Social Service Facilities

Guidelines on the Prevention of Communicable Diseases

澳門特別行政區政府衛生局
Serviços de Saúde do Governo da Região Administrativa Especial de Macau

Social Service Facilities—Guidelines on the Prevention of Communicable Diseases

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Foreword

As the society advances, people's lifestyle has changed drastically and interpersonal contacts have become closer than ever. Where contacts are frequent, a lack of understanding and attention to communicable diseases can easily give rise to outbreaks of common communicable diseases.

Communicable diseases can often be found in social service facilities. Since there is a large number of staff and service users being in close contact with one another, once an infectious disease occur in a social service facility, it may cause an outbreak of cross-infection. Besides, communicable diseases can not only undermine the health of the infected, but are also able to spread from social service facilities to the household and the community.

We hope that the "Guidelines on the Prevention of Communicable Diseases for Social Service Facilities" may serve as reference for the social service facilities to enhance staff's knowledge on the prevention and management of communicable diseases, so as to reduce the impacts of the diseases against the facilities and safeguard the health of the staff and the service users.

Nevertheless, these guidelines are by no means exhaustive. If further information about communicable diseases is needed, please visit the Health Bureau website www.ssm.gov.mo or contact our Centre of Disease Control and Prevention.

Lastly, we would like to take this opportunity to thank the Social Welfare Bureau for their professional and invaluable opinions for the compilation of these guidelines.

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Director of Health Bureau
Government of Macao Special Administrative Region

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Concepts of communicable diseases 01

1.1 What are communicable diseases?

Communicable diseases refer to diseases caused by pathogenic microorganisms (pathogens) or their toxins released, which can spread around through the modes of human-to-human transmission and animal-to-human transmission, and generate subsequent transmission.

1.2 The spread of communicable diseases consists of three components: source of infection, mode of transmission and susceptible host

- Source of infection: refers to human beings or animals from which the pathogens, after propagation, are secreted into the outer environment, e.g. patients, people with latent infection, carriers and infected animals.

- Mode of transmission: refers to the way(s) in which the pathogens move from one place to another. For example, chicken pox can be transmitted through the air or by touch.

Mode of transmission	Process	Examples of diseases
Direct contact	Through direct contact with the mucous membrane of the skin of the infected person, e.g. lifting and giving baths	Hand-foot-mouth disease, chicken pox, scabies, head lice, conjunctivitis
Indirect contact	Through contact with objects contaminated by pathogens, e.g. sharing towels, furniture and clothes	
Air spread	Pathogens suspend in the air and enter the body through the respiratory tract	Tuberculosis, chicken pox
Droplet spread	Transmitted through droplets (diameter>5μ) expelled during the patient's coughing, sneezing and speaking in a distance no further than 1m (3ft.), and the subsequent inhalation or contact with the mucous membranes of the eyes, the nose and the mouth	Influenza, severe acute respiratory syndrome (SARS)
Blood/body fluid transmission	Through blood transfusion, sharing syringes, tattooing and sexual intercourse.	Hepatitis B, acquired immune deficiency syndrome (AIDS)
Water and food	Eating or drinking contaminated food or water, or use of contaminated eating utensils	Food poisoning, cholera, hepatitis A, typhoid, dysentery, salmonella
Vectors (insects)	Vectors (e.g. insects, like mosquitoes) may spread pathogens through their contaminated mouth or feet after pathogens parasitize and multiply there	Dengue fever, scrub typhus, malaria, Japanese encephalitis

- Susceptible individual (host): Hosts refer to the people susceptible to infection. People with weaker immune system, such as infants, young children, the elderly and patients with chronic diseases are more prone to becoming hosts.

1.3 What is an outbreak?

As far as social service facilities are concerned, an outbreak occurs, in an epidemiological sense, when staff or service users develop similar symptoms one after another and the incidence rate is higher than that at ordinary times. A typical example is an influenza outbreak, which usually peaks in February and March in Macao.

1.4 Why are social service facilities more vulnerable to outbreaks of communicable diseases?

Social service facilities are collective living places where cross infection, i.e. the transmission of pathogens from one person to another, can easily happen due to close person-to-person contact; the source of infection can be staff, visitors or service users (e.g. service users newly discharged from hospital). For instance, staff member who fails to perform hand hygiene before and after caring for each service user may spread the pathogens from one service use to another.

1.5 Principles of communicable disease control

The spread of pathogens is attributed to several crucial factors, including the pathogens, the source of infection, the mode of transmission and the host, which comprise the chain of infection. Therefore, the control of the spread of communicable diseases should focus on these factors:

Factor of transmission	Control measures
Pathogens	• Disinfection and elimination of pathogens
Source of infection	• Early observation, isolation and treatment for patients; removal of pathogen breeding sites
Mode of transmission	• Maintenance of environmental, personal and food hygiene; adoption of effective infection control measures
Susceptible host	• Building up body immunity by doing sports, getting sufficient nutrition and rest • Immunization

1.6 Common communicable diseases in social service facilities

Some of the most common communicable diseases in social service facilities are respiratory tract infections, gastrointestinal diseases and skin infections, etc.

List of common communicable diseases:

Types of diseases	Pathogens	Modes of transmission	Symptoms	Prevention
Common cold	Rhinovirus, coronavirus, parainfluenza virus, respiratory syncytial virus, etc.	Droplets, touching mucous membranes of the mouth and the nose with hands contaminated by pathogens	Sore throat, runny nose, cough, low fever	Maintain good ventilation; observe good personal hygiene, cover the mouth and nose when sneezing and coughing, and handle respiratory secretions with care; wash hands frequently and build up body immunity.
Influenza	Influenza virus	Droplets, touching mucous membranes of the mouth and the nose with hands contaminated by pathogens	Fever, headache, muscle ache, runny nose, sore throat, cough	Same as the above. In addition, it is recommended to receive vaccination annually against influenza.
Infectious gastrointestinal diseases	Bacteria, e.g. Salmonella, Staphylococcus aureus, Vibrio cholera; viruses, e.g. Norwalk-like viruses (Norovirus/ Rotavirus)	Eating or drinking contaminated food or water; contact with vomit or excreta from the infected person	Low fever, nausea, vomiting, diarrhoea and abdominal pain	Suspend work and seek early consultation; handle vomit and excretion with special care.
Enterovirus infection (e.g. hand-foot-mouth disease, herpangina)	Enterovirus	Eating or drinking contaminated food or water; contact with contaminated objects or droplets	Fever, vesicles or painless rash in mouth and over limbs	Maintain good ventilation; observe good personal hygiene; cover the mouth and the nose when sneezing or coughing; handle secretions of the mouth and the nose with special care; wash hands thoroughly before meals and after going to the toilet; toys, furniture, etc. should be cleaned properly; the sick person should stay home until recovery; handle the children's excreta, vomit and diapers with care.
Chickenpox	Chickenpox virus	Air, contact and droplets	Fever, fatigue, vesicles on head, body, face and limbs (itchy)	Observe good personal and environmental hygiene; wash hands frequently; maintain good ventilation.

Types of diseases	Pathogens	Modes of transmission	Symptoms	Prevention
Tuberculosis	Mycobacterium tuberculosis	Air, infectious droplets expelled by carriers during speaking, coughing and sneezing may also transmit the disease	Fever, night sweat, fatigue, persistent cough, sputum with blood, chest pain, weight loss	Maintain good ventilation; observe good personal and environmental hygiene; do not spit; build up body immunity.
Scarlet fever	Group A Streptococcus	Infectious droplets or contact with respiratory secretions of the infected person	Fever; sore throat; strawberry-like tongue appearance; rough-textured rash over neck and the upper trunk, in particular in armpits, elbows and groin areas, etc.	Cover the mouth and nose when sneezing and coughing, and handle respiratory secretions properly; avoid sharing of personal items such as eating utensils and towels.
Skin and subcutaneous tissue infection	Mites or parasites (e.g. scabies, head lice)	Direct contact with the infected person or contaminated objects	Extreme itchiness, localized rash	Wear gloves during patient contact; clothing and bedding of patients should be disinfected.
Acute infectious conjunctivitis (red-eye syndrome)	Viruses Bacteria	Contact transmission	Irritation and foreign body sensation in the eye, conjunctival hyperaemia, and increased eye discharge	Observe good personal hygiene; avoid sharing towels or eye care products; avoid rubbing eyes with hands; wash hands before touching the eyes.
Dengue fever	Dengue virus	Transmitted through bites of infected aedes	Fever, headache, pain behind the eyes, muscle and joint pains as well as rash	Maintain environmental hygiene and remove stagnant water (the breeding source); avoid mosquito bites; build up body immunity.
Human Avian Influenza Infection	Avian influenza viruses	Contact with infected poultry and/or their secretions/excreta	With symptoms similar to those of influenza, but is more prone to high fever, pneumonia, respiratory failure and multi-organ failure	Refrain from having contact with poultry and their secretions/excreta.; wash hands immediately after such contact. Observe good personal and environmental hygiene, build up body immunity.

Types of diseases	Pathogens	Modes of transmission	Symptoms	Prevention
Severe Acute Respiratory Syndrome (SARS)	SARS coronavirus	Droplets, direct/indirect contact with secretion, excretion and body fluid	Fever, muscle ache, headache, chill, dry cough, shortness of breath, diarrhoea, difficulty in breathing	Observe good personal and environmental hygiene; wash hands before touching the eyes, the nose and the mouth. Maintain good ventilation, and build up body immunity.
Middle East Respiratory Syndrome (MERS)	Middle East Respiratory Syndrome Coronavirus (MERS-CoV)	Contact with the secretions/excreta of the infected animals such as dromedary camels; consuming unprocessed food or drink derived from such animals; contact with droplets of the infected person	Fever, muscle pain, cough, difficulty in breathing, diarrhoea, renal impairment	Observe good personal, food and environmental hygiene; avoid contact with the infected person. Avoid visiting farms and contact with animals, especially camels; never consume food or drink that has not been treated properly (e.g. raw camel milk and uncooked meat).
Ebola Virus Disease	Ebola virus	Contact transmission	Fever, intense weakness, muscle pain, headache and sore throat; vomiting, diarrhoea, rash, impaired kidney and liver function	Observe good personal, food and environmental hygiene; avoid contact with suspected patients and their secretions, excreta as well as bodily fluids. Avoid contact with animals or their carcasses; do not consume undercooked meat.

1.7 Recognition of infections

Apart from the typical signs and symptoms listed in Table 1.6, some service users may present symptoms that are more difficult to identify, in particular babies and the elderly who have communication problems such as lack of clarity or cognitive impairment (e.g. service users with dementia). All these factors can hinder timely detection of infection, resulting in potential delay of treatment and an increased risk of transmission. Hence, staff should also stay vigilant to the less obvious symptoms to facilitate early detection and management of communicable diseases.

1.7.1 Pay attention when the following signs and symptoms are found in children:

- Change in body temperature: Most children develop fever when infected but there are exceptions. Some children may have lower body temperature under normal condition; even when infected, there will be no or only a subtle increase in their body temperature. If the temperature is higher or lower than the child's usual body temperature, he/she may have contracted an infection.
- Crying or nagging for no reason, restlessness
- Lack of appetite
- Lack of energy
- Shortness of breath
- Frequent eye rubbing
- Frequent scratching

1.7.2 Pay attention when the following signs and symptoms are found in the elderly:

- The body temperature is 1˚C higher than usual: Most elderly people develop fever when severely infected, but the body temperature for some may not exceed the normal range. If the temperature of an elderly person is higher than usual by 1˚C or more, he/she may have contracted an infection.
- Confusion, disorientation and restlessness
- Changes in behaviour and body functions such as loss of bladder control
- Loss of appetite and/or unexplained weight loss
- Increased weakness and fatigue
- Lethargy
- Fall
- Shortness of breath
- Increased heart rate

1.7.3 Surveillance of daily health condition

Monitoring the physical conditions and behavioural patterns of children/ the elderly is conducive to the detection of bodily changes. Therefore, social service facilities are advised to maintain proper personal health records for each service users and check their temperatures regularly. More attention should be paid to those who have special health conditions or with medical devices attached to their bodies, since they are more vulnerable to the risks of infection.

1.7.4 Importance of taking body temperature

Taking body temperature for the service users on a regular basis can help identify changes in their temperature, thus facilitating the detection of infection. As such, it is very important to measure the daily body temperature of the high-risk service users and record readings as baseline data. Besides, temperature should be taken more frequently for service users who are:

- Feeble
- Having difficulty in communication
- Presenting symptoms of infection
- Newly discharged from hospital
- Not capable of taking care of themselves

1.8 Measuring body temperature

1.8.1 Core temperature and surface temperature

Body temperature can be divided into core temperature and surface temperature. Core temperature refers to the temperature of deep tissues, which can be taken through the mouth, rectum or ears, whereas surface temperature is the temperature of surface skin tissues, which can be taken through the armpit. Given that body temperature, in particular surface temperature, is susceptible to changes of the surroundings, the followings should be noted to ensure accuracy in measurement:

- Familiarize with the correct use of thermometers before taking body temperature;
- Temperature should be taken at about the same time using the same method to avoid deviations caused by changes in the surroundings or the use of different measurement methods;
- Service users should refrain from doing exercises or consuming excessively cold or hot food and drinks within 30 minutes before taking temperature.

1.8.2 Reference range of temperature readings

Body temperature varies with age, time of the day and level of physical activity. One is suspected of having a fever and should seek medical advice when the temperature reading exceeds the reference range below.

A fever is suspected when the body temperature is higher than the following reference range:

Measurement method	Celsius (˚C)	Fahrenheit (˚F)
Ear	38.0	100.4
Oral	37.5	99.5
Armpit	37.3	99.1
Rectal	38.0	100.4

1.8.3 If service users are found to have a temperature higher than the above refer ence or being 1˚C higher than usual

- Help the sick service users wear a mask;
- Wherever possible, send the patients to a separate room for rest/waiting, isolate or keep them at a distance from others;
- Arrange prompt medical consultation or inform their family/guardian to bring them for medical attention.

1.8.4 Types of thermometer

In general, there are mercury, digital and infrared ear thermometers, etc. for measuring oral, rectal, armpit, ear and forehead temperature. Before using a thermometer, read the instructions carefully for the proper procedure of use and the reference range of the readings, Accuracy, suitability and convenience should all be taken into account when choosing the appropriate thermometer. Infrared forehead thermometers are less accurate in measuring body temperature; hence, in case of doubt, another type of thermometer should be used to confirm fever.

Methods of taking body temperature

Method	Steps for measuring	Points to note	Scope of application
Oral	• Cover the thermometer with a plastic jacket • Place the thermometer under the tongue near the root • Tell the service user to close the mouth but not to bite on the thermometer or speak. • Wait for 3 to 5 minutes before taking it out to check the reading	• Avoid cold or hot food before taking temperature • Keep the mouth close and do not speak when taking temperature • If the service user carelessly bite off the mercury thermometer, he/she should be sent to the hospital immediately	• Suitable for service users who are conscious, compliant and able to close their mouth tight.
Ear	• Stabilize the head position of the service user, pull his/her ear backwards and upwards to make the ear canal straight • Fit the probe tip covered with a plastic jacket slightly into the depth of the ear canal • Follow the instructions to adjust the reading as appropriate	• The ear temperature is usually 0.5˚C higher than the oral one • The direction of the probe tip should be correct; otherwise it will give an inaccurate reading • The ear pressed against the pillow during sleep has a higher temperature, so the other ear should be used for taking temperature if one is just awake	• It is non-intrusive, and thus applicable to most people • Not suitable for persons with obstruction of the ear canal caused by ear wax or otitis
Rectal	• Ensure the privacy of the service users, help them lie down on one side with knees bent and protect them from catching cold • Cover the thermometer with a plastic jacket and put some lubricant on the tip • Insert the probe tip gently down about 2.5 cm of the rectum • Wait for 3 to 5 minutes before taking it out to check the reading	• The rectal temperature is 0.5˚C higher than the oral one • If large amount of faeces is accumulated in the rectum, the accuracy of the measurement will be affected	• Suitable for young children
Armpit	• Put the thermometer under the armpit of the service user, place his/her forearm horizontally across the chest to secure the thermometer • Wait for 3 to 5 minutes before taking it out to check the reading	• The armpit temperature is 0.5˚C lower than the oral one	• Suitable where all the above methods are not applicable

1.8.5 Cleaning and disinfection of thermometers after use

- Oral and rectal thermometers should be handled separately. Patients with communicable diseases are advised to use separate thermometers to avoid cross-infection;
- Mercury thermometers: Wash with water and detergent first, immerse in 70% alcohol for not less than 10 minutes, then wipe dry and store it in a dry place;
- Digital thermometers should be cleansed as recommended in the instructions. Do not immerse the thermometers in disinfectant or disinfect them with high temperature; otherwise the electronic components will be damaged, thus affecting their normal functioning.

General hygiene advice for social service facilities

02

Building up good body immunity by having a balanced diet, sufficient water, regular exercise, adequate rest, as well as avoiding over-fatigue and refraining from smoking are essential to the prevention of communicable diseases. Besides, it is also important to observe good personal, environmental and dietary hygiene. Therefore, staff of the facilities should not only observe their own personal hygiene, but also oversee the service users and provide support for the visitors to maintain a good living environment together.

2.1 Personal hygiene

2.1.1 For both staff and service users, the most important measure to prevent communicable diseases is to observe good personal hygiene.

- Discard used tissues properly;
- Cover mouth and nose with tissue paper when sneezing or coughing;
- Never share towels with others;
- Keep the body and the hair clean to prevent head lice;
- Staff's work clothing and service users' clothing should be changed every day;
- Seek early medical treatment when feeling unwell;
- Wash hands properly to keep hands clean (see Annex 6 for details).

2.1.2 When should staff perform hand hygiene?

- Before handling, cooking or distributing food;
- After using the toilet;
- Before and after touching eyes, nose, mouth and face;
- When hands are contaminated with respiratory secretions, e.g. after sneezing;
- Before wearing a mask and after removing a mask;
- After contact with excreta, vomit, secretions, blood, body fluids, contaminated objects and surrounding environment;
- Before and after cleaning or nursing procedures;
- After disposing of waste;
- Before and after going out.

2.1.3 When should service users perform hand hygiene?

- Before eating or drinking;
- After using the toilet;
- Before and after touching eyes, nose, mouth and face;
- When hands are contaminated with respiratory secretions, e.g. after sneezing;
- After contact with excreta, vomit, secretions, blood, body fluids, contaminated objects and surrounding environment;
- Before and after going out.

2.1.4 Proper hand washing method (see Annex 6 for details)

- Turn on the faucet and wet hands under running water;
- Apply liquid soap, lather the hands by rubbing them together;
- Away from the running water, rub the fingers, back of fingers, between the fingers, finger tips, palms, back of hands and wrists for at least 20 seconds;
- After rubbing, rinse hands thoroughly under running water;
- Dry hands with a paper towel or a hand dryer;
- Do not touch the faucet with washed hands; wrap the faucet with the paper towel or clean it by splashing with water before turning it off.

