



**MINISTRY OF HEALTH
SINGAPORE**

INFLUENZA PANDEMIC PREPAREDNESS

**GUIDE ON
INFECTION CONTROL MEASURES
FOR WORKPLACES
(NON- HEALTHCARE)**

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INTRODUCTION

1. This booklet provides guidelines on infection control measures and practices that can be implemented in the workplace to limit the spread of influenza, as well as other infectious diseases with similar transmission mechanism via close contact and large respiratory droplets. These guidelines can be incorporated into the existing business continuity plans of organisations. Depending on the specific transmission characteristics of the disease, the Ministry of Health (MOH) will review the measures and issue directives and advisories when appropriate.

NATURE OF THE DISEASE (INFLUENZA)

2. Influenza and the majority of viral diseases that affects the upper respiratory tract have similar modes of transmission:

a. Large droplet spread. When an infective person coughs or sneezes, droplets containing viruses will be produced. A person at close contact (1-2m) may then breathe in the droplets and be infected.

b. Contact, either direct or indirect, with respiratory secretions. The disease is spread when a person's hands come in contact with nasal secretions from an infected person and he subsequently touches his mouth, nose or eyes through which the viruses gain entry to the body and produce a new infection. Handling household articles that have been in contact with an infected person or an infected person's secretions may sometimes spread the disease. Studies have shown that influenza virus can survive on environmental surfaces and can infect a person for up to 2-8 hours after being deposited on the surface.

c. Transmission through droplet nuclei, i.e. airborne spread, is possible, but less likely. Droplet nuclei are very small particles that stay suspended in the air for longer period, and therefore could spread diseases without close physical contacts. As sneezing, coughing and even talking can produce droplets of wide variety of particle sizes, it is conceivable that droplet nuclei may be formed. However for influenza, this mode of transmission is not well documented.

3. **Infectious period.** Unlike SARS where a person is infectious after the onset of symptoms, influenza cases can be contagious one day before the onset of symptoms. Infected persons with minimal symptoms may still shed the virus and be infectious. It is thought that up one third of all persons infected by influenza will be asymptomatic, though infection in young children is usually symptomatic. This "silent transmission" characteristic of influenza infection reduces the effectiveness of some of the measures listed below. Nevertheless, as the amount of virus shed is related to how ill a person is, the control measures are still useful to screen out those who are obviously ill and who are the most infectious.

ACTIVATION OF BUSINESS CONTINUITY PLAN (BCP)

4. As the DORSCON Alert codes provide a mechanism for risk management by describing the risk of acquiring an infectious disease. (Please refer to **Annex A** for definition of DORSCON-FLU Alert levels), the Alert levels should be used as a gauge as to when an organisation will activate their business continuity measures and adopt infection control measures at the workplace in line with the advisories on public health measures that will be issued by the MOH.

INFECTION CONTROL MEASURES FOR WORKPLACES (NON HEALTHCARE) - AT MANAGEMENT LEVEL

5. This section describes suggested issues that the management may wish to address in its plans and infection control measures that it can adopt at the workplace. A summary of the suggested preparations and activities in response to various risk levels i.e. Alert codes to reduce the risk of transmission at the workplace is attached at **Annex B**.

a. Advisories/ Updates and Public Health Measures

(1) Organisations should disseminate disease information, the outbreak situation and MOH-issued health and travel advisories to their staff during an influenza pandemic. As additional information on the disease may become available as the situation evolves, updates and additional advisories will be provided on the MOH website at <http://www.moh.gov.sg/>. Hence, organisations should check the website for latest advisories and situation updates and advise staff to take heed of the advisories.

(2) The MOH's national influenza pandemic response plan is available at the MOH website. Organisations will find information in the plan, such as the planning assumptions and public health measures helpful when developing their own BCP and infection control management plan.

b. Determine Staff Management Policies.

Relevant staff management policy regarding dealing with absenteeism due to Home Quarantine Orders (HQO), workplace closure, sick leave, etc, overseas travel and recall of non-critical staff and families from affected countries should be determined beforehand.

c. Communications.

Supervisors and work managers should:

(1) Educate staff on the disease and the mode of transmission. Update them on changes in DORSCON Alert Codes, travel & health advisories, and relevant staff policies.

Brief them on the need for infection control measures and the preventive procedures that have been set in place. This will enable staff to assist in sharing the procedures with clients and visitors.

(2) Inform visitors and clients early on the preventive measures to avoid misunderstanding. The health advisory should be prominently displayed for visitors to see.

(3) Encourage their employees to practise good hygiene in the workplace. (Please refer to paragraph 7b).

(4) Advise their employees not to come to work when they are feeling unwell. Unwell employees should also be advised to see a doctor. (Organisations may also consider mandatory sick leave or separation of sick from well employees during a pandemic).

(5) Organisations may wish to develop a communications plan to deal with possible quarantine action e.g. staff placed on HQO.

d. Temperature Checks for Staff

(1) Implement regular temperature checks and monitor of staff for symptoms of influenza (in line with advisories from the authorities at that point in time). It is currently recommended to be implemented from DORSCON Alert Orange onwards. Organisations may need to provide staff with thermometers for the individual checks and may include supervisor's verification of the temperature checks if needed. Staff who are unwell should be directed to seek medical help. (Please refer to later section on "Recommended Management of an Employee with Symptoms Suggestive of Influenza"). Staff should also be advised to screen themselves for symptoms before coming to work. Those who are sick should not come to work and comply with staff policy (e.g. mandatory sick leave, etc)

(2) A video on the use of thermometers can be viewed/downloaded from the MOH SARS website at the URL <http://www.moh.gov.sg/mohcorp/diseases.aspx?id=13090#video> Although the video was produced for use during SARS, the principles are the same.

e. Temperature Checks for Visitors and Recording of Visitor Details

(1) Implement temperature checks for visitors and record visitor details (in line with advisory from the authorities at that

point in time). It is currently recommended to be implemented from DORSCON Alert Orange onwards.

