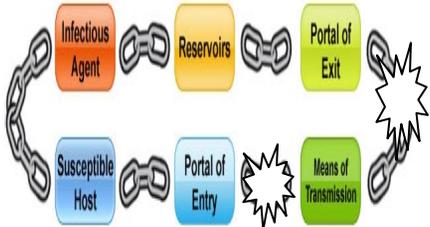
A table with 4 columns has been used to present the information (see table 1).

- **Column 1**
The format number
- **Column 2**
The name of the clinical work practice
- **Column 3**
A description of the clinical work practice that applies in Standard Precautions. References to other Irish publications and web sites that are relevant are included.
- **Column 4**
A graphic description of where the clinical work practice breaks the chain of infection

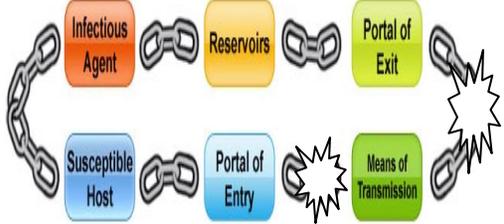
Table 1

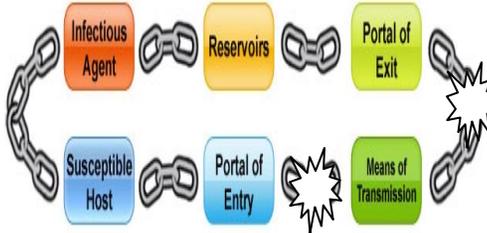
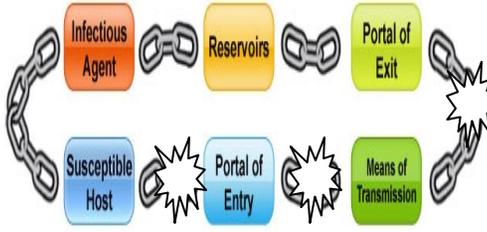
1	2	3	4
	Clinical Work Practice	STANDARD PRECAUTIONS	<p>Breaking the Chain of infection</p>  <p>The diagram illustrates the Chain of Infection as a continuous loop of six links. The links are: Infectious Agent (orange), Reservoirs (yellow), Portal of Exit (light green), Portal of Entry (light blue), Means of Transmission (green), and Susceptible Host (blue). The links are connected in a circular fashion, with Infectious Agent at the top left, Reservoirs at the top, Portal of Exit at the top right, Portal of Entry at the bottom right, Means of Transmission at the bottom, and Susceptible Host at the bottom left.</p>

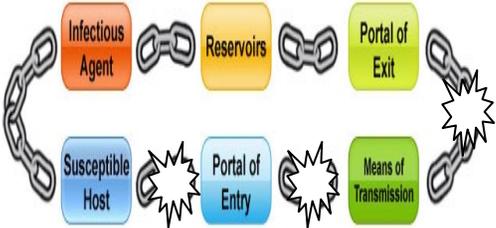
	Clinical Work Practice	STANDARD PRECAUTIONS	Breaking the Chain of Infection
2.1	Occupational Health Programme	<p>All HCW's should be assessed by an occupational health team prior to commencing work. This assessment should include:</p> <ul style="list-style-type: none"> ❖ immunisations (Irish guidelines on immunisations required for HCW's are available at http://www.ndsc.ie/hpsc/A-Z/VaccinePreventable/Vaccination/Guidance/#d.en.3066) ❖ screening HCW's who perform exposure prone procedures for blood borne viruses. DoHC guidelines available at http://www.dohc.ie/publications/transmission_of_blood_borne_diseases_2006.html 	
2.2	PATIENT PLACEMENT	<p>HCW's should include the potential for transmission of infectious agents in patient placement decisions</p> <p>Where possible, place patients who contaminate the environment or cannot maintain appropriate hygiene in isolation rooms with en suite toilet facilities and ante room</p>	
2.3	HAND HYGIENE	<p>Hand hygiene is recommended;</p> <ul style="list-style-type: none"> ❖ before and after each episode of patient contact ❖ between individual patient contacts ❖ after contact with blood, body fluids, secretions or excretions, whether or not gloves are worn ❖ after handling soiled/contaminated equipment, materials or the environment ❖ immediately after removing gloves or other protective clothing (see 2.6) <p>Hands may be decontaminated using both plain soap and water or if hands are physically clean, an alcohol based hand rub/gel</p> <p>Patients should wash their hands after toileting and before meals. HCW should assist those patients unable to perform hand hygiene independently.</p> <p>The Strategy for Antimicrobial Resistance (SARI) Guidelines on Hand Hygiene are available at http://www.ndsc.ie/hpsc/A-Z/Gastroenteric/Handwashing/</p>	