2.1.5 Note:

- When handwashing equipments are not available or when hands are not visibly soiled, hand hygiene can be performed by rubbing hands with 70% alcohol-based handrub for at least 20 seconds (see Annex 6 for details);
- Wearing gloves can never replace proper hand-washing.

2.2 Food hygiene

2.2.1 Points to observe for kitchen staff before work

- Examine uniforms, aprons or work clothes to ensure cleanliness;
- Wash hands and forearms properly;
- In the event of respiratory, gastrointestinal or skin diseases, seek medical consultation at once and suspend from work requiring contact with food.

2.2.2 Points to observe for kitchen staff at work

- Wear a clean mask, a hair restraint (hat or hairnet), an apron, etc.;
- Refrain from wearing jewellery or using strong perfumes/after-shaves;
- Smoking is prohibited in workplaces according to Law no. 5/2011 “Regime of Tobacco Prevention and Control”
- Alcohol drinking is not allowed;
- Do not enter service users’ living/activity areas when wearing kitchen work clothes;
- Always maintain personal and environmental hygiene.

2.2.3 Personal hygiene and protection

- Wash hands frequently; keep hair tidy and clean; keep nails short and clean and avoid applying nail polishes; avoid wearing jewellery such as rings, bracelets, etc.;
- Avoid touching nose, mouth, hair and skin when handling food;
- Do not touch cooked food or ready-to-eat food with bare hands;
- Do not cough or sneeze over food; perform hand hygiene after coughing and sneezing;
- Avoid nose picking and eye rubbing; if it is necessary to do so, wash hands thoroughly before and after performing such actions;
- In case of wounds on hands, cover wounds with water-proof plasters or bandage wounds with water-proof dressing to prevent passing pathogens from wounds to food, and wear disposable gloves when handling and cooking food; in case of wounds or septic sores on arms, bandage wounds completely with water-proof dressing; gloves and bandages should be changed regularly;
- Kitchen staff with gastroenteritis (e.g. diarrhoea and vomiting) or respiratory symptoms (e.g. fever and cough) should stop handling food until recovery, report to the person-in-charge and seek early medical advice. Staff of social service facilities should watch out for similar symptoms among service users and co-workers.

2.2.4 Choice of food

- Patronize licensed and reputable shops;
- Buy fresh and healthful food;
- When purchasing milk products, select pasteurized milk products or those with bacteria killed with heat and time control;
- Do not purchase high-risk food such as shellfish, high-fat food and preserved food;
- Do not buy prepackaged food from unknown sources, beyond its expiry date, with incomplete or damaged packages, or without proper labelling;
- Do not buy food which looks, smells or tastes abnormal;
- Do not buy excessive food to avoid problems arising from prolonged storage;
- Do not buy ready-to-eat food or drinks that are displayed together with raw food.

2.2.5 Food handling

- Perform hand hygiene before handling food;
- To avoid cross-contamination, handle raw food and cooked food separately; use separate utensils, chopping boards, knives and gloves;
- Handle food in descending order of cleanliness: dry food → vegetables → poultry and meat → fish and shellfish;
- Wash food materials thoroughly, scrub with a brush when appropriate to remove residual pesticide in vegetables;
- Do not thaw at room temperature; frozen meat and fish should be thawed in a cool environment (e.g. at 0-5°C);
- Frozen food materials must be thawed completely before cooking;

- Cook food thoroughly before eating; use a food thermometer to ensure that the core temperature of food reaches beyond 75˚C;
- Do not touch cooked food with bare hands; sample food with a clean spoon;
- Consume food as soon as it is cooked;
- Refrain from cooking too much food to avoid wastage and storage;
- Reheat cooked food thoroughly (i.e. until core temperature reaches beyond 75˚C) before eating.

2.2.6 Food transportation

- Food should be covered in an appropriate and closed container when served from kitchen to table;
- Monitor the storage temperature to ensure that hot dishes maintain at above 60˚C and cold dishes at below 5˚C during transportation;
- Minimize the time for transportation;
- Ensure the sanitation of vehicles and elevators used for food transportation; use a separate vehicle and elevator as far as possible; if it is not probable, perform sanitization before and after food transportation;
- Vehicles delivering cooked food cannot be used for other purposes such as transporting raw meat or raw vegetables;
- Staff should wear mask and disposable gloves when transporting food.

2.2.7 Food items are preferably stored at least 15 cm above the floor, and dry food at least 10 cm apart from walls

- Classify and shelve food appropriately; for example, raw food and cooked food should be stored separately;
- Pay attention to the label instruction of prepackaged food and adhere to the “first-in-first-out” principle”; check regularly to get rid of spoiled and expired food;
- Perishable food and raw meat that are not to be handled on the instant should be stored in refrigerating apparatus at below 5˚C, and the storage time should be shortened wherever practicable;
- Do not put food in paper boxes or wrap food with newspaper, unclean paper or coloured plastic bags; store food in covered containers to prevent their juices from leaking out;
- Perishable food should be properly packed with plastic wraps, in zipper bags or clean covered containers immediately after purchase, and then stored in a refrigerator; never leave it at room temperature without proper handling;
- Make sure the refrigerator is clean and functioning properly, clean the refrigerator and the freezer at regular intervals; keep the temperature inside the refrigerator at 0-5˚C, and the freezer at or below -18˚C; it is recommended that each refrigerator have a log book with temperature recorded regularly. Avoid overcrowding the refrigerator to allow adequate ventilation; store raw food and cooked food separately (cooked food on the upper shelves and raw food at the bottom) to avoid cross-contamination.

2.2.8 Meal arrangement

- Keep the dining area well ventilated; have a reasonable number of diners at a time to avoid overcrowding;
- Smoking is prohibited in dining areas as per Law no. 5/2011 “Regime of Tobacco Prevention and Control”, spitting is not allowed either;
- Food dispensing staff should wear masks, disposable gloves and clean aprons;
- Minimize the time for dispensing meals as far as possible;
- Avoid touching food with bare hands; all food dispensing utensils, eating utensils, bowls and chopsticks, etc. should be cleaned and disinfected thoroughly;
- It is preferable for staff and service users to take meals separately;
- When dining, both staff and service users should use their own eating utensils and have the food served in individual portions.

2.3 Environmental hygiene

Pathogens can survive in the environment for a period of time; hence, environmental hygiene is very important.

2.3.1 Maintain good indoor ventilation

- Maintain good indoor ventilation;
- Create a smokeless environment;
- The ventilation systems/equipment should be kept in good condition; cleaning and maintenance should be performed periodically by qualified persons;
- Facilities occupying part of a building must not share ventilation system with other parts of the building.

2.3.2 Observe environmental hygiene

- Avoid using rugs or carpets that are difficult to clean;
- Empty water in the saucers underneath flower pots and change water in vases at least weekly; level all defective ground surfaces and seal all openings on external walls to prevent accumulation of stagnant water and breeding of mosquitoes;
- Avoid stacking unnecessary articles to prevent rodent infestation. Commence clean-up and pest control actions immediately when there are any signs of pest or rodent infestation;
- Pesticides and rodenticide should be used and stored according to the instructions on the package, and be clearly marked; avoid excessive exposure to chemical substances and pollution to the environment; wash face and hands after cleaning procedures;
- Wear gloves when handling carcasses such as dead cockroaches; areas or equipment (including the gloves) having contacted with such carcasses should be washed and disinfected with 1 in 100 diluted bleach as soon as possible;
- Keep appropriate distance (not less than 3 feet) between beds or groups of beds to reduce the risk of transmission of diseases via droplets.

2.3.3 Cleaning and disinfection of toilets and bathrooms

- Ensure proper operation of the equipment;
- Provide toilets with liquid soup, disposable paper towels or hand dryers;
- Ensure each drain pipe is built with a trap and do not alter the pipelines without authorisation;
- Make sure the drains and pipes are free from blockage and leakage;
- Make sure the flushing system of the toilet is in proper function;
- Clean and disinfect toilets and bathrooms at least once a day.

2.3.4 Cleaning and disinfection of kitchens

- Dispose of garbage properly to prevent pest and rodent infestation; areas for food preparation and handling should be equipped with an effective pest control system;
- Open windows and keep the exhaust fans operating to ensure adequate ventilation in the kitchen while working;
- Eating utensils should be kept in a clean cupboard after washing (see Annex 2 for cleansing and disinfection of eating utensils); ensure that the refrigerating apparatus is clean, in proper function, and equipped with temperature monitoring and alarm system;
- Keep worktops and floors of kitchen dry and clean;
- Provide staff with dedicated hand washing equipment;
- Do not store personal items such as clothing in the kitchen;
- Put food residues into a sealed waste bag before discarding it in garbage bin.

2.3.5 Cleaning and disinfection of drainage pipes

- Check the basins, bathtubs, toilet bowl and floor drains regularly (Qualified technicians can be hired for inspection and repair);
  - Ensure that each of the above sanitary fitments are fitted with a trap;
  - Ensure that the traps are properly installed and do not alter the pipelines without authorisation;
  - Make sure the U-shaped water traps are free of cracks, defects and leaks;
  - Make sure the drainage pipes are unobstructed;
- Drains in the kitchen, toilet and other parts of the facility should be disinfected at least once a week to prevent the spread of pathogens;
  - Pour one tablespoon of 1:100 diluted bleach into the drains;
  - Five minutes later, pour half a litre of water into the drains;
  - Spray insecticide into the drain.

- Pour water into the drains regularly to ensure the U-shaped water traps are not dry;
- At night, close the drains with airtight drain covers which can be opened for the discharge of the drainage water. Replace them if they are found damaged.

2.3.6 Cleaning and disinfection of medical rooms

- Clinic desks and beds should be wiped with 1:100 diluted bleach after every use;
- Ensure that relevant equipment are cleaned and disinfected properly before and after performing nursing procedures such as sputum suction (see Annex 4); in the meantime, adopt all other necessary precautionary measures against infection.

2.3.7 Cleaning and disinfection of isolation room

- Staff should wear gloves, apron and mask when cleaning and disinfecting the isolation room;
- Vacant isolation room should be cleaned once a week;
- If the isolation room is occupied, it should be cleaned at least once daily; besides, it should be cleaned thoroughly before and after each occupation, in particular doors, windows, handles, handrails, switches/buttons, etc;
- All used yet unsoiled items of the patients, such as bed sheets, quilt covers, clothing and towels, can be washed in compliance with the cleansing procedure in Annex 2; however, such items should be washed separately from those of other service users.

2.3.8 Cleaning and disinfection of special vehicles

- If a vehicle is used to carry service users, good cleanliness and sanitation of the vehicle compartment should be ensured;
- Clean the ventilation system/equipment regularly, preferably at least once a month;
- Provide each vehicle with a garbage bag, as well as tissue paper, vomit bags and surgical masks in case it is necessary;
- Maintain good ventilation in the vehicle compartment when the vehicle is in motion.

2.4 Management of livestock and pets

- Do not keep poultry (e.g. chicken, ducks, geese, etc.) and avoid keeping pets (e.g. dogs, cats, birds, etc.) in a service facility;
- Keep pets clean if there are any, pay attention to their mental and behavioural status (e.g. watch out for sluggishness, diarrhoea, abnormal behaviours, etc.);
- Take pets to a designated potty spot (e.g. a dog toilet) on a regular basis; if pets foul the facility, clean up their mess immediately and place in a pet waste bin;
- Restrict pets' access to the kitchens, the living areas and rest areas of the service users;
- In event of abnormality or suspected illness in pets, take it to a veterinarian as early as possible or inform the Social Welfare Bureau for follow-up actions.

2.5 Vaccination

- Receive vaccination regularly as advised by the Immunization Programme of Macao SAR (Annex 3);
- Diseases which can be prevented by vaccination: hepatitis B, pneumococcal disease, measles, mumps, rubella, tetanus, tuberculosis, poliomyelitis, haemophilus influenzae type b (Hib) infection, diphtheria, whooping cough, etc.

3.1 Standard precautions

Standard precautions are essential to stemming the spread of pathogens, applicable to all staff members and service users. When coming into contact with blood, body fluid, vomit, excreta, sputum, secretions, wound and mucous membrane, staff and service users should handle them in compliance with the standard precautions.

Standard precautions include:

- Hand hygiene;
- Cleaning and disinfection of soiled articles;
- Handling of sharps;
- Waste disposal;
- Personal protection equipment (PPE).

3.1.1 Hand hygiene

- Hand hygiene, including washing hands and the correct use of alcohol-based handrub, represents the most essential and fundamental protective measures;
- Principle of hand hygiene: Staff and service users should wash hands frequently (see Chapter II: Personal Hygiene). Proper hand hygiene can prevent cross-contamination in the facility and minimize the spread of communicable diseases;
- Proper hand washing procedures (see Annex 6);
- If hands are not visibly soiled, perform hand hygiene by rubbing hands with alcohol-based handrub (see Annex 6).

3.1.2 Cleaning and disinfection of soiled articles

- If the environment, facilities or equipment are soiled by sputum, vomit, excreta, blood or other similar contaminants, staff and service users (and any other person) should avoid contact with the contaminants;
- Ensure that all used or unpacked instruments/articles are thoroughly cleaned and properly stored;
- Cleanse all visible soils before disinfection procedures;
- Ensure the disinfectant reaches both the external and internal surfaces of an article;
- Articles that cannot be disinfected with bleach, such as metals or digital devices, can be wiped clean with 70% alcohol;
- Clean and disinfect common nursing instruments of the facility (see Annex 4).

3.1.3 Handling of sharps

- When handling sharps (e.g. recapping needles), prevent contamination from sharps injury;
- Under general situations, used needles should not be recapped; if inevitable, recap with the aid of a mechanical device and adopt the one-handed scoop technique; syringes, needles and other sharps should be discarded in the yellow sharp box;
- Pay attention to the contents volume of the sharp box. When the sharp box is 3/4 full, it must be collected and disposed of properly (which must be outsourced to a local, franchised cleaning company);
- Keep the sharp box dry.

3.1.4 Waste disposal

- Domestic waste and clinical waste should be handled separately;
- Waste should be discarded in a sturdy and lidded rubbish bin that is lined with a plastic bag; social service facilities should have an adequate number of rubbish bins, preferably pedal bins;
- Clinical waste such as dialysis bags, nasal tubes, gastric tubes and blood-stained gauzes must be discarded in a yellow rubbish bag, stored properly and separated from other rubbish bins; such waste should be cleared away by a local, franchised cleaning company at least once a week;
- Rubbish bins should be emptied in a timely manner;
- Waste pending disposal should be stored in a designated place, which should likewise be cleaned and disinfected regularly;
- Rubbish bins and refuse room should be cleaned at least once a day following the steps of cleaning and disinfection listed below:

  a. Wipe clean with 1:100 diluted bleach;

  b. Wait for 30 minutes to allow disinfection action;

  c. Wipe clean with water;

  d. Place cleaned rubbish bins upside down and off the floor to drain.

3.1.5 Personal protection equipment (PPE)

- In view that staff of the facilities are likely to come into contact with sputum, vomit, excreta, blood or clinical waste, in order to lower the risk of infection and avoid becoming the vector of transmission, they should wear appropriate protective equipment depending on the risk of nursing procedures and the health condition of service users, so as to safeguard individual and public safety;
- A facility should reserve appropriate quantity of PPE for staff (see Annex 5);
- Familiarize with the sequence of donning and removing PPE (see Annex 7).

a. Gloves

- Wear gloves when performing procedures requiring contact with blood, body fluid, secretions, excreta and contaminated waste; remove/ replace gloves after the procedures or prior to contact with another service user;
- Wear gloves before making contact with mucosa or wounds;
- Remove gloves and perform hand hygiene immediately after each task or procedure, to avoid contaminating other body sites and transmitting pathogens to other persons or environment;
- When gloves are contaminated, do not touch the environment, uncontaminated objects or uncontaminated body sites of a patient;
- Never re-use gloves.

b. Surgical mask

- Select three-layer surgical mask to prevent infection;
- Persons with symptoms of respiratory tract infection should wear mask;
- Staff should wear mask when taking care of service users with respiratory symptoms;
- Wear mask properly to ensure optimal protection (see Annex 7).

c. Protective gown

- Wear a protective gown during nursing procedures to protect skin, personal clothing or uniforms from soiling with droplets, blood, body fluid, urine or infectious substances;
- Remove or change protective gown immediately after nursing procedures or when it is soiled with blood, etc;
- Wash hands immediately after taking off protective gown.

d. Goggles and face shield

- Wear mask, preferably with goggles and face shield as well, when performing operations or nursing procedures that may induce splashing of blood, body fluid, secretions and excreta.

e. Other protective equipments, such as cap and shoe covers

- When performing operations or nursing procedures that may induce splashing of blood, body fluid, secretions and excreta, wear cap and shoe covers to prevent soiling and reduce the chance of carrying pathogens from one place to another via hair and shoes.

Appropriate PPE

Equipments: mask, gloves, protective gowns or aprons (wear goggles, cap and shoe covers in case of splashing situations)	
Performing high-risk and potentially risky nursing/ caring activities	**When coming into contact with bodily secretions** ● Handling bedpans, used diapers and ostomy bags for faeces; ● Handling urethral catheter and urine bags; ● Handling excreta, vomit, respiratory secretions, blood, body fluid or contaminated objects; ● Assisting service users in brushing teeth, washing face and shaving; ● Disposing of waste, contact with contaminated articles such as soiled protective gowns and waste; ● High-risk nursing such as phlegm patting, sputum suction with vacuum suction machine, etc; ● Bed making: risk of contact with secretions such as sputum, urine, faeces and blood. ● Feeding: the elderly may vomit from coughing, sneezing or swallowing. **When having close contact with service users** ● Changing dressings and performing wound care; ● Measuring blood pressure and body temperature, etc; ● Lifting, turning, assisting in mobility and donning restraint.

3.2 Transmission-based precautions

Apart from observing good personal and environmental hygiene, it is necessary to adopt precautionary measures based on different modes of transmission:

Mode of transmission	Examples	Precautions
Droplet transmission	Influenza, Severe Acute Respiratory Syndrome (SARS)	● Maintain good ventilation ● Cover nose and mouth with tissue paper when sneezing or coughing ● Discard used tissues properly ● Patients and caregivers should wear surgical masks ● Keep hands clean. Perform hand hygiene properly and immediately after making contact with respiratory secretions such as nasal discharge ● Properly isolate or keep patient at least 1 metre away from others ● Wear a protective gown when caring for the sick ● Adopt proper isolation ● Wash hands properly

Mode of transmission	Examples	Precautions
Air-borne transmission	Pulmonary tuberculosis, Chickenpox	• Maintain good ventilation • Cover nose and mouth with tissue paper when sneezing or coughing • Discard used tissues properly • Patients should wear surgical masks, and caregivers N95 masks • Keep hands clean. Perform hand hygiene properly and immediately after making contact with respiratory secretions such as nasal discharge • Wear a protective gown when caring for the sick • Adopt proper isolation • Wash hands properly
Contact transmission	Acute infectious conjunctivitis (red-eye syndrome), scabies, gastroenteritis	• Keep hands clean • Wear gloves and/or a protective gown when making contact with the patient • Clean and disinfect items used by the patient • Do not share articles with others • Adopt proper isolation

3.3 Isolation measures

If a service user is found to have a communicable disease, infection control measures must be strictly implemented in the facility; the patient should be temporarily isolated to curb the spread of the disease.

