



GUIDELINE FOR CLEANING AND DISINFECTION OF GENERAL WORKPLACES DURING AN INFECTIOUS DISEASE OUTBREAK OF PUBLIC HEALTH CONCERN

**MINISTRY OF HEALTH
BRUNEI DARUSSALAM**

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1. Common Respiratory Illnesses

1.1 Influenza-like Illness

Influenza-like illness (ILI) is a non-specific respiratory illness. Respiratory pathogens that may present with an ILI include viruses such as Influenza virus, Respiratory Syncytial virus (RSV), Adenovirus, Rhinovirus and Parainfluenza virus, as well as bacterial pathogens such as *Chlamydia pneumoniae*, *Legionella* species, *Mycoplasma pneumoniae* and *Streptococcus pneumoniae*. Influenza, RSV and certain bacterial infections are particularly important causes of ILI because they can lead to serious health complications. Clinical features of ILI are unexplained fever $\geq 38^{\circ}\text{C}$ and respiratory symptoms of cough and/or sore throat, muscle pain and headache. The incubation period is typically 1-5 days. The route of transmission is via droplets of respiratory secretions from person-to-person. Spread can also occur through direct person-to-person contact or through fomites.

1.2 Avian Influenza

Avian influenza viruses belong to Influenza Type A viruses. They are known to previously infect birds only; however, cross species infections have since been documented in poultry and humans. Clinical features are similar to human Influenza. However, it can run a more rapid downhill course resulting in high fever, lung infection, respiratory failure, multi-organ failure, and even death. The route of transmission is from infected live birds to man. Transmission between humans has been documented to be inefficient.

1.3 Severe Acute Respiratory Syndrome (SARS)

Severe Acute Respiratory Syndrome (SARS) is a viral respiratory infection caused by a coronavirus (SARS-CoV). The initial symptoms are typically influenza-like i.e. high fever ($\geq 38^{\circ}\text{C}$) associated with chills, rigors, headache, malaise, muscle pain or even diarrhoea. At the onset of illness, some individuals may have only mild respiratory symptoms. After a few days, symptoms of lower respiratory tract infection may follow, including cough without sputum and difficulty in breathing. In around 10% of individuals, the illness may rapidly progress to respiratory failure requiring intensive medical care. Symptoms can be more variable among the elderly. Symptoms usually appear within 2 to 7 days after

contracting the illness, but the incubation period can be up to approximately 10 days. The mode of transmission is predominantly through close person-to-person contact, particularly via respiratory droplets produced when an infected person coughs or sneezes. Droplet spread can take place when droplets from the cough or sneeze of an infected person are propelled a short distance and deposited on the mucous membranes of the mouth, nose or eyes of persons who are nearby. The virus can also spread when a person touches a surface or object contaminated with infectious droplets and then touches his or her mouth, nose or eyes.

2. Preventive Measures to Minimise Risk of Disease Transmission

2.1 General workplace practices

- Maintain good personal and environmental hygiene.
- Provide surgical mask (for symptomatic staff or visitors) and hand sanitiser at atrium/lobby area.
- Suspend group/assembling activities.
- Advise sick staff to refrain from coming to work until fully recovered.
- Use of technology for meetings or for communication, as opposed to face to face meetings, are encouraged. Work from home may also be a suitable option.

2.2 Hand Hygiene

- Handwashing is important in preventing spread of infection.
- Mild liquid soap should be available at all times. Liquid soap dispensers should be fitted in preference to soap bars. Antiseptic soaps are not necessary as they may irritate some skin types.
- Paper towels or hand dryers should be available near hand basins for drying hands. Communal cloth towels should not be used.
- Alcohol-based hand rubs may be used as an alternative; however, the safety aspects i.e. flammability and adverse skin reaction, should be considered before use. It is recommended that alcohol-based hand rubs contain a minimum of 70% alcohol as this

amount has been proven to be effective in significantly reducing germs. Hand rubs should only be used when soap and water are not available. Hand rubs are not to be used if hands are visibly soiled with dirt or other contaminated material e.g. blood, vomit, faeces, urine etc.

2.3 Respiratory Hygiene/ Cough and Sneeze Etiquette

- Cover mouth and nose when coughing or sneezing.
- Use tissue paper to contain respiratory secretions and dispose them promptly in lidded dustbins.
- Perform hand hygiene after hands have been in contact with respiratory secretions.
- Provide surgical masks to persons with respiratory symptoms, especially during an infectious disease outbreak.
- Encourage persons with respiratory symptoms to sit away from others, ideally >1 metre (or 3 feet).
- Isolate sick staff at a designated area (e.g. sick bay) and send home. Advise to seek medical attention at their nearest health centre.