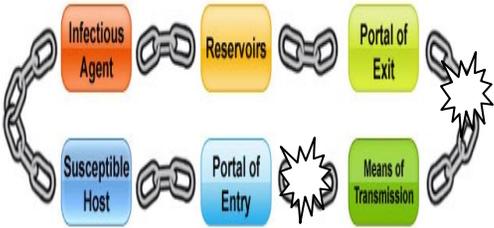
	Clinical Work Practice	STANDARD PRECAUTIONS	Breaking the Chain of Infection
2.4	Patient Movement and Transfer	No special precautions necessary	
2.5	Respiratory Etiquette/ Cough Etiquette	<p>Administrative</p> <ul style="list-style-type: none"> ❖ Educate HCW's on the importance of control measures to contain respiratory secretions to prevent droplet and contact transmission of respiratory pathogens, especially during seasonal outbreaks of viral respiratory tract infections (e.g., influenza, Respiratory Syncytial virus etc) in the community ❖ Ensure that supplies of tissues, foot operating waste bins and hand hygiene facilities are available in all departments including waiting areas throughout the facility <p>Information for patients/visitors/public</p> <p>Educate patients/visitors/carers on Respiratory Etiquette and Cough Hygiene using some or all of the following:</p> <ul style="list-style-type: none"> ❖ patient information leaflets ❖ welcome packs ❖ posters in all departments especially waiting areas <p>Additional Precautions during times of increased prevalence of respiratory infections</p> <ul style="list-style-type: none"> ❖ During periods of increased prevalence of respiratory infections in the community, offer masks to coughing patients and other symptomatic persons (e.g., persons who accompany ill patients) upon entry into the facility and encourage them to maintain special separation, ideally a distance of at least 3 feet, from others in common waiting areas <p>Some facilities may find it logistically easier to institute this recommendation year-round as a standard of practice.</p> <p>See appendix A for sample poster for Respiratory Etiquette/Cough Etiquette</p>	 <p>The diagram illustrates the Chain of Infection as a continuous loop. It consists of six colored boxes connected by chain links: an orange box for 'Infectious Agent', a yellow box for 'Reservoirs', a light green box for 'Portal of Exit', a green box for 'Means of Transmission', a blue box for 'Susceptible Host', and a light blue box for 'Portal of Entry'. The chain is broken at the 'Means of Transmission' link, which is shown as a jagged, starburst shape, indicating where interventions can break the cycle.</p>