3.3.1 Residential facilities

- A facility should have at least one isolation room for contingency use. Where no room is available for this purpose, make sure to inform the Social Welfare Bureau and obtain its approval before making use of other airy indoor areas (such as activity room or living room) as a provisional isolation room; meanwhile, the areas so used should be segregated from any area accessed by other service users;
- Apart from beds, an isolation room should also be equipped with a cupboard (for storing protective equipments) and hand-washing utilities;
- Service users suspected of a communicable disease should be placed in the isolation room as soon as possible;
- Isolation durations should be decided by the doctors. Wherever possible, the patients should remain in the isolation room until their periods of communicability are over;
- Appoint designated staff to care for the suspected patients; unauthorised staff and other service users must avoid accessing the isolation rooms; staff entering the isolation rooms must wear mask, gloves and, depending on the circumstances, other suitable protective clothing, and perform hand hygiene before and after accessing the isolation rooms;
- Whenever possible, each isolation room should be allotted to one service user at a time; in case of insufficient space, service users with similar symptoms may share the same room, provided that their beds are appropriately apart (under no circumstances should bed-to-bed distance be less than 3 feet) and installed with a screen in between for segregation purpose.

3.3.2 Non-residential facilities

- A facility should have at least one individual room for contingency use. Where no room is available for this purpose, other areas may be made use of, provided that the area so used is segregated from any area accessed by other service users and installed with a screen for segregation purpose;
- Contact the family/guardian of the patient to arrange for prompt medical consultation.

3.4 Staff management

3.4.1 Physical examination

- Arrange for new recruits to receive physical examination such as chest X-ray and physical check. The Health Bureau does not require hepatitis B testing in general pre-employment examination; however, for those whose jobs will foreseeably involve frequent contact with blood, hepatitis B testing is recommended. The test does not aim to prevent people tested positive from pursuing relevant occupation; instead, it aims to avoid dispute of liability in case hepatitis B is contracted in the course of work in the future. In addition, new recruits who are non-immunized and uninfected should be advised to receive vaccination at a medical institution, whereas those with chronic hepatitis should receive treatment regularly as advised by the attending doctor;
- Arrange regular health screening for on-service staff, preferably once every two years (with chest X-ray check).

3.4.2 Provision of protective equipment

- Ensure that there are adequate disinfectants (e.g. alcohol, bleach, etc.) for 30 days' use;
- In respect of other PPE, e.g. masks, gloves, protective gowns, disposable aprons, caps and shoe covers, aside from the amount required for operational needs, make sure to have adequate reserve pursuant to the guidelines (see Annex 5).

3.5 Service user management

Staff should pay attention to the personal hygiene and health status of the service users.

3.5.1 It is recommended to measure and record the body temperature of service users every day, and appropriately increase the frequency of temperature taking under the following circumstances:

- Service users with communication problems and those who are frail;
- During outbreaks of communicable diseases, particularly influenza-like illness;
- Service users newly discharged from hospital.

3.5.2 Establishing infectious diseases surveillance mechanism

- Establish an infectious diseases surveillance mechanism and complete the Form for Surveillance of Infectious Diseases in Social Service Facilities (Annex 8) via the online system on a daily basis. This record will serve as the baseline data of service users in the facility;
- When the number of sick people in the facility is found to be higher than usual, it suggests that the facility is at risk of a communicable disease outbreak. The facility should complete the Notification Form of Collective Illness related to Infectious Diseases in Social Service Facilities in accordance with the infectious diseases reporting mechanism (see Annex 10) and report to the Health Bureau and the Social Welfare Bureau immediately.

3.5.3 New user placement management

- New service users must receive physical checkup (chest X-ray at least) before their placement;
- Under special circumstances where urgent placement is needed for new users before their test results become available, they should be placed in a separate room; if the circumstances do not allow, they should be placed in an indoor area reasonably segregated from the living and activity areas of other service users with, e.g. screening;
- Temporary user placement: Please refer to the management of new user placement;
- Perform health screening for service users regularly, preferably once every two years (with chest X-ray).

3.5.4 Care of service users newly discharged from hospital:

- Take care of and assist service users in showering, washing hair and changing clothes;
- Closely monitor the health conditions of the service users, take corresponding precautions in case of respiratory symptoms or gastrointestinal symptoms;
- Measure their body temperature more frequently in the first week after they return to the institution;
- Strictly observe personal hygiene.

3.5.5 Travel management

- Staff members and service users should be advised to avoid travelling to any epidemic-affected areas;
- Where visit to epidemic-affected areas is inevitable, they should record their travel destination and duration, and adopt appropriate precautionary measures. They must also pay close attention to their health condition after returning to Macao, and seek medical consultation at once if feeling unwell.

3.6 Visitor management (applicable to residential facilities)

- If conditions allow, set up a visiting room to avoid visitors from accessing the living area and rest area of the service users;
- Service facilities should request visitors to provide basic contact information, including:
  - a. Name of the visitor and the visited;
  - b. Telephone number of the visitor;
  - c. Date and time of visit.
- Explain to visitors the reason for collecting their personal information, e.g. to contact them at once in case an infectious disease occurs in the service facility;
- Arrange for visitors and the visited service users to perform hand hygiene or disinfect hands before and after meeting each other, and provide visitors with relevant equipments and articles as needed;
- Wherever possible, post a notice in a conspicuous place at the entrance to remind visitors to notify staff if they feel ill;
- Take body temperature for the visitors whenever necessary. If visitors are unwell, the service facility should advise them to seek medical consultation promptly, wear mask and/or suspend the visit.

3.7 Healthcare-associated infection control (The content of this session is supervised by the Social Welfare Bureau)

- A proper and well-established nursing protocol can reduce the risk of infection in service users with special health condition.

The following are the points to note for caregivers performing common nursing procedures in residential facilities.

3.7.1 Service users requiring indwelling urethral catheter are exposed to a higher risk of urinary tract infection. Here are the keys to reducing the risk of infection:

Table 1: Points to note for caring of service users with indwelling urinary catheter

Aspects	Points to note
Nursing staff	• Catheters should be changed regularly by an experienced registered nurse;
Nursing procedures	• Wash hands thoroughly before and after nursing. Wear the appropriate type of disposable gloves based on the nursing procedures; • Check if the service user has cloudy and smelly urine, malaise or fever. If so, seek medical consultation promptly; • Keep the urine bag clean and change it regularly whenever necessary; keep watch on and record the urine output; • Observe the height of the urine bag and keep the catheter free of kinking at all times. In particular, when helping the service user change positions, the urine bag should be placed below the level of the bladder to avoid backflow of urine which may lead to urinary tract infection; • Do not disconnect the urine bag from the catheter. If it is necessary to do so, perform hand hygiene and disinfect the connection part with alcohol swab after disconnection and before reconnection;
Service users	• Use bladder training to minimize the need for urethral catheters; • If indwelling catheter is required, the nursing staff should choose small-size catheters as far as possible, to lower the risk of infection; • Unless the service users are asked to limit their fluid intake, they are encouraged to drink more fluids (1500-2000ml a day) to help dilute the urine. This can not only help irrigate the catheters, but also reduce the risk of urinary tract infection.

3.7.2 Service users requiring nasogastric tube feeding are exposed to a higher risk of aspiration pneumonia. Here are the keys to reducing the risk of infection:

Table 2: Points to note for caring of service users with indwelling nasogastric tube

Aspects	Points to note
Nursing staff	• Nasogastric tubes should be changed regularly by an experienced registered nurse;
Nursing procedures	• Wash hands thoroughly before and after nursing. Observe proper feeding procedures, in particular the position of the service users. For example, prop up the service user in an upright position of 30-60 degrees. (Bed-bound service users should be placed in a half-sitting position of at least 30 degrees.) ; • Before feeding, use various testing methods to check the tube position and verify placement within the stomach; examine the service user's digestibility to assess the need to adjust the feeding amount; • Keep the service user in a half-sitting position for 30-60 minutes after feeding, to prevent food from entering the airways; • Pay attention to oral and nasal hygiene; oral cavity should be cleansed and inspected at least twice daily;
Handling of articles	• After feeding, the feeding sets must be cleaned and properly kept in the exclusive container of respective service users; • After each feed, the feeding bottle and feeding tube should be flushed with water and air-dried before putting into the container. The feeding bottle should be disinfected daily with boiling for 10 minutes (or as recommended in the instructions). The feeding tubes should be changed once daily; • Each service users should have their own feeding bottle and feeding tube.

3.7.3 In respect of pressure ulcer and associated infection, prevention is always better than post-infection treatment. Here are the keys to reducing the risk of infection:

Table 3: Points to note for caring of service users with pressure ulcer

Aspects	Points to note
Nursing procedures	● Help service users to keep their skin and clothing dry and clean, avoid prolonged skin contact with sweat, urine or faeces which leads to skin lesions and infection; ● Help bed-bound service users to maintain correct postures to lower the risk of pressure ulcer; ● Apply proper techniques in lifting and turning, to avoid development of pressure ulcer; ● In light of the condition of the service users, help them change their position at least once every two hours. When doing so, avoid rubbing or bumping their body against the bed; ● Consider various pressure-relief aids, such as air mattress; ● Wash hands thoroughly before handling wounds; wear disposable gloves when performing wound care (wear disposable sterile gloves in case of deep wound or excessive secretions); observe aseptic procedures; perform hand hygiene when finished.
Service users	● Encourage regular exercise to enhance mobility and facilitate blood circulation.

04 Response to communicable disease outbreaks

If staff or service users develop symptoms of communicable diseases (such as fever, runny nose, vomiting, diarrhoea, etc.) one after another and the incidence rate is higher than that at ordinary times, the facility should be vigilant of a potential outbreak.

4.1 General management of suspected outbreak

- Arrange for the patients to be properly isolated and seek early consultation;
- Notify the family / guardian of the patients;
- Complete and keep proper medical record of the patients / staff;
- Notify the attending medical institution of the occurrence of an outbreak in the facility;
- Suspend all group activities; minimize contact between service users and staff of different floors to avoid cross-infection;
- Minimize staff movement. As far as possible, designate a team of staff to take care of a fixed group of patients showing similar symptoms;
- Clean and disinfect the environment more frequently;
- Discourage visits to the facility;
- Complete the Notification Form of Collective Illness related to Infectious Diseases in Social Service Facilities in accordance with the infectious diseases reporting mechanism (see Annex 10) and report to the Centre for Disease Control and Prevention (CDC) of the Health Bureau and the Social Welfare Bureau.

4.2 Reporting of communicable diseases

4.2.1 When a social service facility is suspected to have an outbreak of communicable disease, notify CDC of the Health Bureau and the Social Welfare Bureau immediately in accordance with the infectious diseases reporting mechanism (see Annex 10), provide relevant information and fax the completed Notification Form of Collective Illnesses related to Infectious Diseases in Social Residential Institutions, so as to facilitate investigation by the Health Bureau and the Social Welfare Bureau, and enable control measures to be implemented in a timely manner; report the number of new cases / absentees on a daily basis and provide information of relevant service users / staff until the outbreak is over.

4.2.2 Apart from the said notification form, the facility should also prepare the following information, so that the concerned authorities can obtain relevant information whenever necessary:

- Clinical condition of the patients;
- List of service users and staff (with indication of their area or floor of residence / work);
- Facility floor plan (with indication of room number and bed number);
- Activity schedule of service users;
- Service users' clinic visitation records;
- Staff roster and sick leave record;
- Food menus.

4.3 Disinfection and hygienic management during an outbreak

4.3.1 Cleaning of the environment

- Increase the frequency of environmental cleaning, in particular toilets, kitchen and frequently-touched surfaces such as light switches, door knobs, etc. (see Annex 2);
- If the environment, facilities or equipment are soiled by sputum, vomit, excreta, blood or other similar contaminants, use disposable towels/ absorbent materials for preliminary cleaning; next, disinfect the soiled surface and its vicinity with 1:10 diluted bleach and leave for 30 minutes before rinsing with water and wiping dry;
- Use 70% alcohol to disinfect metal surfaces.

4.3.2 Cleaning and disinfection of bedding and clothing

- If soiled with blood, body fluid or other secretions, immerse in 1:10 diluted bleach for 30 minutes before performing general cleansing procedures.

4.4 Specific recommendations on management of selected communicable diseases (respiratory diseases, gastrointestinal diseases, scabies and food poisoning)

The most common epidemic diseases include respiratory diseases, gastrointestinal diseases, scabies, food poisoning, etc.

4.4.1 Management of respiratory disease outbreaks

- Definition: There is an increased number of service users and/or staff with respiratory symptoms (e.g. cough, sore throat, runny nose, fever, etc.) than at ordinary times;
- In compliance with the infectious diseases reporting mechanism (see Annex 10), complete the Notification Form of Collective Illness related to Infectious Diseases in Social Service Facilities and notify CDC of the Health Bureau and the Social Welfare Bureau;
- Sick staff / service users should consult a doctor as soon as possible;
- If hospital care is not deemed necessary, patients should wear surgical mask in the facility and be attended under isolation as far as possible;
- Enhance health surveillance for other staff members / service users, such as measuring body temperature;
- Maintain good ventilation and enhance environmental cleaning;
- Strengthen personal hygiene, e.g. observe hand hygiene and cough manners, etc.;
- Suspend group activities;
- Sick staff should refrain from work until fully recovered;
- Minimize staff movement. Wherever possible, arrange staff of the same team to take care of the sick service users and provide the staff with appropriate PPE.

4.4.2 Management of gastrointestinal disease outbreaks

- Definition: There is an increased number of service users and/or staff with symptoms of gastrointestinal disease (e.g. vomit, diarrhoea, etc.) than at ordinary times;
- In compliance with the infectious diseases reporting mechanism (see Annex 10), complete the Notification Form of Collective Illness related to Infectious Diseases in Social Service Facilities and notify CDC of the Health Bureau and the Social Welfare Bureau;
- Sick staff / service users should consult a doctor as soon as possible;
- Disinfect articles or places soiled by excreta or vomit with 1:10 diluted bleach;
- Disinfect bedpans and toilets with 1:10 diluted bleach;
- Ensure personal, food and environmental hygiene;
- Save food remnants, food samples and collect stool specimens as instructed for investigation purpose;
- Enhance health surveillance for other staff / service users, such as measuring body temperature;
- Suspend group activities;
- Sick staff should refrain from work until fully recovered;
- Minimize staff movement. Wherever possible, arrange staff of the same team to take care of the sick service users and provide the staff with appropriate PPE.

4.4.3 Management of scabies outbreaks

- In compliance with the infectious diseases reporting mechanism (see Annex 10), complete the Notification Form of Collective Illness related to Infectious Diseases in Social Service Facilities and notify CDC of the Health Bureau and the Social Welfare Bureau;
- Trace the contacts of the infected person, including staff, relatives, visitors, etc.;
- Inspect the skin of service users regularly; seek medical advice promptly in case of doubt;
- Infected staff / service users should consult a doctor as soon as possible;
- Implement contact precautions, isolate the infected persons until treatment has been completed;
- Clothing and bedding of the infected persons should be handled separately and processed with high temperature procedures at 60oC for at least 10 minutes, so as to eliminate mites and their eggs;
- Use anti-scabies medication following doctor's instruction;
- Sick staff should refrain from work until fully recovered.

4.4.4 Management of food poisoning

- Definition: 1) There are two or more people developing similar symptoms after eating common food items, while epidemiological analysis suggests that food is the causative factor. 2) Exceptions: one single case of botulism poisoning, cases linked with chemical toxin or biochemical toxin;
- In compliance with the infectious diseases reporting mechanism (see Annex 10), complete the Notification Form of Collective Illness related to Infectious Diseases in Social Service Facilities and notify CDC of the Health Bureau and the Social Welfare Bureau;
- Prepare food menus of the several days before the outbreak to the Health Bureau for investigation;
- Save food remnants, food samples and collect stool specimens as instructed for investigation;
- Disinfect articles or places soiled by excreta or vomit with 1:10 diluted bleach;
- Disinfect bedpans and toilets with 1:10 diluted bleach;
- Ensure personal, food and environmental hygiene. In particular, pay attention to the sanitation in kitchen and proper functioning of the refrigerator;
- Sick staff should refrain from work until fully recovered.

Role of social service facilities 05

5.1 Appoint hygiene officer

Every service facility should appoint one hygiene officer and one deputy hygiene officer, who are tasked to prepare, coordinate and oversee the prevention of and response to various communicable diseases.

- It is advised that the above posts be filled by an individual with medical, nursing or hygienic knowledge who are familiar with facility operation;
- Responsibilities:
  - Collaborate and oversee the prevention and control of communicable diseases in the facility;
  - Assist the manager in assessing the risk of communicable disease outbreak in the facility, formulate relevant preventive measures through regular consultation with the manager, staff, Social Welfare Bureau and Health Bureau, so as to prevent the spread of communicable diseases in the facility;
  - Disseminate updated information and guidelines on infection control to all staff and service users in the facility;
  - Familiarize all staff with the infection control measures;
  - Assist in arranging infection control training for staff of the facility;
  - Assist in overseeing that the guidelines on prevention of communicable diseases are properly implemented in the service facility, including measures for personal, environmental and food hygiene;
  - Oversee that all medical equipment as well as other utilities are properly disinfected, and that soiled linen and wastes (in particular clinical waste) are properly handled and disposed of;
  - Assist the manager in providing and storing necessary PPE for staff, advise and supervise staff on the proper application of PPE and their after-use disposal;
  - Monitor the health condition of service users and staff, e.g. conduct screening for symptoms of communicable diseases;
  - Assist the manager to report and provide information to the Health Bureau and the Social Welfare Bureau in case there are suspected cases of communicable diseases or other public health incidents;
  - Assist the Health Bureau and the Social Welfare Bureau in conducting investigation in the facility and adopt effective infection control measures to contain the spread of communicable diseases.

5.2 Points to note during an outbreak

- In case of a suspected outbreak of communicable disease, the facility must notify the Health Bureau and the Social Welfare Bureau immediately in accordance with the notification mechanism, and take corresponding countermeasures as advised in these guidelines. Please refer to Chapter IV Response to Communicable Disease Outbreaks for more details;
- To contain the spread of pathogens in the facility, the infected persons should be handled and attended according to the instructions of the doctors, the Health Bureau and the Social Welfare Bureau.

06 Common communicable diseases in social service facilities

- Influenza
- Pulmonary tuberculosis (TB)
- Norwalk-like viruses (Norovirus) infection
- Enterovirus infection
- Chickenpox
- Scarlet fever
- Scabies
- Dengue fever
- Acute infectious conjunctivitis (red-eye syndrome)
- Severe acute respiratory syndrome (SARS)
- Human avian influenza infection
- Middle East respiratory syndrome (MERS)
- Ebola virus disease

Influenza

Influenza, also known as flu, is an acute, highly contagious respiratory disease. It is caused by various types of influenza viral strains. Three types of influenza viruses are recognized as capable of affecting humans: type A, B and C, among which type A is more common. Emergence of new subtypes (antigenic variation) occurs easily, which may cause influenza outbreaks. In Macao, influenza A (H1N1 and H3N2) and influenza B are most commonly seen, and the peak season normally falls on February to March.