2.4 Cleaning and Disinfection

- Cleaning using detergent and water are effective in removal of dirt particles and impurities on surfaces or objects. Cleaning does not kill microorganisms.
- Disinfection works by killing microorganisms on surfaces or objects. In order for a disinfectant to work properly, a dirty surface should first be cleaned with detergent and water.
- Cleaning and disinfection should be carried out more frequently during an infectious disease outbreak particularly general public access areas such as lifts, toilets, pantries, bin areas, as well as areas with high human contact such as counters where customers are served, chairs in common waiting areas, and rooms where visitors are hosted.
- Cleaning should start in the clean areas and progress to the dirty areas.
- Workplaces should be maintained at a reasonable standard of cleanliness.

- Ensure workstations are regularly disinfected, including equipment, based on manufacturer's recommendations. Alternatively, utilise barriers e.g keyboard covers for ease of disinfecting purposes.
- All work surfaces should be cleaned at least daily with detergent and water, and disinfectant if necessary (e.g. 1 in 99 diluted household bleach of 5.25% solution).
- Frequently touched areas such as escalator handrails, lift control panels, door knobs, light switches etc should be cleaned more often subject to the frequency of use.
- Carpets or rugs/mats should be vacuumed or steam cleaned if soiled with body fluids. Hard floor surfaces should be cleaned with wet vacuum system or damp mopping using detergent and water.
- Clean public toilets at least once a day and as when necessary especially if visibly soiled or presence of an unpleasant odour. Wipe the rim, seat and lid of toilet bowl with 1 in 99 diluted household bleach (5.25%) solution, rinse with water and then wipe dry. Clean floor drain outlets at least once a week to prevent putrid air and insects in the soil pipes from entering the premises. Pour about half a litre of water into each drain outlet regularly (about once a week) to maintain the water column in the pipe as water lock. Ensure toilets are properly ventilated to encourage fast drying.
- Cleaning supervisors should undertake regular monitoring to ensure that hygiene standards are strictly observed.

2.5 General Ventilation

- Conduct regular maintenance of ventilation system. Proper inspection, cleaning, testing and maintenance schedules should be drawn up and followed.
- Air-conditioning units including filters should be cleaned or changed according to the manufacturer's instructions.
- Maintain optimum environmental temperature of 20°C-26°C and optimum humidity of 40%-70%. Provide dehumidifier units for control of humidity within the optimum range.
- Use efficient filters in ventilation units to remove airborne particulates and spores of microorganisms from the ventilation system.

- Remove potential water sources that may encourage fungal growth, especially stagnant water in ventilation systems.
- Repair and maintain all water pipes and drainage systems.
- Remove and replace contaminated porous materials, such as heavily deposited ventilation filter units, moldy ceiling tiles and mildewed carpets.
- Disinfect all smooth surfaces (such as wall tiles) that have been contaminated by fungi.

3. Use of Disinfectants: Alcohol and Bleach

Different countries have different disinfection protocols. Where there is limited resources or access to disinfectants, bleach and alcohol are acceptable chemical disinfectants if used appropriately. As with any other disinfectants, soiled surfaces need to be cleaned with water and detergent first.

3.1 Alcohol

Alcohol is effective against influenza virus. Ethyl alcohol (70%) is a powerful broad-spectrum germicide and is considered generally superior to isopropyl alcohol. Alcohol is commonly used to disinfect small surfaces of clinical instruments in healthcare facilities (e.g. rubber stoppers of multiple-dose medication vials, thermometers) and occasionally external surfaces of larger equipment e.g. stethoscopes, ventilators. As alcohol is flammable, its use as a surface disinfectant is limited to small surface areas and in well-ventilated spaces only. Prolonged and repeated use of alcohol as a disinfectant can also cause discolouration, swelling, hardening and cracking of rubber and certain plastics.

3.2 Bleach

Bleach is a strong and effective disinfectant. Its active ingredient, sodium hypochlorite, is effective in killing bacteria, fungi and viruses, including influenza virus, but it is easily inactivated by organic material. Diluted household bleach disinfects within 10-60 minutes' contact time, is widely available at a low cost, and is recommended for surface disinfection. However, bleach irritates mucous membranes, skin and respiratory airways; decomposes under

heat and light; and reacts easily with other chemicals. Therefore, bleach should be used with caution; ventilation should be adequate and consistent with occupational health and safety guidance. Improper use of bleach, including deviation from recommended dilutions (either stronger or weaker), may reduce its effectiveness for disinfection.

Procedures for the preparation and use of diluted bleach includes:

- Use a mask, rubber gloves and waterproof apron; goggles are recommended to protect the eyes from splashes
- Mix and use bleach solutions in well-ventilated areas
- Mix bleach with cold water (Note: hot water decomposes sodium hypochlorite and renders it ineffective)
- If using bleach containing 5% sodium hypochlorite, dilute it to 0.05%

References

- (i) Guidelines for Cleaning and Disinfection Procedures for Hotels and Residential Institutions for Infectious Disease of Public Health Concern, 2020. Disease Control Division, Ministry of Health, Brunei Darussalam.
- (ii) Guidelines on Infection Prevention and Standard Precautions for Cleaning and Disinfection Procedures in Schools and Childcare Settings during an Infectious Disease Outbreak, February 2020. School Health Services, Health Promotion Centre, Ministry of Health, Brunei Darussalam.