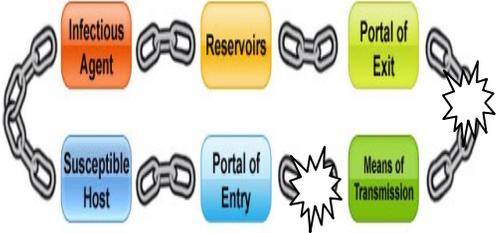
	Clinical Work Practice	STANDARD PRECAUTIONS		Breaking the Chain of Infection
2.6	Use of Personal Protective Equipment (PPE)	2.6.1 Type and Selection of PPE	PPE consists of: <ul style="list-style-type: none"> • gloves, • aprons/gowns • eye, nasal and mouth protection. Each HCW should make an risk assessment of the planned procedure and select PPE depending on; <ol style="list-style-type: none"> 1. The nature of the procedure 2. The risk of exposure to blood and body fluids 3. The risk of contamination 	 <p>The diagram illustrates the chain of infection as a sequence of six interconnected links: Infectious Agent (orange), Reservoirs (yellow), Portal of Exit (light green), Means of Transmission (green), Portal of Entry (blue), and Susceptible Host (light blue). A jagged starburst symbol is placed between the Portal of Exit and the Means of Transmission link, indicating a point where the chain can be broken.</p>
2.6.2 Gloves	Gloves should be single use items and should conform to European Community Standards Gloves are recommended; <ul style="list-style-type: none"> ❖ for all activities that carry a risk of exposure to blood, body fluids, secretions or excretions, sharps or contaminated instruments ❖ when touching mucous membranes and non-intact skin ❖ when handling contaminated equipment Gloves should be; <ul style="list-style-type: none"> ➤ single use only ➤ sterile if contact anticipated with sterile body site ➤ put on immediately before an episode of patient contact, and removed as soon as the activity is completed ➤ changed between patients caring for different patients and between different care activities on the same patient ➤ disposed of as health care risk waste if contaminated with blood or body fluids 			

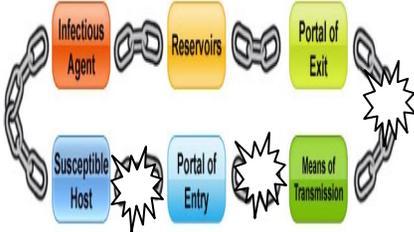
	Clinical Work Practice	STANDARD PRECAUTIONS		Breaking the Chain of Infection
2.6	Use of Personal Protective Equipment (PPE)	2.6.3 Face Protection	<p>Face protection should be worn where:</p> <ul style="list-style-type: none"> • there is a risk of blood, body fluids, secretions or excretions splashing into the face or eyes. • when placing a catheter or injecting into the spinal or epidural space <p>Face protection consists of one of the following:</p> <ul style="list-style-type: none"> • fluid repellent mask with separate goggles • face shield • fluid repellent mask with eye shield <p>Face protection should be;</p> <ul style="list-style-type: none"> • single use or single person use • face shields and goggles can be reused by the same HCW but they must be adequately cleaned and disinfected between patients by the user 	
2.6.4 Aprons or Gowns		<p>Disposable aprons should be worn where there is a risk that front of uniform/clothing may become exposed to blood, body fluids, excretions or secretions.</p> <p>Long sleeved fluid repellent gowns may be required if there is a risk that uniform/clothing and skin may be exposed to blood, body fluids, excretions or secretions.</p>		
2.6.5 Removal of PPE		<p>Remove PPE when procedure is complete. PPE should be removed in the following order and disposed of into Healthcare risk waste if contaminated with blood and/or body fluids</p> <ol style="list-style-type: none"> 1. Gloves 2. Apron/gown 3. Decontaminate hands (see 2.3) 4. Eye wear 5. Mask (do not touch the front of mask) 6. Decontaminate hands (see 2.3) 		