Source of infection

Mainly the infected persons.

Mode of transmission

Transmitted through air or droplets; it may also spread through direct or indirect contact with the oral and nasal discharge of the infected person.

Incubation period and infectious period

Incubation period is short, usually 1-3 days.

An infected person remains infectious from 1 day before onset of symptoms to 7 days after illness onset.

Susceptible population

Generally susceptible. The infected will develop certain extent of immunity but there is no cross-immunity among the three types of influenza viruses; meanwhile, influenza viruses mutate from time to time, therefore recurrent infection is common.

Clinical features

Symptoms are relatively mild under general circumstances, which include fever, headache, muscle pain, runny nose, sore throat and cough. Most infected persons can recover spontaneously in 2-7 days and acquire immunity therefrom; however, elderly people, infants, young children and persons with chronic disease are more likely to develop complications like bronchitis and pneumonia.

Treatment

Treatment is usually symptomatic / supportive. The use of appropriate anti-viral medication within 48 hours after illness onset is effective in shortening the duration of symptoms, reducing the risk of complications, as well as lowering hospitalization rates and mortality. Antibiotics are not effective in treating influenza unless complicated with bacterial infection. Most influenza cases can recover spontaneously in 2-7 days.

06 Common communicable diseases in social service facilities

Preventive measures

- Observe environmental hygiene and maintain good indoor ventilation;
- Observe personal hygiene, wash hands frequently, especially when hands are contaminated with discharge from mouth and nose;
- Cover mouth and nose when sneezing and coughing and handle respiratory secretions with care;
- Avoid visiting crowded places with poor ventilation;
- Build up the body immunity by having a balanced diet, sufficient water, regular exercise, adequate rest, avoiding over-fatigue as well as refraining from smoking;
- If developing symptoms like fever and coughing, wear mask and seek early consultation; if hospital care is not required, rest at home as far as possible;
- Receive vaccination annually against influenza: Influenza vaccine is prepared according to the prevailing strains in the region each year, as recommended by the World Health Organization. As the effectiveness of influenza vaccine declines throughout the year, vaccination should be repeated every year.

Differentiation between influenza and common cold

	Influenza	Common Cold
Pathogen	Influenza viruses (A, B and C)	Rhinovirus, coronavirus, parainfluenza virus, respiratory syncytial virus, adenovirus, etc.
Communicability	High	Generally not high
Onset	Sudden	Slow
Fever	High fever is usually present	Uncommon
Headache/ body aches	Common and severe	Uncommon and mild
Stuffy/ runny nose	Rare	Common
Sore throat	Common	Rare
Complications	Many	Very few
Duration	1 week	Normally 2-3 days
Condition	Severe	Generally not severe

Pulmonary Tuberculosis (TB)

Tuberculosis is an infectious disease caused by Mycobacterium tuberculosi. While TB mostly affects the lung, it may sometimes affect other organs such as kidneys, intestinal tracts, brain, reproductive organs, bones, joints, lymph nodes, etc., resulting in extrapulmonary tuberculosis. However, pulmonary tuberculosis accounts for 90% of all TB cases.

Pulmonary tuberculosis

There are two types of pulmonary tuberculosis – contagious and non-contagious, depending on whether the patient has sputum that contains Mycobacterium tuberculosi.

Source of infection

Persons infected with Mycobacterium tuberculosi.

Mode of transmission

Pulmonary tuberculosis is mainly transmitted via bacteria-bearing droplets, which are spread through the air when patients talk loudly, cough or sneeze. People may have Mycobacterium tuberculosi propagate in their lungs after inhaling the bacteria-bearing droplets, resulting in TB infection. A small number of infected persons will progress to TB disease, depending on the amount of bacteria one is exposed to, the virulence of the bacteria, ventilation at the premises as well as the individual's physical status.

Incubation period and infectious period

Symptoms may occur as soon as a few weeks after infection, but they may also be latent for several years afterwards. Chances are that most patients will develop symptoms in the first two years after being exposed to the disease.

Infectious period: Generally, effective anti-biotic treatment can eliminate the infectiousness within a few weeks.

Susceptible population

People of any age and gender may contract pulmonary TB; however, those frequently exposed to patients with contagious TB, people with poor resistance to infection, aged or with weakened immune systems, patients with chronic diseases like diabetes and silicosis, and those on long term steroids are the high risk groups for tuberculosis.

Clinical features

Symptoms of pulmonary TB include cough, cough with sputum, expectoration, haemoptysis, chest pain, fever, night sweats, fatigue, weight loss, etc. Some of the patients may have no apparent symptoms.

Treatment

Suspected cases of TB should seek medical advice as soon as possible. Tuberculosis can be diagnosed through chest X-ray and sputum test. Patients are prescribed multiple drug therapy for at least six months. As long as the patient follow the doctor's instructions and take the medications regularly and uninterruptedly until treatment completes, tuberculosis can be completely cured.

Preventive measures

General precautions

- Arrange for every new recruit and service users to undergo chest X-ray examination;
- Keep windows open to maintain good ventilation;
- Observe good personal and environmental hygiene;
- Build a healthy lifestyle, including having a balanced diet, regular exercise and adequate rest;
- Keep hands clean by washing them properly;
- Wash hands immediately if soiled by respiratory secretions (e.g. after sneezing);
- Cover mouth and nose when sneezing or coughing, and handle respiratory secretions properly;
- Watch staff members and service users for any symptoms that are typical of tuberculosis, especially those who cough persistently for more than two weeks.

Measures to be taken in case of suspected or confirmed cases

- Arrange medical consultation immediately;
- Place the suspected patient in a single-bed room, and assign one and the same staff member to take care of the patient;
- Whenever the staff member taking care of the patient falls ill or feels weakened, he or she should be suspended from duty temporarily;
- Maintain good indoor ventilation;
- Whenever necessary, the caregiver and the patient should wear a mask;
- Reduce arranging for the patients to visit public places or participate in group activities;
- Advise and see that the patient adheres to medication; maintain personal hygiene and handle respiratory secretions and sputum properly.

Norwalk-like Virus (Norovirus) Infection

Norwalk-like virus (norovirus) infection is caused by a group of norwalk-like viruses (also known as noroviruses or small round structured viruses). These viruses may lead to food poisoning or gastroenteritis. They are the main causative agents of non-bacterial gastroenteritis in many countries, and are easily spread within nursing homes and schools. Besides, this disease can affect people of all age group and is more common in winter.

Source of infection

Humans are the only known hosts.

Mode of transmission

- Eating or drinking food or water contaminated with the viruses;
- Contact with vomitus or faeces of the infected person;
- Contact with contaminated objects;
- Air-borne transmission.

Incubation period and infectious period

Incubation period normally ranges from 24 to 48 hours.
It is infectious during onset of disease until two days after symptoms disappear.

Susceptible population

Generally susceptible.

Clinical features

The disease is characterized by nausea, vomiting, diarrhoea, abdominal pain, low-grade fever, malaise, etc. The symptoms are self-limiting and usually last for 1-3 days. Complications are rare.

Treatment

There is no effective antiviral drug for the disease. Antibiotics are ineffective in its treatment, and therefore treatment should be symptomatic and supportive. The patient should have adequate rest and sleep, plenty of water, and a light diet.

Preventive measures

There is no vaccine against Norovirus infection as of now. Preventive measures include: maintaining good indoor ventilation, observing good personal, food and environmental hygiene. (See Chapter II General Hygiene Advice for Social Service Facilities).

Enterovirus Infection

Enteroviruses are a group of viruses associated with Coxsackieviruses, ECHO-viruses and Enterovirus 71 (EV71), etc. Hand-foot-mouth disease and herpangina are some of the commonplace symptoms of the patients infected with enteroviruses. In general the symptoms run for about a week. As the blisters, subitum (roseola), ulcer and the temperature subside, the infection heals spontaneously. Complications are not common; it is only in rare cases that the disease is followed by complications of central nervous system, e.g. viral meningitis and encephalitis, and results in death. Enterovirus infection normally peaks during summer and winter.

Hand-foot-mouth disease (HFMD)

Hand-foot-mouth disease is one of the symptoms of enterovirus infection. Papules, topped with vesicles may be widespread on arms, legs and buttocks; this may progress to oral ulcers in the front/back of the mouth. These papules are mostly non-itchy, and settle leaving no obvious scars.

Herpangina

Herpangina is another symptom of enterovirus infection. It is characterized by blisters at the back of the mouth, which then often rupture and become ulcers; in severe cases, ulcers may develop in the front and back of the mouth. When treating oral ulcers, care must be taken to differentiate this kind of ulcers from others.

Source of infection

The infected persons are the only source of infection.

Mode of transmission

Enteroviruses can be spread through typical faecal-oral or oral-oral route, or via droplets and contact with contaminated objects, etc.

Incubation period and infectious period

The incubation period lasts for about 3-7 days.
Infectious period: The viruses, which live in the throat and faeces of an infected person, become contagious a few days before onset of the disease; the enteric viruses can continue to be excreted from the body for several weeks or longer.

Susceptible population

Generally susceptible while children are more vulnerable.

Clinical features

- Initial symptoms are similar to those of cold, fever can persist for 4-5 days;
- Small blisters or painless skin rashes develop mainly on the mucous membrane of the mouth, tongue, palms, or between fingers and toes, and usually subside within 7-10 days;
- Appetite may be affected because of the painful ulcers.

Treatment

There is no special treatment. Treatment is main supportive and symptomatic.

Preventive measures

There is no vaccine against enterovirus infection as of now.

Maintain good personal, environmental and food hygiene

- Service users and staff should observe good personal hygiene and wash hands frequently;
- Children should be taught to perform hand hygiene properly, wash hands thoroughly with liquid soap after using toilets and before meals;
- Windows should be kept open wherever possible, to maintain a clean and fresh environment as well as good indoor ventilation;
- Always keep the toilets clean and well ventilated;
- Observe and practise the basic principles of food hygiene, particularly that food must be thoroughly cooked before consumption; culinary workers or staff with respiratory and/or gastrointestinal symptoms (e.g. cough, fever, abdominal pain, diarrhoea) should seek early medical treatment and rest at home;
- Avoid sharing of food, nipples, feeding bottles, cutleries and towels between children;
- Floors, walls below one-metre level, tables, chairs and toys should be cleaned regularly (at least once daily) with 1:100 diluted bleach.

Caregivers should take precautions when handling children's, especially sick children's excreta (e.g. when changing diapers) by wearing gloves and mask, following the standardized cleaning and disinfection procedures (see Annex 2), washing hands thoroughly afterwards, and washing and disinfecting soiled clothing with 1:100 diluted bleach.

Management on the part of institution

- When children develop the aforementioned symptoms, especially those suspected of complications, such as unusual fatigue, sleepiness, restlessness, altered consciousness, jerks or continuous vomiting, the institution should:
  - Immediately arrange for medical consultation in case complications should occur (Non-residential childcare facilities should immediately notify the parents of the sick child);
  - In view that enteroviruses are highly contagious, arrange the sick child to be placed in a single room and suspend from school until all ulcers and vesicular lesions have dried and crusted.
- Reduce group activities to avoid interaction between the sick and other children;
- Intensify disinfection work of the environment, equipment and toys in the facility;
- If the number of children / staff showing typical symptoms has increased, the facility should promptly notify CDC of Health Bureau and the Social Welfare Bureau, provide relevant information and fax the completed Notification Form of Collective Illness related to Infectious Diseases in Childcare Facilities, so as to facilitate investigation by the Health Bureau and the Social Welfare Bureau and enable control measures to be implemented in a timely manner.

Chickenpox

Chickenpox is a common acute infectious disease in children. It is caused by the varicella-zoster virus and is highly contagious, especially in the early stage of rash eruption. While lifelong immunity can be developed after infection, the virus may be latent in the body and reactivate many years later, thus resulting in herpes zoster (shingles). Chickenpox is predominantly found in children aged from 5 to 10; it can occur throughout the year, in particular in winter and spring.

Source of infection

Infected persons are the only source of infection.

Mode of transmission

- Through direct person-to-person contact;
- Through droplets of the infected person or airborne spread of respiratory secretions;
- Through indirect contact with objects soiled by a patient's wound discharge.

Incubation period and infectious period

The incubation period is about 13-20 days.
Infectious period: Five days (usually1-2 days) before rash appears until all vesicles have dried up and crusted (usually 5 days after rash eruption).

Susceptible population

Generally susceptible; mostly occur in childhood (5-10 years old). Lifelong immunity is developed after recovery.

Clinical features

- The patient may have a mild fever at the beginning;
- Rashes: Rashes appear in the first few hours as maculopapules, which later turn into vesicles and finally leave granular scabs. Rashes usually begin on the scalp and trunk of the infected, and then spread to the face and limbs. While they are most common on the trunk, they can also develop on unexposed body parts, such as scalp, underarms, conjunctiva, oral cavity and upper respiratory track. As rashes occur in batches over a course of five days, different stages of lesions can be seen simultaneously;
- Rashes and blisters are itchy;
- Vesicles dry up and form scabs in around 3 days;
- The patient usually recovers in 2-4 weeks.

Complications

The symptoms of chickenpox are generally mild and self-limiting. However, scratching may cause wounds which in turn lead to infection and permanent scarring. People with weakened immunity are more likely to develop complications such as skin infection, scarlet fever, pneumonia and encephalitis. Symptoms may be more severe and even fatal for newborn babies. Infection in early pregnancy may result in congenital malformation of the foetus.

Treatment and care

- Treatment is mainly symptomatic. Patients who develop a fever should drink plenty of water, have more rest and a nutritionally adequate diet, keep good indoor ventilation, wear light and loose clothes, and take fever-lowering medicine prescribed by doctor when necessary;
- Wear clean cotton gloves for the infected children during sleep to prevent scratching of the vesicles which may cause infection;
- Staff of the facility should closely monitor the service user's condition. If he/she persistently runs a fever, refuses to eat, vomits, looks extremely tired or sluggish, immediate medical attention should be sought;
- Pay special attention during the infectious period as to whether the varicella-zoster virus has affected other staff members / service users;
- The infected should avoid contact with pregnant women and persons with weakened immunity;
- If a service user is found to be infected, he/she should be isolated and receive medical treatment as soon as possible;
- Infected staff should also consult a doctor immediately and suspend from work if so advised by the doctor.

Preventive measures

- Receive chickenpox vaccine. About 90% of the vaccinated will acquire immunity;
- Maintain good personal and environmental hygiene;
- Perform hand hygiene properly (see Annex 6 for details);
- Adopt control measures for high-risk contacts, including injecting specific immunoglobulin within 72-96 hours.

Scarlet Fever

Scarlet fever is an acute respiratory disease caused by group A β-hemolytic Streptococci (streptococci pyogenes). It can occur all year-round, with the peak season being in winter and spring.

Source of infection

Mainly patients and carriers of scarlet fever.

Mode of transmission

It is mostly transmitted through contact with droplets and secretions of the mouth, throat and nose of an infected person. Once infected, the patients are highly contagious before and during onset.

Incubation period and infectious period

The incubation period generally lasts for 1-3 days.

Scarlet fever is most infectious from one day prior to onset through the entire eruptive stage. Usually, the infectious period is 10-21 days if untreated; if antibiotic treatment is delivered, the infectious period can be reduced to 24 hours.

Susceptible population

Generally susceptible, most commonly found in children aged 5-18. Besides, since there are 5 rash toxin serotypes and there is no cross-immunity between different types, it is possible to catch scarlet fever more than once.

Clinical features

Scarlet fever is characterized by fever, strawberry tongue, angina, a diffused red rash all over the body, followed by flaking and peeling of the skin after the rash fades. The rash usually appears as small red dots that turn white under pressure and feels rough like sandpaper; it is most common on the neck, chest, armpits, elbows, groins and the inner thighs. Typically, the rash does not appear on the face, but the cheeks will become flushed while the area around the mouth stays pale. In severe cases, the infected person often develops a high fever, nausea and vomiting. During convalescence, skin peeling is present on the patient's fingers, palms, tips of toes and soles of feet; in rare cases, skin peeling can spread to the torso and the four limbs. If not properly treated, scarlet fever can cause complications such as middle ear infection, rheumatic fever, renal diseases, pneumonia, lymphadenitis and arthritis.

Treatment

Confirmed patients should complete the entire antibiotic treatment as prescribed by doctor.

Preventive measures

Personal hygiene

- Wash hands frequently to keep hands clean; in particular, wash hands or rub hands with alcohol-based handrub before touching the eyes, nose or mouth;
- Cover mouth and nose with tissue paper when sneezing or coughing, and dispose of used tissue paper properly;
- Never share towels with others;
- Wear gloves when handling objects or places soiled with secretions or excreta;
- Have regular exercise, adequate rest and a balanced diet; do not smoke or go to crowded places;
- Avoid close contact with patients with scarlet fever;
- In case of fever and cough, wear a mask and consult a doctor as soon as possible;
- If you develop symptoms of scarlet fever, rest at home and refrain from school or work.

Environmental hygiene

- Keep the indoor environment clean, dry and well-ventilated;
- Clean and disinfect used toys, furniture, floors and frequently touched places at least once daily;
- Objects or places dirtied by secretions or excreta should be disinfected properly and immediately;
- Make sure that liquid soap and disposable hand towel or hand dryer are available in the toilet.

Scabies

Scabies is a skin disease caused by a mite called Sarcoptes scabiei, which is a parasite that resides in the surface of human skin. As tiny as a pinpoint, Sarcoptes scabiei is scarcely visible to the naked eye.

Source of infection

Infested persons

Mode of transmission

Scabies is usually transmitted through direct contact with an infested person. Clothing and bedding of the infected may also carry the mites and spread the disease. Transmission within household and residential facilities is very common. In addition, domestic animals like cats and dogs may also carry the mites, and pass to the owner via contacts.

Incubation period and infectious period

For people without previous exposure to the disease, incubation period is around 2-6 weeks. People who have been previously infected may develop symptoms earlier, usually within 1-4 days after re-exposure, and the symptoms may be more severe than the previous infestation.

The infested person remains infectious until the mites/eggs are eliminated, usually requiring one or sometimes two treatments.

Susceptible population

People of all age group may be infested, but people with weakened immunity, such as the elderly, are particularly susceptible.

Clinical features

Scabies features intense itchiness which is more severe at night or after a hot bath. The common affected areas are finger webs and skin folds of wrists, armpits, buttocks, groins, elbows, nipples and lower abdomen. The face and scalp are usually spared, except in young children. Thread-like lesions or rashes may be seen on the skin.

Treatment and care

If scabies occurs in a social service facility:

- Consult a doctor immediately. Medicated lotion and medicines will be prescribed to apply on the body, which can kill the mites and curb the itchiness. Besides, family members, caregivers and close contacts of the patient should also follow the doctor's instruction and receive necessary treatment to prevent the spread of the disease;
- Bedding and clothing of the patient should be boiled in 60°C hot water for not less than 10 minutes and ironed in order to kill the mites and eggs. Articles, such as shoes and quilts, that are difficult to wash can be packed in plastic bags and sealed up for at least 14 days before washing;
- Wear gloves when handling clothing of the patient; wash hands thoroughly when finished. Do not touch other objects until hand hygiene has been performed;
- Isolate the patient, reduce close contact with the infected, and avoid sharing of clothing and bedding;
- Scabies is highly infectious while the infected person may develop symptoms one month after the primary infection. Therefore, all persons, not the patients alone, who have shared beds, bedclothes or clothes should be given medication with or without symptoms, to avoid spreading of the infestation and hence eliminate the disease;
- Whenever it is necessary to care for or touch the patient, wear appropriate personal protection equipment such as gloves and protective gown;
- Wash hands thoroughly before and after each contact with the infected.

Preventive measures

- Observe good personal hygiene, bath or shower frequently and change into clean clothing;
- Avoid sharing clothing, linen and bedding with others (including in nurseries);
- Household contacts and close personal contacts of the infected person should be screened for scabies and treated accordingly;
- Staff of the facility should have the knowledge about the symptoms of scabies infestation and the ability to identify the disease and isolate the infected from others;
- Perform skin inspection for service users regularly for early identification of infestation.

Dengue Fever

Dengue fever is an acute viral communicable disease which is transmitted through bites of infected Aedes aegyptis and Aedes albopictus. The latter, also known as Asian tiger mosquito, is the vector of dengue fever in Macao. This disease is epidemic in subtropical and rainforest regions, people should therefore remain vigilant against dengue fever when travelling to regions including Southeast Asia, Latin America and South Africa. Dengue fever is perennial in tropical regions, whereas in subtropical regions, it is prevalent in summer, after rain and typhoons, during which the temperature and humidity is most suitable for mosquito breeding.

The dengue viruses encompass four different serotypes: types I, II, III and IV.

Source of infection

Infected persons and people with silent infection.

Mode of transmission

Female Aedes albopictus is a dengue vector. An Aedes mosquito preliminarily acquires the virus while feeding on the blood of a patient / symptomless carrier of dengue fever. The mosquito then carries dengue viruses in its body, and transmits the disease to others through its bites.

The specific mosquito usually stings humans two hours after sunrise and few hours before sunset.

Breeding characteristics of Aedes albopictus: The mosquitoes breed indoors and outdoors in shallow waters of pots, bottles, cans and tubs, in stagnant water of tree holes, bamboo joints, caverns and in the abundance of leaf-axils. In addition, accumulation of stagnant water in disused tyres, all kinds of discarded water containers at construction sites and stagnant water on floors can also serve as breeding sites of the Aedes.

Incubation period and infectious period

Incubation period: ranges from 3 to 14 days, 4 to7 days on average.

Infectious period: from the day before the onset of fever until the fever subsides, generally 3 to 5 days.

Susceptible population

Everybody can get infected with dengue through the bites of infective Aedes mosquitoes. Infection with any one of the dengue serotypes induces immunity to only that serotype; re-infection with a dengue virus of different serotype may increase the risk for dengue hemorrhagic fever (DHF) during the subsequent infection.

Clinical features

Common types of dengue fever

- Classic dengue fever: characterized by milder symptoms including fever, headache, pain behind the eyes, muscle and joint pains as well as rash. Diagnosis of dengue fever is confirmed by a blood test;
- Dengue hemorrhagic fever (DHF): initial symptoms are similar to those of classic dengue fever; however, the patient's condition may suddenly deteriorate after high fever, and may be fatal.

Clinical presentations of classic dengue fever

This disease is manifested by a sudden onset of fever/chill, with body temperature up to 39-40°C, coupled with severe headache, pain behind the eyes, muscle and joint pains and fatigue. Gastrointestinal symptoms like vomiting, abdominal pain and diarrhea may also develop. 3-6 days later, it will be followed by rash which appears as red macules or hemorrhagic rash firstly on the body, and gradually spreads to the limbs and the head. Rashes are mostly itchy, and subside within 3-5 days.

Treatment

- Take rest and replenish adequate fluid;
- Take pain-relief and antipyretic medication prescribed by the doctor; do not attempt to self-medicate as this may aggravate the illness;
- Avoid medicines containing acetylsalicylic acid, namely aspirin;
- Dengue fever is generally self-limiting and takes around one week to subside without residual defect;
- If your condition deteriorates, or you feel ill or develop fever, seek medical advice promptly to avoid delay in the treatment.

Preventive measures

Eradication of mosquitoes: Elimination of adult mosquitoes and their larvae

The essential ways to prevent dengue fever is to maintain environmental hygiene and remove stagnant water (the breeding source), where even accumulation of clean water can serve as breeding sites of mosquitoes. The basic hygienic measures include:

- Clear up drainage channels: Keep all drains free from blockage to avoid the build up of stagnant water;
- Level all detective ground surfaces: waters may be accumulated in uneven floors and provide breeding place for aedes mosquitoes;
- Remove stagnant water in containers: Flower pots, saucers for potted plants, vases and bottles cause accumulation of water;
- Prune brushwood around the housing estate: Mosquitoes are likely to reproduce in dark and damp brushwood;
- Cover sumps and water storage tanks: Sumps and tanks should be tightly covered to prevent the breed of mosquitoes;
- Clear debris in basins and ditches: Basins and ditches should be kept clean all the time.

Personal protective measures: These include protection for patients and non-patients; patient with dengue fever should avoid mosquito bites to prevent the spread of the disease, whereas non-patients should avoid being infected. Personal protective measures include:

- Install mosquito screen for doors and windows to keep out mosquitoes;
- Wear light-coloured long-sleeved shirts and long trousers while going outdoors/ traveling;
- Apply effective mosquito repellent containing DEET to exposed parts of the body and clothes;
- Avoid going out at prime periods of mosquitoes; otherwise, take necessary precautions.

Acute Infectious Conjunctivitis (Red-eye Syndrome)

Conjunctivitis is an inflammation of the conjunctiva, the protective membrane that lines the inner eyelids and covers the outer surface of the eyeballs. Conjunctivitis takes various forms, and the most common form is acute infectious conjunctivitis (red-eye syndrome) which is mostly caused by bacteria and viruses.

Source of infection

Infected persons.

Mode of transmission

Transmission primarily occurs through direct contact. Conjunctivitis can be transmitted via direct contact with discharge from the eyes of infected people, or indirectly through contaminated fingers, clothings, and use of contaminated articles or toys, such as towels, handkerchiefs, basins, eye makeup, topical eye medications. In addition, conjunctivitis can be contracted when swimming in contaminated water.

Incubation period and infectious period

The incubation period is usually 1 to 3 days for bacterial conjunctivitis; 1 to 12 days for viral conjunctivitis.

The infectious period varies for different bacteria or viruses.

Susceptible population

General susceptible, but children below 5 years of age are most frequently affected.

Clinical features

Clinically, bacterial and viral conjunctivitis are very similar. The eyes may present with symptoms together or symptoms may start in one eye first.

- Early symptoms: itchiness, foreign body sensation, conjunctival congestion, increased discharge from eye;
- Late symptoms: sensitivity to light, tearing, swelling and redness of the eyes, severe conjunctival edema or haemorrhage.

When discharge from eye and conjunctival congestion subsided, the infection has cleared up.

Treatment and care

The disease is self-limiting, and recovery usually occurs in 1 to 2 weeks' time if it is properly treated.

- Take adequate rest;
- Follow doctor's advice in administering medication and topical eyedrops/ eye ointments ;
- Avoid strong light which may be uncomfortable to the eyes;
- Prevent spread of infection:
  - Do not share toilet articles with family members, personal articles should be placed separately;
  - Towels and toilet articles of infected individuals, or articles contaminated with discharge from eye should be sterilized;
  - Observe personal hygiene, always keep hands clean;
  - The infected should avoid using public facilities, such as public swimming pool, to prevent spread of infection.

Preventive measures

- Maintain good personal hygiene, particularly thorough handwashing before and after contact with eyes;
- Avoid hand-eye contact;
- Do not share towels and toilet articles with others;
- Never share eye medicine, eye makeup and other items that may come into contact with the eyes.

Severe Acute Respiratory Syndrome (SARS)

Severe acute respiratory syndrome (SARS) is an acute respiratory infectious disease caused by the coronavirus named SARS-coronavirus (SARS-CoV).

Source of infection

Patients

Mode of transmission

SARS is predominantly transmitted via respiratory droplets produced when an infected person coughs or sneezes. The virus can also spread by contact of secretion, excretion or body fluid of the infected.

Incubation period and infectious period

Incubation period ranges from 2 to 10 days, 4 to 6 days on average, and can last up to 14 days.

Infectious period: Not infectious during incubation period, remains low during the prodrome but becomes very high during the progressing period, and vanishes beyond 10 days of fever resolution.

Susceptible population

Susceptibility is general. No gender difference. Most patients are adults aged 25 -70 years. Healthcare workers, who have infectivity rate as high as 60% without proper protection, are at the highest risk. People living with the patient is the next group at risk, with an estimated secondary infection rate 2-4%.

Clinical features

- Prodrome (1st week): with acute fever (>38oC); may associated with malaise, myalgia, headache, chills and rigors. Almost every patient develops fever. Some individuals have no obvious symptoms at the early stage; stuffed nose, sneezing and running nose are unlikely;
- Progressing phase (2nd week): begins with the onset of a dry, non-production cough, shortness of breath, diarrhea, dyspnea or hypoxemia. In 10-20% of cases, the respiratory illness is severe enough to require mechanical ventilation.

Treatment and prognosis

Treatment is largely symptomatic, supportive and complication-oriented. Patients are treated in combination with anti-viral agents, steroid and broad-spectrum antibiotics.

Most patients may be discharged from hospital after 2-3 weeks, while severe cases take 2-3 months for recovery. Condition is usually milder in children, and more serious in chronic disease patients over 40 years old. The overall fatality rate is estimated to be 11%. The fatality rate is less than 1% in age group of 24 years old or below, 6% in the 25 to 44 year-old group, 15% in the 45 to 64 year-old group, and over 50% in age group of 65 years old or above.

Preventive measures

- Observe personal hygiene: wash hands with liquid soap before touching eyes, mouth and nose, before handling food or eating, after handling objects soiled by faeces, respiratory or other body secretions, and after going to toilet; avoid using public towel; cover the mouth and nose with tissue paper when sneezing and coughing and dispose of soiled tissue paper properly;
- Main good environment hygiene: keep environment clean, always disinfect easily contaminated surfaces such as handrails, switches and door knobs; discard food residues and rubbish properly to prevent pest infestation; ensure good indoor ventilation, clean air-conditioners frequently;
- Take care of patients carefully: wear mask when taking care of patients; soak objects used by patients or contaminated by patients' spit, vomitus, excretions into diluted bleach solution for 30 minutes before washing them with ordinary methods, wear gloves when handling the said contaminants;
- Avoid visiting source infection: unless necessary, avoid visiting hospitals or crowded places with poor ventilation; avoid contact with animals which are possibly contagious;
- Strengthening immunity: balanced diet, sufficient water, regular exercise, adequate rest, avoid too much stress and smoking to intensify body resistance;
- Avoid spreading of diseases: if developing fever, cough or any respiratory symptoms, wear a mask and seek early medical advice; if hospitalization is not necessary, keep staying at home if possible.

06 Common communicable diseases in social service facilities

Human Infection with Avian Influenza

Avian influenza virus (e.g. H5N1, H7N9, H9N2) is a type of influenza A viruses. In the past, avian flu infection was only found in poultry and birds, such as chickens or ducks, but the first case of human infection occurred in Hong Kong in 1997. Outbreaks of avian influenza in poultry have been reported in some countries from time to time, and some cases of human infection have occasionally been reported.

Source of infection

Birds and poultry carrying the virus. At present, live poultry has been confirmed as the primary source of infection, but other possible animal or environmental sources of infection cannot be excluded.

Mode of transmission

Avian influenza is transmitted through contact with infected birds and poultry or their droppings. Human-to-human transmission is inefficient.

Incubation period and infectious period

Around 7 - 10 days depending on the specific subtypes of avian influenza viruses.

Infectious period: available evidence is insufficient to confirm the infectious period; like seasonal influenza, it is estimated to be 1 day before and a week after its onset.

Susceptible population

People in close contact with poultry or other animals are more susceptible to contracting avian influenza virus. The elderly, children and people with chronic illness have a higher risk of developing complications such as bronchitis and pneumonia.

Clinical features

Symptoms of avian influenza in humans are similar to those of influenza infection. However, infection of avian influenza viruses, such as H5N1, is more likely to result in high-grade fever, pneumonia, respiratory failure, multi-organ failure and even death.

Treatment

Treatments are mainly supportive. Take medication according to the doctor's prescription; unless there is bacterial infections, antibiotics should not be used. Patients should get adequate rest, drink plenty of water, observe personal hygiene and wash hands frequently.

Preventive measures

Members of the public, food handlers, handlers of poultry and medical workers should adopt the following preventive measures:

Avoid contact with poultry and birds

- Avoid direct contact with poultry or wild birds (chickens, geese, ducks, birds, etc.) whenever possible;
- During travel, do not visit market, farms or zoos and other places with live poultry and wild birds;
- If birds are kept in institute, do not release them; the birds should be kept in places where they have no contact with wild birds. Avoid close contact with birds, wash hands as soon as possible with water and liquid soap after touching or handling birds and their droppings;
- Avoid as much as possible direct contact with poultry, their secretions or droppings; if it is unavoidable, wear a mask and gloves when handling; wash hands with water and liquid soap as soon as possible after the contact and removal of gloves or mask;
- Wash hands immediately with water and liquid soap if contaminated by respiratory secretions or droppings of poultry or birds.

Food hygiene

- Do not consume undercooked poultry meat, internal organs and blood products; food should be heated to a core temperature of at least 75 oC to kill any germs that may be present in the food;
- Do not consume eggs that have not been thoroughly cooked, or add raw or undercooked egg into the cooked food;
- Avoid putting the raw and cooked food together;
- The utensils (including table, chopping board, knife and cooking utensils) used for food preparation should be cleansed properly before used for another kind of food preparation.

Personal hygiene

- Observe good personal hygiene, wash hands frequently, especially after going to toilet, before cooking or preparing any kind of food;
- Cover the mouth and nose when coughing or sneezing. Dispose of nasal and mouth discharge properly, and then wash hands thoroughly;
- Wear a mask and seek medical advice promptly if developing fever or respiratory symptoms, and inform the doctor of your travel history or contact history of live birds or poultry. Stay at home and do not go to work if advised by doctor.

Remarks: For affected areas, please refer to List of affected areas with major infectious diseases in the website of the Health Bureau

Middle East Respiratory Syndrome (MERS)

Middle East Respiratory Syndrome is caused by a new coronavirus which the World Health Organisation has named Middle East Respiratory Syndrome Coronavirus (also known as MERS-CoV). This virus was first isolated from the human body in 2012. This virus and the coronavirus which caused severe acute respiratory syndrome (SARS) in 2003 belong to the same family.

At present, most of the outbreaks have arisen in the Middle East; cases have also been reported in Europe, America and Asia, of which are directly or indirectly in connection with the Middle East countries.

According to the current data, one-third of reported patients with MERS have died, representing a high mortality rate.

Source of infection

- Animals, such as dromedaries, in the Middle East countries are likely to be the major host of the virus;
- Human infected with the virus (usually contagious after the disease onset).

Mode of transmission

The disease can be transmitted through contact of secretion or excretion of an infected animal, like dromedary, or via the consumption of unprocessed meat, milk or urine. Human-to-human transmission mainly appears in direct or indirect contact (via articles or hands) of droplets produced by an infected person during coughing, sneezing or speaking; the virus can be transmitted between family members, or between patients, visitors and medical personnel in a medical setting.

Incubation period and infectious period

Incubation period is about 2 to 14 days.

Susceptible population

Generally susceptible; patients with chronic diseases and seniors with immune deficiencies are more likely to develop serious complications or result in death.

Clinical features

Early symptoms of MERS-CoV include fever, generalized muscle pain, chills, coughing and other respiratory symptoms, and the condition of patients may deteriorate rapidly; in severe cases, patients may develop pneumonia or even death. In people with immune deficiencies, including chronic disease patients and the seniors, the disease may have atypical presentation including diarrhoea or renal failure.

Treatment

There is currently no specific treatment for the disease. Treatment is supportive.

Preventive measures

In order to prevent infection of MERS-Cov, social residential facilities are recommended to adopt the following measures:

Coordination and management

- Pay attention to the epidemic information promulgated by the MSAR Government and coordinate with the preventive measures recommended;
- Promulgate and update the latest information about disease prevention for staff, service users and visitors in a timely manner;
- Pay attention to the health condition of staff and service users. If they develop symptoms of illness including fever and cough, advise the staff/ service user to consult doctor promptly, and let the sick stay home for adequate rest; meanwhile, infection control measures should be implemented in the institution, infected service users should be temporarily quarantined;
- If visitors present with fever and respiratory symptoms, the visit should be suspended. The facility should advise the visitors to wear mask and seek medical attention.

Personal hygiene

- Wash hands properly to keep hands clean, or use alcohol-based handrub, especially before touching the eyes, nose and mouth;
- Cover the mouth and nose when coughing or sneezing. Dispose of nasal and mouth discharge properly, and then wash hands thoroughly;
- Do not share towels with others;
- Wear gloves before handling objects or areas contaminated by secretions or excretions;
- Exercise regularly, maintain adequate rest and a balanced diet; avoid smoking and crowded places;
- Avoid close contact with patients with fever or symptoms of respiratory infection;
- If developing symptoms such as fever or cough, put on a mask and consult a doctor immediately. Let the doctor know if you have travelled to areas affected* by MERS-Cov before disease onset;
- If developing symptoms like fever, rest at home and do not go to work or school.

Environmental hygiene

- Keep indoor area tidy, clean and ventilated;
- Keep air conditioners well-maintained and wash the dust filters frequently;
- Clean and disinfect toys, furniture, floor and frequently touched surfaces at least once daily;
- Wipe and disinfect objects or areas contaminated by secretions or excretions properly and immediately: Use absorbent materials to clean up surfaces contaminated by vomitus or excreta preliminary, and then disinfect the contaminated surfaces and surrounding areas with 1:10 diluted household bleach. Leave for 30 minutes, then rinse with water and wipe dry;

- Provide toilets with liquid soap and disposable tissues or hand dryer;
- Ensure disposable paper towel and alcohol-based hand sanitizer are provided in public reception areas;
- Always keep drains free from blockage and leakage. Each drain pipe is fitted with a trap, pour about half a litre of water into each drain outlet at least once a week so as to maintain the water column in the pipe to prevent the spread of micro-organisms. Then, pour a teaspoon of 1:100 diluted household bleach solution into the drain outlet. Finally, pour water into the drain outlet 5 minutes later.