	Clinical Work Practice	STANDARD PRECAUTIONS	Breaking the Chain of Infection
2.7	<p>Environmental Decontamination</p>	<p>Routine environmental cleaning is required to minimise the number of micro-organisms in the environment.</p> <p>Particular attention should be given to frequently touched surfaces and those most likely to be contaminated with blood or body fluids e.g. bedrails, mattress, bedside tables, commodes, doorknobs, sinks, surfaces and equipment close to the patient.</p> <p>Chemical disinfectants are not recommended for routine environmental cleaning</p> <p>When using disinfectants, staff should follow the manufacturer's instructions for dilution and contact times.</p>	 <p>The diagram illustrates the chain of infection with six links: Infectious Agent (orange), Reservoirs (yellow), Portal of Exit (light green), Susceptible Host (light blue), Portal of Entry (medium blue), and Means of Transmission (dark green). The links are connected in a circular path. In this diagram, the links for 'Portal of Exit' and 'Portal of Entry' are broken, indicated by jagged starburst shapes, representing the breaking of the chain of infection.</p>
2.8	<p>Patient Care Equipment & Decontamination of Medical Devices:</p>	<p>Medical devices designated as "Single Use Only" must not be reprocessed or reused under any circumstances (MDA DB 2000), (MDD) 93/42/EEC</p> <p>Non Critical equipment Non critical equipment refers to equipment that is either not in contact with a patient or in contact with healthy skin. Such equipment should be:</p> <ul style="list-style-type: none"> • in a state of good repair in order to facilitate effective cleaning. • must be thoroughly cleaned prior to use on another patient/resident. If soiled with blood or body fluids, disinfect using a chlorine-releasing solution of 1000ppm, or equivalent according to manufacturers' instructions, rinse and dry. <p>Reusable Invasive Medical Devices (RIMD) RIMD refers to equipment that is classified as semi critical or critical. RIMD's are in contact with sterile body sites, mucous membranes, breaks in the skin. HCW's must ensure that RIMD's are not used for another patient until it has been cleaned and reprocessed appropriately. (HSE Code of Practice for Decontamination of Reusable Invasive Medical Devices 2007)</p> <p>http://www.hse.ie/eng/services/Publications/services/Hospitals/HSE_Publications/Code_of_Practice_for_Decontamination_of_Reuable_Invasive_Medical_Devices_7.pdf</p> <p>http://www.hpsc.ie/hpsc/A-Z/MicrobiologyAntimicrobialResistance/CJD/Guidance/</p>	 <p>This diagram is identical to the one in row 2.7, showing the chain of infection with broken links at 'Portal of Exit' and 'Portal of Entry'.</p>

	Clinical Work Practice	STANDARD PRECAUTIONS	Breaking the Chain of Infection
2.9	Management of Health Care Risk Waste	<p>Dispose of healthcare risk waste in accordance with the Department of Health & Children's (DoHC) Guidelines for Waste Disposal, which outlines the categorisation and segregation of health care waste.</p> <p>Disposal of sharps;</p> <ul style="list-style-type: none"> ❖ syringes and needles should be disposed of as a single unit. ❖ used sharps should be carefully discarded into designated sharps containers at the point of use. ❖ sharps boxes should be securely stored out of reach of clients, visitors and children ❖ needles should not be re-capped, bent, broken or disassembled. ❖ sharps should not be passed from person to person by hand. <p>DoHC Guidelines on Disposal of Health care Risk Waste are available at http://www.dohc.ie/publications/segregation_packaging.html</p>	
2.10	Management of needle stick injuries (NSI) and blood and body fluid exposure	<p>All facilities must have a local guideline on the management of needle stick injuries and blood and body fluid exposure. This guideline should include;</p> <ul style="list-style-type: none"> • First aid • Risk assessment and screening of source patient (if known) • Risk assessment for chemoprophylaxis • Counseling and follow up testing <p>Further information from http://www.dohc.ie/publications/transmission_of_blood_borne_diseases_2006.html</p>	

	Clinical Work Practice	STANDARD PRECAUTIONS	Breaking the Chain of Infection
2.11	<p>Laundry care</p>	<p>Laundry should be handled and transported in a manner that prevents transmission of micro-organisms to other patients, HCWs or the environment</p> <p>Staff handling soiled linen should wear gloves and a disposable plastic apron (see 2.6)</p> <p>Segregation and transportation of used laundry should be in accordance with the guidelines from the Society of Linen Services and Laundry Managers 2008)</p> <p>Staff should not manually sluice or soak soiled or infected linen /clothing</p>	 <p>The diagram illustrates the chain of infection as a sequence of links. From left to right, the links are: Infectious Agent (orange), Reservoirs (yellow), Portal of Exit (green), Portal of Entry (blue), and Susceptible Host (light blue). A Means of Transmission (green) link is positioned between the Portal of Exit and the Portal of Entry. A starburst symbol is located between the Portal of Entry and the Susceptible Host, indicating the point of infection.</p>