Arrangements for infected staff and service users

- Pay attention to the health condition of employees and service users. If they develop symptoms of illness including fever and cough, advise the staff/service user to consult doctor promptly;
- Infected service users should be quarantined as soon as possible;
- Appropriate personal protective equipment should be provided for staff to take care of the service users;
- Infected staff should suspend work and rest at home until fully recovered;
- Infection control measures should be implemented in facilities;
- Step up monitoring of the health condition of service users and staff by, e.g. measuring their body temperature;
- All unnecessary group activities or visits should be suspended;
- If a large number of staff or service users become sick or when there is a sudden increase of absentees, notify the Centre for Disease Control and Prevention of the Health Bureau and the Social Welfare Bureau.

Precautionary measures to be adopted when travelling to affected areas:

- Observe personal hygiene;
- Avoid close contact with people with respiratory symptoms;
- Avoid visit to hospitals or contact with patients;
- Avoid going to farms or contact with animals, especially camels;
- Avoid consuming unprocessed food and beverages (such as camel milk);
- Have surgical mask handy and put on when necessary;
- If developing fever, cough or other symptoms during a trip or returning to Macao, promptly seek medical attention and inform the doctor of your travel history.

Remarks: For affected areas, please refer to List of affected areas with major infectious diseases in the website of the Health Bureau

Ebola Virus Disease

The Ebola virus disease (EVD; formerly known as Ebola haemorrhagic fever) is caused by infection with Ebola virus which belongs to the family called Filoviridae. EVD is a severe acute viral illness which has a case fatality rate of 50-90%.

Ebola was confirmed for the first time in 1976 in two simultaneous outbreaks in Nzara of Sudan and Yambuku of the Democratic Republic of Congo. Ebola virus is transmitted to people from wild animals and spreads in the human population through human-to-human transmission. EVD outbreaks occur primarily in remote villages in Central and West Africa, near tropical rainforests.

Source of infection

Patients

Infected animals: Some fruit bats are considered to be the natural host of the Ebola virus. Chimpanzees, gorillas, monkeys, forest antelope and porcupines may also carry the virus.

Mode of transmission

Ebola can be transmitted through direct contact (through broken skin or mucous membranes) with the blood, secretions, organs or other bodily fluids of infected animals or people, and indirect contact with environments contaminated with such fluids.

Healthcare workers in affected countries have frequently been infected through close contact with patients suffering from EVD when infection control measures are not strictly practised.

Incubation period and infectious period

Incubation period ranges from 2 to 21 days, and usually lasts for 8 to 10 days.

Infectious period: People are not infectious during the incubation period, the risk of infection peaks after disease onset and until fever resolution; semen can be contagious for up to 6 weeks after onset of symptoms.

Susceptible population

Generally susceptible

Clinical features

EVD is often characterized by the sudden onset of fever, intense weakness, muscle pain, headache and sore throat. This is followed by vomiting, diarrhoea, rash, impaired kidney and liver function, and in severe cases, both internal and external bleeding, or even death.

Treatment

There is no specific treatment available for EVD; treatment for patients is mainly supportive. As the disease is a highly contagious illness with high mortality rate, patients must be managed in isolation facilities to prevent the spread of the infection. Severely ill patients require intensive supportive care.

Preventive measures

- **No vaccine for EVD is available.**
- **Residents planning to travel to EVD-affected areas are advised to take careful consideration and preparation before departure. It is recommended to cancel or reschedule non-essential travel to affected areas.**
- **In case travelling to affected areas is unavoidable, travellers are advised to observe the followings:**
  - Maintain good personal and environmental hygiene; always practice proper hand hygiene;
  - Avoid contact with animals or their carcasses;
  - Do not consume undercooked meat; wash and peel vegetables and fruits before consumption;
  - Avoid going to hospitals or visiting patients;
  - Avoid contact with blood or bodily fluids of suspected patients, including items which may have come in contact with an infected person's blood or bodily fluids;
  - Wash hands immediately after accidental exposure to blood or personal item of infected person; seek medical advice whenever necessary.
- **People who develop symptoms of fever, diarrhoea, vomiting, rash or bleeding up to 21 days after their return from affected areas should seek medical attention as soon as possible and inform doctor of their travel history.**

Remarks: For affected areas, please refer to List of affected areas with major infectious diseases in the website of the Health Bureau

Annex 1 Preventive isolation (suspension of school/work)

In order to prevent the spread of communicable diseases among educational institutions, Decree-Law no. 1/97/M was enacted by the Macao Government in January 1997 prescribing that students, academic staff and non-teaching staff infected with the diseases listed below, holding a "Preventive Isolation Certificate (Suspension of school/work)" issued by the health supervisor, should refrain from school/work and activities held by education institutions:

- Diphtheria;
- Scabies;
- Scarlet fever and other respiratory tract infections caused by group A Streptococcus;
- Typhoid/paratyphoid fever;
- Hepatitis A;
- Hepatitis B;
- Impetigo;
- Meningococcal infections (meningitis and sepsis);
- Mumps;
- Lice;
- Poliomyelitis;
- Rubella;
- Measles;
- Tinea;
- Whooping cough;
- Tuberculosis;
- Chickenpox.

Besides, in accordance with article 5 of Decree-Law no. 1/97/M, in 2001, enteroviral infection (including hand, foot, and mouth disease) has been enlisted as one of the infectious diseases that prevention isolation (Suspension of school/work) must be initiated.

Execution of preventive isolation (Suspension of school/work)

Medical practitioners or health entities should notify the health authorities immediately whenever any students, teaching or non-teaching staff in educational institutions is suspected/confirmed of any of the aforementioned diseases. A Preventive Isolation Certificate (Suspension of school/work) will then be issued by the health supervisor and faxed to the patient's institution, where suspension of school/work should be implemented accordingly.

Termination of preventive isolation (Suspension of school/work)

People holding a Preventive Isolation Certificate (Suspension of school/work) should notify the health supervisor via the health authorities (e.g. health centre) after proved to be clinically cured or free from the aforementioned diseases. Similarly, a Termination Certificate of Quarantine (Suspension from school/work) will be issued and faxed to the relative institution, thus the student, teaching or non-teaching staff may resume class/work, or participate in held by the institution.

Annex 2 Guidelines to clean and disinfect environment, equipment, articles and utensils

1 Preparation before cleaning and disinfection

- **Personal protective equipment: When carrying out disinfection, preparing and using bleach solution, always wear masks, gloves, disposable aprons or task-specific aprons (always wash after use);**

- **Preparation for diluted household bleach solution:**

  a. Prepare the solution carefully in a well-ventilated area. Avoid direct contact with eyes and skin. Should this happen, rinse with a lot of water;

  b. Bleach solution should not be used with other cleaning agents;

  c. Prepare diluted household bleach solution by adding water to household bleach;

  d. Household bleach which contains 5% chlorine can be diluted to make 1:10 to 1:100 bleach solution by adding one part of household bleach to 9 ~99 parts of water respectively;

  e. Recommended usage of household bleach containing 5% chlorine:

Bleach dilution	Preparation	Application
1 : 10	Adding 1 part bleach to 9 equal parts of water	Cleaning of environment contaminated by vomitus, excreta, body fluids, blood and similar contaminants
1 : 100	Adding 1 part bleach to 99 equal parts of water	General cleaning of environment

  f. If the chlorine concentration is not 5%, it is advised to follow the use instructions on the package;

  g. Bleach solutions must be prepared daily. They lose strength after 24 hours. Anytime the odour of chlorine is not present, discard the solution.

2 Cleaning and disinfection

Basic protective measures: Cleaning workers must wear gloves and masks, and wash hands thoroughly with liquid soap right after the cleaning.

2.1 Daily cleaning and disinfection

- Procedures:
  - a. Sweep away trashes and dust;
  - b. Wipe with 1: 100 diluted bleach solution;
  - c. Leave for 5-10 minutes to allow disinfection;
  - d. Rinse with water;
  - e. If necessary, dry with a mop or clean towel.
- Frequency: Generally once a day. Frequently touched equipment can be cleaned twice a day. Frequency can be increased according to actual situation. Cleaning should be done promptly if there is obvious contamination;
- For facilities and equipment (metallic surfaces such as handrail and doorknob) not suitable to be cleaned with bleach solution, 70% alcohol can be used for disinfection.

2.2 Cleaning and disinfection for environment contaminated by sputum, vomitus, excreta, blood or similar contaminants

- Procedures:
  - a. Firstly remove the contaminant with the disposable towel/strong absorbent material, then carefully discard it into a lidded rubbish bin;
  - b. Disinfect the contaminated surfaces and surrounding area with 1:10 diluted household bleach solution;
  - c. Leave the bleach solution on the surface for 30 minutes;
  - d. Rinse with water and wipe dry.

3 Environmental surfaces

- Use mops, brushes or wiping cloths to scrub/wipe the surfaces with 1: 100 diluted bleach solution; leave for 5-10 minutes to allow disinfection, then rinse with water or wipe dry.
- Scope:
  - Environmental including walls (below 1.5 metres high) and floors of indoor space, corridors, staircase, elevators, etc;
  - Furniture surfaces;
  - Attention should be paid to doorknobs, window handles, handrails, keypads (electronic locks, intercoms, elevators, electrical appliances, telephones and computers) etc.

4 Sanitary facilities

4.1 Disinfection of toilets and bathrooms should be done at least once per day;

4.2 Floors, walls, bath tubs, sinks, water tank handles, taps, etc. should be wiped with 1:100 diluted bleach solution using mops, brushes, wiping towels, etc. Leave for 5-10 minutes (for complete disinfection), then rinse with water or wipe dry;

4.3 Toilets:

a. Lower the lid and flush the toilet;
b. Brush it with 1:10 diluted bleach solution;
c. Cover the lid and flush it again;
d. Wipe the toilet seat with 1:100 diluted bleach solution;
e. Pour a tablespoon of non-diluted household bleach into the toilet bowl;
f. Leave for 10 minutes and flush with water;
g. Then flush with water again.

4.4 Disinfect floor drains inlets (if any) at least once a week to ensure that the U-shaped pipes are not dry;

a. Pour a tablespoon of 1:100 diluted bleach solution into the drain inlets;
b. Pour half a litre of water into the inlets after 5 minutes;
c. Spray insect repellent to the entrance of floor drains.

4.5 Litter bins and garbage rooms should be cleaned with 1:100 diluted bleach solution daily.

5 Special facilities and equipment

5.1 Cleansing of chamber pot or cuspidor: coverall, especially mask and gloves, should be worn, and prepare with sufficient tissue paper;

a. After use, chamber pot or cuspidor should be covered promptly with lid, if any;
b. After performing cleansing for service users, immediately pour the excretion into a toilet;
c. Use a disposable towel/ tissue paper to wipe away all stool soiled materials and discard into the toilet;
d. Lower the lid and flush the toilet;
e. Pour 1:10 diluted bleach solution into the chamber pot, gently shake the pot before pouring out the solution;
f. Immerse the chamber pot in to 1:100 diluted bleach solution; if not possible to immerse the whole pot, use disposable towel/ tissue paper to wipe the edge of the pot with diluted bleach solution;
g. Leave it for 30 minutes, and then discard the bleach solution;
h. Rinse thoroughly with water and then wipe dry.

5.2 For facilities and equipment (e.g. metallic surfaces) not suitable to be cleaned with bleach solution, 70% alcohol can be used instead.

6 Reusable articles

6.1 Handrails of wheelchairs or walking devices: wipe with 1:100 diluted household bleach solution, leave for 5-10 minutes (to allow for disinfection), then rinse with water or wipe them dry. For public handrails, disinfection should be performed before next use;

6.2 Toys, tools and other articles: wipe them with 1:100 diluted household bleach solution, leave for 5-10 minutes (to allow for disinfection), then rinse with water or wipe them dry;

6.3 Stethoscopes, thermometers and other reusable articles should be sterilized with 70% alcohol every time after use;

6.4 Other nursing instruments used during nursing procedures should be cleansed and disinfected in accordance with Annex 4;

6.5 For articles not suitable to be cleaned by bleach solution, 70% alcohol can be used for disinfection.

7 Bed sheets, beddings, clothings, towels, etc

7.1 Always wear apron, mask and gloves when handling clothings and beddings;

7.2 Do not shake the clothes with strength when handling or taking them out;

7.3 Clothes, towels and similar personal articles should be washed after every use; it is recommended to wash bed sheets and quilt covers weekly, and; dry quilts and mattresses in the sun once a week;

7.4 Bed sheets, quilt covers, clothings and towels of users with skin diseases or respiratory disease must be washed separately;

7.5 Steps

a. Soak clothes in 1:100 diluted household bleach solution for 30 minutes;

b. Then soak them in soapy water;

c. Wash them as usual and let them air-dry;

d. For articles not suitable to come into contact with bleach solution, 70% alcohol can be used instead.

8 Cleansing and disinfection of tableware

(This part can be referred to the "Technical Guidelines on Food Hygiene" of the Health Bureau)

8.1 Cleansing:

Observe the following steps when manual cleansing is adopted:

a. Remove most of the food remnants and dirt on the surface of tableware;

b. Use liquid detergent to cleanse the surface of tableware;

c. Finally wash away the remaining detergent with water.

For dishwashing machines, use according to the instruction manual. If too much food remnants and dirt remains on the surface of the tableware, remove them manually before putting into the dishwashing machine.

8.2 Disinfection:

- Physical disinfection. Heating is the most common disinfection method;

Method	Effective temperature	Minimum duration of disinfection
Hot water immersion	> 80 ℃	2 minutes
Steaming	> 77 ℃	15 minutes
	> 94 ℃	5 minutes
Dishwashing machine	80 to 90 ℃	40 seconds

- Chemical disinfection. Chlorine containing agents are the most common disinfectants.

  a. All dining utensils must be completely immersed into the disinfecting solution;

Chemical disinfectant	Specific condition	Effective concentration (ppm)	Minimum duration of disinfection
Chlorine solution (bleaching powder, bleach, sodium dichloroisocyanurat)	Water temperature ≧49 ℃	25	1 minute
	pH ≦10 and water temperature ≧38 ℃	50	
	pH ≦8 and water temperature ≧24 ℃	50	
	Water temperature ≧13 ℃	100	
Iodine solution	pH ≦5 and water temperature ≧24 ℃	12.5 to 25 or according to user manual	
Quaternary ammonium compound	Water hardness ≦500 and water temperature ≧24 ℃	200 or according to user manual	

  b. After chemical disinfection, wash the dining utensils under water to remove disinfectant residue on the surface.

8.3 Methods to maintain cleanliness:

- After disinfection, air dry or heat dry the dining utensils; do not wipe dry with towel or napkin to prevent re-contamination;
- After disinfection, the dining utensils should be timely put back into cupboard.

Annex 3 Guidance notes on Certificate of Vaccination

In accordance with the stipulations of article 11 in Administrative Regulation no. 16/2008, any person applying for services provided in social service facility, especially in nursery, are required to submit to the social service facility a health certificate containing the original of Certificate of Vaccination and copy of Personal Immunization Record issued by the Health Centre. This is to ensure all individuals have received vaccinations as stipulated before enrolling to nursery or admitted to social service facility, in order to prevent outbreak and incident of infectious diseases within social service facilities. To conform to the abovementioned requirements, the following guidance notes can serve as a reference for social service institutions:

- Since 1st April 2009, all local social service facilities serving individuals aged below 18 should request their applicants to submit a health certificate containing the original of Certificate of Vaccination and copy of Personal Immunization Record issued by the Health Centre;
- Children enrolled before 1st April 2009 are not required to hand in the mentioned health certificate; for residential facilities for children and youths, all service users aged below 18, regardless of their length of stay, are required to submit subsequently (before 30th September) the Certificate of Vaccination;
- Social service institutions shall only accept an application when relevant certificate has certified the person has completed the corresponding course of immunization for his age group, or although the corresponding course of immunization has not been completed, vaccination or booster vaccination has initiated;
- Social service institutions shall suspend the application of those who fail to present the Certificate of Vaccination until the applicants fulfil the requirements stated in the previous paragraph;
- In case relevant certificate states that the person has not completed the corresponding course of immunization for his age group and refused to finish the vaccination, social service institutions should turn down their application and transfer the case to the health authorities;
- For infants/children/adolescents who are in need of urgent admission to the institution, a grace period of two months can be given for submission of the abovementioned certificate;
- For service users who have not completed the corresponding course of immunization, but vaccination or booster vaccination has already been initiated, social service institutions should trace whether the service users have been vaccinated according to the schedule marked in the Certificate of Vaccination until they have completed the corresponding course of immunization for their age group;
- Social service institutions shall keep in the aforesaid Certificate of Vaccination and copy of personal immunization record in the applicant's file for inspection.

Annex 4 Recommended cleansing and disinfection methods of nursing instruments

Articles	Recommended method	Alternative method
Reusable suction bottle	Clean every day a. Clean with detergent and water first; b. Then immerse in 1:10 diluted household bleach for 10 minutes; c. Rinse with water and store dry.	
Suction connection tubing and Y-shape connector	Disposable.	Wash every time after suction of sputum. a. Flush thoroughly by making use of the suction power of the machine; b. Immerse in 1: 10 bleaching solution for 10 minutes; c. Rinse and store dry.
Suction tubing	Disposable.	
Trachesostomy connection tubing	Inner and outer tubes should be cleaned separately. a. Clean it with cotton buds under water tap; b. Then immerse in 1: 10 diluted household bleach for at least 10 minutes; c. Rinse with water and store dry.	
Mouth gag	a. Clean with detergent and water first; b. Then immerse in 1:10 diluted household bleach for 10 minutes; c. Rinse with water and store dry.	
Nebulizers	a. Clean with detergent and water first; b. Then immerse in 1:10 diluted household bleach for 10 minutes; c. Rinse with water and store dry.	

Articles	Recommended method	Alternative method
Nebulizer masks and tubing	Disposable.	a. Immerse in 1: 10 bleaching solution for 10 minutes; b. Rinse and store dry.
Oxygen masks, oxygen nasal cannula and oxygen tubing	Disposable.	a. Immerse in 1: 10 bleaching solution for 10 minutes; b. Rinse and store dry.
Tongue depressor (wood)	Disposable.	
Mercury thermometer	a. Wash with cold water; b. Then immerse in 70% alcohol for 15 minutes; c. Store dry.	
Dressing trolley	a. Cleanse with detergent and water; b. Wipe dry; c. Wipe trolley surface with 70% alcohol; d. Store dry.	
Feeding tubing and funnel	a. After each feed, flush the feeding set with water and air dried before putting it back into container for subsequent use; b. Disinfect the reusable articles daily, e.g. boiling for 10 minutes; c. Change feeding tubing regularly according to the manual's instruction.	