	Clinical Work Practice	STANDARD PRECAUTIONS	Breaking the Chain of Infection
2.12	Spillages	<p>Spillages of blood, urine, faeces or vomit should be dealt with immediately wearing protective clothing (see 2.6).</p> <p>For spillages of body fluid (e.g. urine, faeces or vomit);</p> <ul style="list-style-type: none"> soak up as much of the visible material as possible with disposable paper towels. dispose of the soiled paper towels according to national guidelines (see 2.9) clean the area using warm water and general purpose neutral detergent. disinfect using a chlorine-releasing solution of 1000ppm, or equivalent according to manufacturers' instructions, rinse and dry. discard gloves and apron according to national guidelines (see 2.9) decontaminate hands (see 2.3) do not apply chlorine-based disinfectants directly onto spillages of urine as it may result in the release of chlorine vapour. <p>For blood spillages;</p> <ul style="list-style-type: none"> decontaminate all blood spills with a chlorine based disinfectant (e.g. powder, granules or liquid containing 10,000ppm available chlorine) or suitable alternative, in line with the manufacturer's instructions and local policy wipe up the spillage with disposable paper towels and discard into a yellow healthcare risk bag or rigid container (see 2.9) Wash the area with a general purpose neutral detergent and water. discard gloves and apron into healthcare risk bag decontaminate hands (see 2.3) 	 <p>The diagram illustrates the Chain of Infection as a continuous loop of six colored boxes connected by chain links. The boxes are: Infectious Agent (orange), Reservoirs (yellow), Portal of Exit (light green), Means of Transmission (green), Portal of Entry (blue), and Susceptible Host (light blue). Two starburst symbols are placed between the 'Portal of Exit' and 'Means of Transmission' links, and between the 'Portal of Entry' and 'Susceptible Host' links, indicating where the chain is broken.</p>

	Clinical Work Practice	STANDARD PRECAUTIONS	Breaking the Chain of Infection
2.13	Safe Injection Practices	<p>Administration Educate all HCW's who administer injections on the importance of safe injection practices All facilities should have a guideline on the use of multiple dose vials</p> <p>Preparation of Injections All injections should be prepared in a clean area. This area must not be used for disposing of used needles and syringes, handling blood samples, or any material contaminated with blood or body fluids An aseptic technique must be used when drawing up injections Needles, syringes and cannulae are sterile, single use items; they must not be reused for another patient nor to access a medication or solution that might be used for a subsequent patient Use single dose vials wherever possible Do not use single dose vials for multiple patients Do not combine left over's for later use Wear a surgical mask when placing a catheter or injecting material into the spinal canal or subdural space</p> <p>Multiple vials Multiple dose vials should only be used when absolutely necessary Restrict wherever possible the use of multiple dose vials to a single patient Label vial with patients name and date opened Discard if sterility is compromised or questionable Do not leave multiple dose vials at a patient's bedside Use a sterile syringe and needle every time a medication vial is accessed even it is a 2nd dose of the same drug for the same patient</p> <p>Infusions and intravenous sets Do not use bags or bottles of intravenous fluids as a common source of supply for multiple patients Intravenous fluids and intravenous sets are single use sterile items for use by a single patient Consider a syringe or needle/cannula contaminated once it has been used to enter or connect to a patients' intravenous infusion bag or administration set.</p>	 <p>The diagram illustrates the Chain of Infection as a continuous loop of six interconnected links. Starting from the top left and moving clockwise, the links are: 'Infectious Agent' (orange), 'Reservoirs' (yellow), 'Portal of Exit' (light green), 'Means of Transmission' (green), 'Portal of Entry' (blue), and 'Susceptible Host' (light blue). Each link is connected to the next by a chain link, and the final link connects back to the first, forming a closed loop. There are starburst symbols at the connections between 'Portal of Exit' and 'Means of Transmission', and between 'Portal of Entry' and 'Susceptible Host', indicating the points where the chain can be broken.</p>

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Respiratory Hygiene and Cough Etiquette



When coughing or sneezing use a tissue to cover your nose and mouth



Dispose of the tissue afterwards in a waste bin



**Decontaminate your hands after discarding tissue using
soap and water or alcohol gel**

These 3 steps will help prevent the spread of respiratory infections