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Articles	Recommended method	Alternative method
Urine measuring jar	a. Clean with detergent and water first; b. Then immerse in 1:10 diluted household bleach for 10 minutes; c. Rinse with water and store dry.	
Bedpan	a. Clean with detergent and water every time after use; b. Then immerse in 1:10 diluted household bleach for 30 minutes; c. Rinse with water and store dry.	
Stethoscope	a. Sterilize every time before and after use; b. Wipe with 70% alcohol.	
Blood glucose monitoring system	a. Sterilize every time before and after use; b. Wipe with 70% alcohol; c. Used test strips and needles must be disposed at once.	
Cuff for sphygmomanometer	a. Clean with cleaning solution and water regularly; b. Cleanse with water first if contaminated, then immerse in 1:10 diluted household bleach for 30 minutes; c. Rinse with water and store dry.	
Goggles	a. Clean with detergent and water first; b. Then immerse in 1:10 diluted household bleach for 30 minutes; c. Rinse with water and store dry.	

- If the recommended methods cannot be achieved in the facility, the alternative methods can be adopted;
- The above dilution calculation is made according to bleach containing 5.25% sodium hypochlorite;
- If contaminated by body fluids, blood or excreta, the above tools and articles must be first cleaned with 1:10 diluted household bleach, left for 30 minutes before being handled with the above recommended cleansing and disinfection method.

Annex 5 Guideline of conventional reserve of materials for disease prevention in social service facilities [applicable to residential facilities/ non-residential facilities (crèches and day care centres)/other non-residential facilities]

1. Period of which conventional reserve of materials applies

Under general condition, social service facilities should maintain a reserve of 30 days of materials for disease prevention.

(Remark: in case of outbreak or special circumstance, social service facilities shall follow the suggested quantity of reserve by the Health Bureau).

2. Quantity of reserve of materials for disease prevention

Aside from storing sufficient materials for diseases prevention according to the following requirements, social service facilities shall also ensure adequate quantity of materials for disease control (including single-use protective gowns, single-use latex gloves, single-use aprons, disposable caps, shoe covers, goggles, etc.) for daily usage.

Residential facilities:

Materials for disease prevention	Quantity of reserve *	Duration of reserve
Single-use protective gowns	No. of staff x 1pc/day x 30 days	The facility should maintain 30-day stock of disease prevention materials, check and refill regularly to ensure the supplies are sufficient and prior to the expiry date.
Surgical masks	1. Reserve quantity for staff and service users: (No. of staff x 2pcs/day x 30 days) + (No. of service users x 1pc/day x 30 days) 2. Reserve quantity for visitors: Total no. of visitors in a week x 4	
Single-use latex gloves	No. of service users x 1pair/day x 30 days	
Single-use aprons	No. of staff x 1pc/day x 30 days	
Disposable caps	No. of staff x 1pc/day x 30 days	
Shoe covers	No. of staff x 1pair/day x 30 days	

(Remark: It is considered that in event of an outbreak of infectious disease in the facility, a staff shall change a new surgical mask every 4 hours; therefore, if staff work on an 8-hour shift, each of them shall require 2 masks daily)

Non-residential facilities (crèches and day care centres)

Materials for disease prevention	Quantity of reserve *	Duration of reserve
Surgical masks	1. No. of staff: No. of staff x 2pcs/day x 30 days 2. According to no. of service users (remark): ≦200 users : 200pcs 201 to 400 users : 400pcs 3. Reserve quantity for visitors: Total no. of visitors in a week x 4	The facility should maintain 30-day stock of surgical masks for staff; stocks of other disease prevention materials follow the original reserve principle; it is obligatory to check and refill regularly to ensure the supplies are sufficient and prior to the expiry date.
Single-use latex gloves	50 pairs	
Single-use protective gowns	According to no. of service users: ≦100 users : 20 pcs/pairs 101 to 250 users : 40 pcs/pairs 250 users or more : 60 pcs/pairs	
Single-use aprons		
Disposable caps		
Shoe covers (pair)		

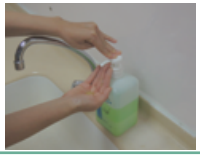
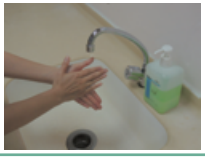
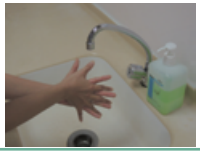
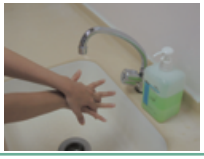
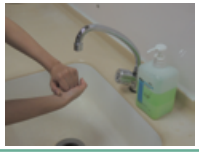
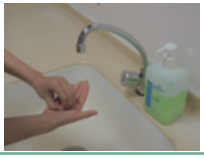
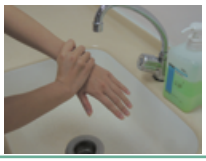
(※Remark: When sick children are detected upon arrival in the morning, parents should be advised to bring the sick children for medical attention. If children feel unwell during class, staff of facility should notify their parents to bring them for medical attention, and the sick children shall wear a surgical mask during that time; therefore, certain quantity of children surgical masks should be stocked in the facility)

Non-residential facilities (Except crèches and day care centres)

Materials for disease prevention	Quantity of reserve	Duration of reserve
Surgical masks	1. No. of staff: No. of staff x 2pcs/day x 30 days 2. According to no. of service users (remark): ≦200 users : 200pcs 201 to 400 users : 400 pcs 400 users or more : 800 pcs 3. Reserve quantity for visitors: Total no. of visitors in a week x 4	The facility should maintain 30-day stock of surgical masks for staff; stocks of other disease prevention materials follow the original reserve principle; it is obligatory to check and refill regularly to ensure the supplies are sufficient and prior to the expiry date.
Single-use latex gloves	50 pairs	
Single-use protective gowns	According to no. of service users: ≦200 users : 10 pcs/pairs 201 to 400 users : 20 pcs/pairs 400 users or more : 30 pcs/pairs	
Single-use aprons		
Disposable caps		
Shoe covers (pair)		

Annex 6 Proper hand hygiene (at least rub hands for 20 seconds)

Handwashing with liquid soap and water

1 Wet hands under water and apply enough liquid soap 	2 Rub the palms 
3 Rub between fingers, rub hands palm to palm 	4 Rub back of hands with fingers interlaced, change hands and repeat 
5 Rub with backs of fingers to opposing palms with fingers interlocked 	6 Rub tips of fingers in opposite palm, change hands and repeat 
7 Rub each thumb clasped in opposite hand using rotational movement, change hands and repeat 	8 Rub wrists 
9 Rinse hands with water 	10 Dry hands with a single-use towel and turn off tap 

Use of alcohol-based handrub

1 Apply handrub in hand

2 Rub hands palm to palm

3 Rub between fingers, rub hands palm to palm

4 Rub back of hands with fingers interlaced, change hands and repeat

5 Rub with backs of fingers to opposing palms with fingers interlocked

6 Rub tips of fingers in opposite palm, change hands and repeat

7 Rub each thumb clasped in opposite hand using rotational movement, change hands and repeat

8 Rub wrists

9 Allow natural dry/rub until hands are dry

Attention:

- Inflammable
- Beware of splash into eyes
- Children should use under guidance

When do we perform hand hygiene?

- Before touching the eyes, nose and mouth; Before eating; Before handling food; After using the toilet;
- When hands are contaminated, e.g.:
  - After sneezing or being contaminated by respiratory secretions;
  - After handling stools, diapers, vomitus, rubbish or other soiled articles;
  - After using public transport;
- Workers should wash hands immediately every time after changing diaper of a service user; when soap and water is not available and hands are not visibly soiled, alcohol-based handrub can be used alternatively.

Annex 7 Correct use of mask, gloves and personal protective equipment

Correct use of surgical mask

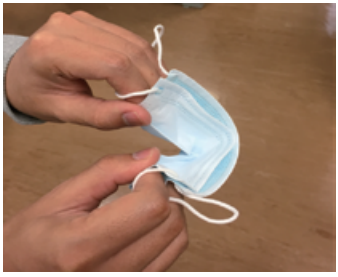
Putting on surgical mask	
1. The side with folds of the surgical mask facing downwards on the outside, it is waterproof and dust-resistant which can prevent spread of droplets; 2. With the metallic strip uppermost;	
3. Put on mask, secure all ties (for tie-on surgical mask), or position the elastic bands around both years (for ear-loops type); 4. Extend the mask to fully cover nose, mouth and chin; remember to mould the metallic strip over nose bridge to ensure a secure fit so that leaks are prevented;	
5. After that, check if the mask fits snugly over the face and completely cover mouth, nose and chin.	

Removing surgical mask

1. When taking off a mask, hold both ear loop and take off from face; avoid touching the middle of the mask as it may be contaminated with secretions;

2. After taking off the mask, fold the mask outwards (i.e. the outside of the mask facing inwards) to avoid contact with secretions;

3. Then put the mask into a clean plastic or paper bag and tie the bag closed before putting it into a rubbish bin with a lid.



Important notes

- Wash hands thoroughly before putting on a mask;
- Avoid touch the mask after wearing. If you must do so, wash your hands before and after touching the mask;
- When taking off the mask, avoid touching the outside of the mask as this part may be covered with germs;
- Do not hang the mask around the neck or tuck it into pocket for future use;
- Change surgical mask at least daily. Replace the mask immediately if it is damaged or soiled;
- Wash hands before and after taking off the mask;
- If experience shortness of breath or breathing difficulty when wearing a mask, take it off at once.

Correct use of gloves

Putting on gloves

1. Select appropriate size of gloves

2. Extend to cover wrist of isolation gown

Removing gloves

1. Grasp the palm area of a gloved hand

2. Peel off first glove

3. Hold removed glove in gloved hand

4. Slide fingers of ungloved hand under remaining glove at wrist (Do not touch the outside of gloves)

5. Peel off second glove over first glove

Important notes

- Do not touch the mouth, nose, eyes or other mucous membranes after wearing gloves;
- Wash hands immediately after removing the gloves;
- Used gloves should be disposed into a firm plastic bag (do not re-open unless necessary) / lidded rubbish bin;
- Re-use of gloves is not recommended.

Personal protective equipment (for high risk procedures)

Sequence for putting on

1 Put on shoe covers

2 Wash hands

3 Wear a surgical mask

4 Wear a cap

5 Put on goggles / face shield

6 Wear gown

7 Put on gloves

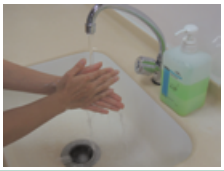
Personal protective equipment (for high risk procedures)

Sequence for donning and removing

1 Take off gloves

2 Remove gown

3 Wash hands



4 Take off goggles/ face shield (please refer to Annex 4 for cleaning and sterilization method of goggles)

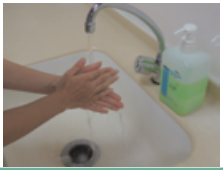
5 Remove cap from front to back, avoid passing in front of the face

6 Remove shoe covers

7 Perform hand hygiene

8 Take off surgical mask

9 Perform hand hygiene



Annex 8 Sentinel surveillance of infectious diseases in social residential facilities Online reporting system – Instructions for completion *

Website: https://www.ssm.gov.mo//sfids

1. General remarks

- One surveillance form for each facility;
- Surveillance period: Social residential institutions can allocate certain periods daily to conduct symptom monitoring 2-3 times for service users. However, if the labour force is restricted, or there are other reasons, the surveillance shall be conducted at least once daily;

  Example 1: A residential home for children conducts symptom monitoring for its residents at 7:30am daily and completes the surveillance form.

  Example 2: A residential home for the elderly conducts symptom monitoring on a daily basis for its residents at 9:00am and 5:00pm, and records the accumulative number of residents with symptoms in these two periods of the day in the surveillance form.
- Surveillance content: fever, sore throat/ runny / cough (common cold), diarrhea/ vomiting, skin rash (including hand, foot and mouth disease) and other symptoms;
- The facility may submit the statistical figures daily or by every Tuesday after compiling the weekly figures via the online reporting system;
- Statistical analysis and charts will be produced on Tuesday and will be available on the online system on Wednesday;
- When the number of service users/staff in social residential institutions with similar symptoms suddenly exhibit abnormal symptoms or increases compared to ordinary days, the institutions shall immediately inform CDC (Contact number during fffice hours: 28533525; contact number during non-office hours: 28313731; fax: 28533524) and the Social Welfare Bureau (Contact number during office hours: 83997758/ 83997801; contact number during non-office hours: 668681588; fax: 28355161), and complete the Notification Form of Collective Illnesses related to Infectious Diseases in Social Residential Institutions.

2. Specific Items to be completed

- Surveillance scope: All service users in the residential institution; if situation is not allowed, it is suggested to set the surveillance scope according to the actual environment;
- Number of monitored individuals: Refer to number of surveillance targets (As there is discharge and admission of service users, this column should be updated weekly);
- Choose surveillance day by clicking: It is defaulted to '√', which means the checked box is a surveillance day; in case of failure to complete surveillance form on that day, click the '√' once to clear the box;
- Reason of failure to complete: If the box of a surveillance day is unchecked, write down the reason of failure to complete, e.g. day for outdoor activities/rest day;
- Number of individuals displaying symptoms: If service users display symptoms stated in surveillance form, the number of individuals shall be calculated and recorded in the form:
  - a. If service users exhibit more than one symptom, these symptoms shall be calculated and recorded in different symptom columns. For example, if service user A has two symptoms such as fever and diarrhoea, then these two symptoms shall be counted individually and recorded in the 'fever' and 'diarrhoea" columns, respectively, when completing the form;
  - b. If service users have sore throat, runny nose or cough, this shall be recorded in the 'sore throat/runny nose/cough' column;
  - c. If service users have hand, foot and mouth disease, this shall be calculated and recorded in the 'skin rashes' column;
  - d. Any unclear communicable disease symptoms or those not included in the form can be calculated and recorded in the 'Others' column. If it is only known that service users suffer from a certain communicable disease, such as 'acute conjunctivitis', this can also be put in this column.

*** Those fail to report online may fill-in the "Form for Surveillance of Infectious Diseases in Social Service Facilities" for notification**

Form for Surveillance of Infectious Diseases in Social Service Facilities

Name of Facility: _____ Completed by: _____

Surveillance scope: (Floor, room no.) _____ No. of monitored individuals: _____

	Date (DD / MM)	Mon (/)	Tue (/)	Wed (/)	Thu (/)	Fri (/)	Sat (/)	Sun (/)	Mon (/)	Tue (/)	Wed (/)	Thu (/)	Fri (/)	Sat (/)	Sun (/)
No. of individuals displaying symptoms	Fever														
	Sore throat／Runny nose／Cough (including common cold)														
	Diarrhoea／Vomit／														
	Skin rashes (including Hand—foot—mouth disease)														
	Others														

1. N. B. Fill in this form if online reporting system is not available;

2. Symptoms of service users ／ staff should be monitored daily and recorded in this form;

3. Should there be any unusual condition, complete the "Notification Form of Collective Illness related to Infectious Diseases in Social Service Facilities" and notify CDC (Tel: 28533525) ／ IAS (Tel: 83997758) immediately.

Annex 9 Useful telephone numbers

Health and medical services:

Unit	Services	Tel	Fax
Conde de São Januário General Hospital	Emergency, outpatient, inpatient, surgery, rehabilitation, laboratory tests, imaging examinations, etc.	28313731 83906000	
Island Emergency Station of Conde de São Januário General Hospital	Emergency	28992230	
Kiang Wu Hospital	Emergency, outpatient, inpatient, surgery, rehabilitation, laboratory tests, imaging examinations, vaccination, basic health care, etc.	28371333	28347752
University Hospital	Outpatient, inpatient, surgery, laboratory tests, imaging examinations, etc.	28821838	28821788
Tap Seac Health Centre	Adult health care, child health care, prenatal health care, women's health care, family planning, oral health care, student health care, health education, vaccination, basic health care, etc.	28522232	28568872
Fai Chi Kei Health Centre		28562922	28260630
Hoi Pong Koi Health Centre (Porto Interior)		28920024 28920025	28923196
Fong Son Tong Health Centre (S. Lourenço)		28313418	28975198
Hac Sa Wan Health Centre (Areia Preta)		28413178	28415193
Ocean Gardens Health Centre		28813089	28813093
Nossa Senhora do Carmo – Lago Health Centre		28500400	28500398
Coloane Health Station		28882176	28882142
Seac Pai Van (Coloane) Temporary Health Station		28502001	28502004
Tuberculosis Prevention and Treatment Centre	Diagnosis, treatment and prevention of tuberculosis	28532196	28530582
Centre for Disease Prevention and Control	1. Prevention and control of infectious diseases (including notification of infectious diseases, guidance on infectious diseases prevention and control, public health emergency response, vaccines, etc.); 2. Health promoting education and activities; 3. Surveillance of environmental hygiene; 4. Health planning.	28533525	28533524

Social Welfare Bureau:

EntidadUnit	Services	Tel	Fax
Social Service Facilities Management and Licensing Division	Responsible for monitoring of social service facilities licence, oversee their operation and service quality, and manage the social service facilities subordinated to the Social Welfare Bureau.	83997732	28355161

Other departments or entities:

EntidadUnit	Services	Tel	Fax
Fire Services Bureau (ambulance)	Ambulances and fire trucks	28572222 119 / 120	
Macau Residue System Company, Ltd.	Collection of biohazard waste	28850065	28850083

Annex 10 Infectious diseases reporting mechanism and reporting form

When there is a sudden increase in the number of people having fever (body temperature higher than 37.5 oC) or similar symptoms, the institutions shall complete the "Notification Form of Collective Illness related to Infectious Diseases in Social Residential Institutions" and report to relevant authorities at once.

In event the patient's condition is severe or outbreak of respiratory or gastrointestinal disease is suspected, notify the following authorities in order to adopt appropriate measures.

Centre for Disease Prevention and Control (CDC), Health Bureau :

Office hours:

Tel: 28533525

Fax: 28533524

Non-office hours: 28313731 (Duty sanitary authority)

Social Welfare Bureau :

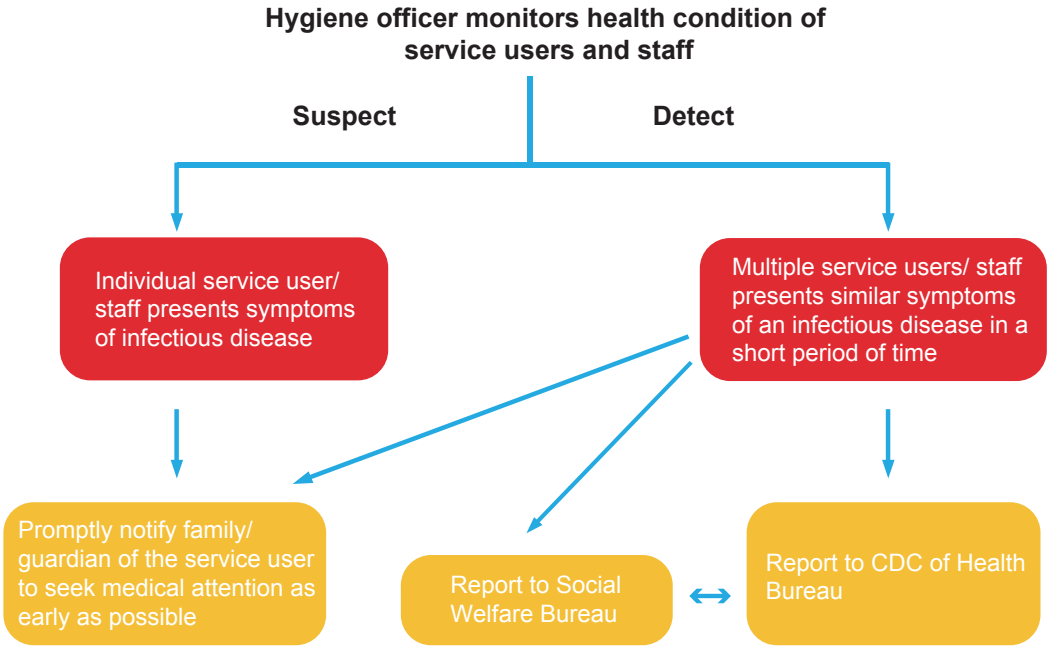
Office hours:

Tel: 83997758／839977801 (Medical team)

Fax: 28355161

Non-office hours: 66861588

Work flow of the reporting mechanism:



Governo da Região Administrativa Especial de Macau
Serviços de Saúde

Notification Form of Collective Illness related to Infectious Diseases in Social Residential Institutions

Name of Institution: _____ Date: _____

Address: _____

Contact Person: _____

Contact Tel: _____

No. of service users: _____

No. of staff: _____

Name	Room no.	Sex	Age	Onset Date	Symptoms (Please ' √ ' or ' X ' the appropriate boxes)													Remarks (Contact Tel.)	Patient Card no. (if applicable)
					Fever (oC)	Cough	Expectoration	Running nose	Sore throat	Headache	Shortness of breath	Nausea	Vomiting (times)	Abdominal pain	Diarrhea (times)	Skin rash	Hospitalization	Other	
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Management: Seek medical attention No ☐

Yes☐ Location: ☐ Health Centre/CHCSJ ☐ Kiang Wu Hospital

☐ Private clinic ☐ Other

Doctor's diagnosis and opinion _____

Response measures adopted in the institution:

_____

_____

When there is a sudden increase in the number of staff and/or service users (or other related persons) having fever (body temperature higher than 37.5 oC) or similar symptoms, the institutions shall complete this form and notify the CDC (Contact number during office hours: 2853 3525; contact number during non-office hours: 2831 3731; fax: 28533524; e-mail: cds_cdc@ssm.gov.mo) / Social Welfare Bureau (Contact number during office hours: 8399 7758/ 83997801; contact number during non-office hours: 66861588; fax: 28355161)

Annex 11 Infection Prevention Checklist for Social Service Facilities (applicable to residential facilities)

Name of facility: _____ Date: _____

Purpose: To assist facilities to organize infection control measures more systematically and monitor the implementation of the measures, in order to reduce transmission and outbreak of infectious diseases in the facilities.

Instructions to complete the checklist:

1 . People to complete the checklist: The checklist is suggested to be completed by the person-in-charge of the facility/ hygiene officer, or by persons with medicine/nursing/health knowledge that familiar with the operation of the facility.
2. Frequency of check-up: The infectious disease prevention measures of the facility should be reviewed at least once every three months.
3. Means of implementation: Person-in-charge shall check the facility in accordance with this form; completed form should be filed properly for review whenever necessary.

Key checkpoints of infectious disease control measures in facilities (Please check the appropriate box with x)

	1. Implementation of infectious disease reporting mechanism	Means of check-up	Yes	No	Not applicable	Remark / Follow-up
1.1	Fill in the 'Form for Surveillance of Infectious Diseases in Social Residential Institutions' every day; this record will be saved and serve as the baseline information of service users and workers in the facility	Observation	☐	☐		
1.2	The infectious disease reporting mechanism is operated by designated staff of the facility	Inquiry	☐	☐		Name of designated staff: _____ Position: _____
1.3	The reporting forms are placed in designated areas, so that staff can report timely	Observation/ check-up	☐	☐		Forms are placed at: _____
1.4	When there is suspected/ confirmed case of collective infection of infectious disease in the facility, notify the Health Bureau and Social Welfare Bureau in a timely manner	Observation of report record	☐	☐	☐	(Not applicable: no case of collective infection of infectious disease has been presented in the facility in the recent one year)
	2. Vaccination					
2.1	Service users have been vaccinated according to the Health Bureau immunization schedule, and relevant immunization records have been stored properly	Observation	☐	☐		
2.2	Unless with particular reason, the facility shall encourage service users and workers to receive seasonal influenza vaccine provided by the Health Bureau every year, and relevant vaccination list should be saved	Observation	☐	☐	☐	Date of recent vaccination: _____
	3. Maintain good ventilation inside the facility					
3.1	Open windows	Observation	☐	☐		
3.2	Switch on exhaust fan	Observation	☐	☐		

3.3	Switch on air conditioner	Observation	☐	☐	☐	(Not applicable: Winter/ facility without air conditioner)
3.4	Regularly clean the air filters of air conditioners	Inquiry	☐	☐	☐	Split-type air-conditioner: ☐ Every week ☐ Every month ☐ Others _____ Central air-conditioner: ☐ Every half year ☐ Every year ☐ Others _____
4. Maintain good environmental hygiene within the facility						
4.1	Clean and disinfect frequently touched surfaces such as furniture, rehabilitation articles, floors, toilets and bath tubs at least once a day with 1: 100 diluted bleach solution (5.25%); then rewipe with clean water and wipe dry	Inquiry/ Observation	☐	☐		(Yes: correct dilution ratio of bleach solution)
4.2	Clean and disinfect areas contaminated by excretion, vomitus, blood or similar contaminants with 1: 10 diluted bleach solution, leave in for 15 to 30 minutes, then rewipe with clean water and wipe dry	Inquiry/ Observation	☐	☐		(Yes: correct dilution ratio of bleach solution, and correct duration of disinfection)
4.3	Vacuum clean carpets daily and wash them monthly	Inquiry	☐	☐	☐	(Not applicable: no carpets)
4.4	Regularly check and clean the bedside cabinets of the service users	Inquiry	☐	☐		☐Daily ☐Weekly ☐Monthly
4.5	Remove water accumulated saucers under flower pots and change water in vases weekly	Inquiry	☐	☐	☐	(Not applicable: no flower pots and vases)
4.6	In case insect and rodent infestation is suspected (detection of excretion of mice, cockroaches, mosquitoes, flies, etc.), the facility will adopt appropriate preventive measures and action	Inquiry	☐	☐		☐Contact relevant public entities ☐Others_____
5. Keep kitchen clean and maintain food hygiene						
5.1	Check temperatures of refrigerators timely	Inquiry/ Observation	☐	☐		Temperature of frozen grid: _____ ℃ Temperature of refrigerated grid: _____ ℃
5.2	Clean regularly refrigerators	Inquiry	☐	☐		☐Weekly ☐Monthly ☐Others_____
5.3	Wash regularly exhaust fan and extractor hood	Inquiry	☐	☐		☐Weekly ☐Monthly ☐Others_____
5.4	Utensils should be place in a clean cupboard	Observation	☐	☐		

5.5	Keep worktops clean	Observation	☐	☐		
5.6	Clothing and personal articles should not be kept inside the kitchen	Observation	☐	☐		
5.7	Adequate equipment for food processing (caps, disposable surgical masks, gloves and aprons) have been provided in the facility	Observation	☐	☐		
5.8	Use separate containers, chopping boards and knives to handle for cooked and uncooked food, label clearly and store separately	Observation	☐	☐		
5.9	Cover rubbish bins properly	Observation	☐	☐		
6. Measures to clean and disinfect bathrooms						
6.1	Maintain good hygiene in wash rooms and bathrooms	Observation	☐	☐		
6.2	Have liquid soap and hand-dryers/disposable towels in place	Observation	☐	☐		
6.3	Ensure proper operation of the flushing system of toilets	Observation	☐	☐		
6.4	U-trap has been installed in drainage, do not change the drainage pipe without approval	Observation	☐	☐		
6.5	Regularly (approx. once per week) pour half a litre of clean water into every drain outlet to ensure the u-trap is charged with water	Inquiry	☐	☐		
6.6	Keep the soakaway system free from blockage, ensure the sewers are in working condition and without leakage	Inquiry/ Observation	☐	☐	☐	
7. Ask a cleaner (name:): the appropriate handling method of cleaning articles contaminated with body fluid or blood, such as a mop or other equipment, before re-using the product. Relevant procedures shall include points 7.1 to 7.4.						
7.1	Firstly wash the contaminated cleaning article with clean water, and then remove the solid contamination from it	Inquiry/ Observation	☐	☐		
7.2	Soak the contaminated cleaning article into 1: 10 diluted bleach solution (5.25%), and leave it for 30 minutes	Inquiry/ Observation	☐	☐		(Yes: ratio of bleaching solution and disinfection duration are correct)
7.3	Then wash the cleaning article with detergent and clean water	Inquiry/ Observation	☐	☐		
7.4	Only re-use the cleaning article after it dries completely	Inquiry/ Observation	☐	☐		

8. Ask a cleaner (name:): the environmental disinfection method during an outbreak of infectious disease. Relevant procedures shall include points 8.1 to 8.3.						
8.1	Clean and disinfect furniture, floor and toilets with 1:100 diluted household bleach; wait for 15 to 30 minutes, then rewipe with clean water and wipe dry. Special attention should be given to washrooms, kitchen and frequently touched surfaces like lighting switches, doorknobs and handrails	Inquiry	☐	☐		(Yes: ratio of bleaching solution and disinfection duration are correct)
8.2	Use disposable towel/ tissue paper for initial cleaning of surfaces contaminated with vomitus or excreta, and then disinfect according to the abovementioned steps	Inquiry	☐	☐		(Yes: use disposable towel/ tissue papal for initial cleaning)
8.3	Use 70 % alcohol to clean surfaces of which bleach is not appropriate for disinfection (e. g. metal surface)	Inquiry	☐	☐		
9. Disease prevention materials supply and management						
9.1	The facility has stored sufficient quantity of disease prevention materials for one month use according to the requirement of Health Bureau and Social Welfare Bureau. In-stock: Surgical mask: _____ pcs Disposable protective coverall: _____ sets Disposable apron: _____pcs Gloves: _____ pairs Cap: _____ pcs Shoe cover: _____pairs	Observation/ Inventory check	☐	☐		
9.2	In case of any change to the inventory list, the facility shall update at once and keep the latest status in record	Inquiry/ Observation	☐	☐		
10. Management and cleaning of special purpose vehicle(s)						
10.1	Clean and disinfect the special purpose vehicle(s), including the compartments, handrails and seats, at least once a day with 1:100 household bleach (5.25%)	Inquiry	☐	☐	☐	(Not applicable: with no special purpose vehicles)
10.2	Alcohol hand rub, face masks, tissue paper, airsick bags and rubbish bags have been made available on the vehicle(s)	Observation	☐	☐	☐	(Not applicable: with no special purpose vehicles)

Suggestion / Supplementary information:

_____

_____

_____

Annex 11 Infection Prevention Checklist for Social Service Facilities (applicable to non-residential facilities)

Name of facility: _____ Date: _____

Purpose: To assist facilities to organize infection control measures more systematically and monitor the implementation of the measures, in order to reduce transmission and outbreak of infectious diseases in the facilities.

Instructions to complete the checklist:

1. People to complete the checklist: The checklist is suggested to be completed by the person-in-charge of the facility/ hygiene officer, or by persons with medicine/nursing/health knowledge that familiar with the operation of the facility.
2. Frequency of check-up: The infectious disease prevention measures of the facility should be reviewed at least once every three months.
3. Means of implementation: Person-in-charge shall check the facility in accordance with this form; completed form should be filed properly for review whenever necessary.

Key checkpoints of infectious disease control measures in facilities (Please check the appropriate box with x)

	1. Implementation of infectious disease reporting mechanism	Means of check-up	Yes	No	Not applicable	Remark / Follow-up
1.1	Observe daily health condition of service users; in case of abnormal cases, separate resting/waiting section should be arranged whenever possible (or keep distance from other service users); if necessary, arrange immediate medical attention for the case, or notify their family/ guardian to bring them for medical care, and document the case for timely notification if necessary	Observation/ Inquiry	☐	☐		
1.2	The infectious disease reporting mechanism is operated by designated staff of the facility	Inquiry	☐	☐		Name of designated staff: _____ Position: _____
1.3	The reporting forms are placed in designated areas, so that staff can report timely	Observation/ check-up	☐	☐		Forms are placed at:_____
1.4	When there is suspected/ confirmed case of collective infection of infectious disease in the facility, notify the Health Bureau and Social Welfare Bureau in a timely manner	Observation of report record	☐	☐	☐	(Not applicable: no case of collective infection of infectious disease has been presented in the facility in the recent one year)
	2. Vaccination					
2.1	The facility has collected and properly kept the original vaccine immunization certificates from all service users aged 18 or below	Observation	☐	☐		
2.2	Unless with particular reason, the facility shall encourage service users and workers to receive seasonal influenza vaccine provided by the Health Bureau every year, and relevant vaccination list should be saved	Observation	☐	☐	☐	Date of recent vaccination: _____
	3. Maintain good ventilation inside the facility					
3.1	Open windows	Observation	☐	☐		
3.2	Switch on exhaust fan	Observation	☐	☐		

3.3	Switch on air conditioner	Observation	☐	☐	☐	(Not applicable: Winter/ facility without air conditioner)
3.4	Regularly clean the air filters of air conditioners	Inquiry	☐	☐	☐	Split-type air-conditioner: ☐ Every week ☐ Every month ☐ Others _____ Central air-conditioner: ☐ Every half year ☐ Every year ☐ Others _____
4. Maintain good environmental hygiene within the facility						
4.1	Clean and disinfect frequently touched surfaces such as furniture, rehabilitation articles, floors, toilets and bath tubs at least once a day with 1: 100 diluted bleach solution (5.25%); then rewipe with clean water and wipe dry	Inquiry/ Observation	☐	☐		(Yes: ratio of bleaching solution is correct)
4.2	Clean and disinfect areas contaminated by excretion, vomitus, blood or similar contaminants with 1: 10 diluted bleach solution, leave in for 15 to 30 minutes, then rewipe with clean water and wipe dry	Inquiry/ Observation	☐	☐		(Yes: ratio of bleaching solution and disinfection duration are correct)
4.3	Vacuum clean carpets daily and wash them monthly	Inquiry	☐	☐	☐	(Not applicable: no carpets)
4.4	Regularly check and clean the bedside cabinets of the service users	Inquiry	☐	☐		(Not applicable: no flower pots and vases)
4.5	Remove water accumulated saucers under flower pots and change water in vases weekly	Inquiry				☐Contact relevant public entities ☐Others_____
5. Keep kitchen clean and maintain food hygiene						
5.1	Check temperatures of refrigerators timely	Inquiry/ Observation	☐	☐		Temperature of frozen grid: _____℃ Temperature of refrigerated grid: _____℃
5.2	Clean regularly refrigerators	Inquiry	☐	☐		☐Weekly ☐Monthly ☐Others_____
5.3	Wash regularly exhaust fan and extractor hood	Inquiry	☐	☐		☐Weekly ☐Monthly ☐Others_____
5.4	Utensils should be place in a clean cupboard	Observation	☐	☐		

5.5	Keep worktops clean	Observation	☐	☐		
5.6	Clothing and personal articles should not be kept inside the kitchen	Observation	☐	☐		
5.7	Adequate equipment for food processing (caps, disposable surgical masks, gloves and aprons) have been provided in the facility	Observation	☐	☐		
5.8	Use separate containers, chopping boards and knives to handle for cooked and uncooked food, label clearly and store separately	Observation	☐	☐		
5.9	Cover rubbish bins properly	Observation	☐	☐		
6. Measures to clean and disinfect bathrooms						
6.1	Maintain good hygiene in wash rooms and bathrooms	Observation	☐	☐		
6.2	Have liquid soap and hand-dryers/disposable towels in place	Observation	☐	☐		
6.3	Ensure proper operation of the flushing system of toilets	Observation	☐	☐		
6.4	U-trap has been installed in drainage, do not change the drainage pipe without approval	Observation	☐	☐		
6.5	Regularly (approx. once per week) pour half a litre of clean water into every drain outlet to ensure the u-trap is charged with water	Inquiry	☐	☐		
6.6	Keep the soakaway system free from blockage, ensure the sewers are in working condition and without leakage	Inquiry/ Observation	☐	☐	☐	
7. Ask a cleaner (name:): the appropriate handling method of cleaning articles contaminated with body fluid or blood, such as a mop or other equipment, before re-using the product. Relevant procedures shall include points 7.1 to 7.4.						
7.1	Firstly wash the contaminated cleaning article with clean water, and then remove the solid contamination from it	Inquiry/ Observation	☐	☐		
7.2	Soak the contaminated cleaning article into 1: 10 diluted bleach solution (5.25%), and leave it for 30 minutes	Inquiry/ Observation	☐	☐		(Yes: ratio of bleaching solution and disinfection duration are correct)
7.3	Then wash the cleaning article with detergent and clean water	Inquiry/ Observation	☐	☐		
7.4	Only re-use the cleaning article after it dries completely	Inquiry/ Observation	☐	☐		

8. Ask a cleaner (name:): the environmental disinfection method during an outbreak of infectious disease. Relevant procedures shall include points 8.1 to 8.3.						
8.1	Clean and disinfect furniture, floor and toilets with 1:100 diluted household bleach; wait for 15 to 30 minutes, then rewipe with clean water and wipe dry. Special attention should be given to washrooms, kitchen and frequently touched surfaces like lighting switches, doorknobs and handrails	Inquiry	☐	☐		(Yes: ratio of bleaching solution and disinfection duration are correct)
8.2	Use disposable towel/ tissue paper for initial cleaning of surfaces contaminated with vomitus or excreta, and then disinfect according to the abovementioned steps	Inquiry	☐	☐		(Yes: use of disposable towel/ tissue papal for initial cleaning)
8.3	Use 70 % alcohol to clean surfaces of which bleach is not appropriate for disinfection (e. g. metal surface)	Inquiry	☐	☐		
9. Disease prevention materials supply and management						
9.1	The facility has stored sufficient quantity of disease prevention materials for one month use according to the requirement of Health ureau and Social Welfare Bureau. In-stock: Surgical mask: _____ pcs Disposable protective coverall: _____ sets Disposable apron: _____pcs Gloves: _____ pairs Cap: _____ pcs Shoe cover: _____pairs	Observation/ Inventory check	☐	☐		
9.2	In case of any change to the inventory list, the facility shall update at once and keep the latest status in record	Inquiry/ Observation	☐	☐		
10. Management and cleaning of special purpose vehicle(s)						
10.1	Clean and disinfect the special purpose vehicle(s), including the compartments, handrails and seats, at least once a day with 1:100 household bleach (5.25%)	Inquiry	☐	☐	☐	(Not applicable: with no special purpose vehicles)
10.2	Alcohol hand rub, face masks, tissue paper, airsick bags and rubbish bags have been made available on the vehicle(s)	Observation	☐	☐	☐	(Not applicable: with no special purpose vehicles)

Suggestion / Supplementary information:

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