(2) Record information of all visitors¹, including date and time of visit, name of visitor, IC number, telephone number and the location/meeting room he/she will be going to for contact tracing purpose². The temperatures of all visitors should be checked. Anyone with flu-like symptoms (e.g. fever, cough and runny nose) should not be allowed into the facility and advised to seek medical assessment/ treatment.

(3) Staff carrying out temperature screening of visitors should don N95 masks. This should be combined with frequent handwashing, especially after touching body secretions and after removing gloves (if worn). To minimise body contact, workplaces can use thermal scanners. Disposable ear thermometer covers should be used, if using ear thermometers. Otherwise, it should be disinfected between use (e.g. use of disinfectant wipes).

f. **Staff with Travel History.**

Staff may have traveled to the countries that have been affected by the disease. In such instances, the following can be carried out:

(1) **Voluntary home quarantine.** Advise the staff not to report for work/ go on voluntary home quarantine for 1 incubation period/ 7 days (or as advised by MOH). The organisation is to decide on the leave and cover arrangements.

(2) **In house phone surveillance.** Check on his/her health status by phone during his/her absence from work. This will facilitate treatment if the staff becomes symptomatic.

(3) The staff should complete the time duration and is well before the management allows them to return to work.

(4) It should be implemented in line with advisory from the authorities at that point in time. It is currently recommended to be implemented from DORSCON Alert Orange onwards.

¹ It also applies to contractors, suppliers and others.

² Contact tracing will be carried by the authorities as long as operationally feasible.

g. Use of 993 Dedicated Ambulance Service.

The 993 dedicated ambulance services will be made available to members of public before (DORSCON Alert Yellow) and/or during the early stages of an influenza pandemic till it is no longer operationally feasible to do so. When available, organisations should make use of the service to transport symptomatic employees to the designated treatment facility for medical assessment/ treatment.

h. Recommended Management of an Employee with Symptoms Suggestive of Influenza.

Organisations should put in place procedures to manage staff who become ill at work. The procedures should be implemented in line with advisories from the authorities. Health advisory will be issued at the point in time on the symptoms of the disease, relevant contact and where applicable, travel history.

(1) In the event supervisors or work managers observe or receive a report of an employee who is unwell, the unwell person should be:

(a) Isolated and moved to a room or area away from other people.

(b) Advised to use only the toilet facility designated for him/her (if possible).

(c) Provided with a surgical mask to wear in order to reduce the amount of droplets coughed into the air. Masks should be changed if they become wet, hard to breathe in, physically damaged or visibly soiled.

(d) Advised to cover his/her mouth and nose with tissues when coughing or sneezing if a surgical mask is not available.

(2) In addition, the management should keep the number of staff attending to the ill person to a minimum. Staff attending to the ill person should wear N95 masks³ and disposable gloves.

(3) Generally, the 993 dedicated ambulance service will be made available to the public from DORSCON Alert Yellow onwards. If the 993 dedicated ambulance service has not been made available to the public, the ill person seek medical attention from a GP clinic or polyclinic. He/ She should inform the doctor of relevant contact and/or travel history. If necessary, the

³ Please follow manufacturer's instructions on the proper use of N95 masks. N95 masks should be discarded after attending to each person suspected to have pandemic influenza.

GP or polyclinic staff will make use of the dedicated ambulance service to transport the patient to the designated healthcare facility for further assessment / admission as appropriate.

(4) If the 993 dedicated ambulance service has been made available to the public, the management should call **993** to request for an ambulance to transport the ill employee/ person to the designated healthcare facility for assessment.

(5) The management should take down the names and contact details (IC number, address, telephone number) of all persons who have come into contact with the employee when he/she was symptomatic. If the ill employee is confirmed to have the disease, MOH officers will contact the organisation to trace all those who came into contact with him/her and advise on which employees would need to be quarantined (at Alert YELLOW onwards for as long as operationally feasible) or put on phone surveillance (at Alert GREEN Level 1).

(6) A guide on contact tracing to assist the organisation in carrying out contact tracing (Guide to Institution Contact Tracing) is at **Annex C**. MOH will cease home quarantine and phone surveillance measures when it is no longer feasible because of the large numbers. However, organisations may wish to continue to implement home quarantine on a voluntary basis and in-house phone surveillance.

(7) At Alert YELLOW onwards, close contacts with sustained and unprotected exposure will be given anti-virals as post-exposure prophylaxis (for 10 days) as a precaution. This will be continued at Alert RED for as long as operationally feasible.

(8) Cleaning and disinfection of the areas the suspect case has been to have to be carried out. Please refer to section on “Cleaning and Disinfection of Areas Exposed to Suspect Case”

i. **Environmental Cleanliness.** Organisations should maintain environmental cleanliness to minimise transmission of the virus through environmental surfaces. Studies have shown that influenza viruses can survive on environmental surfaces and can infect a person for up to 2–8 hours after being deposited on the surface. Cleaning frequency should be increased. The guidelines are:

(1) **Cleaning of Work Area**

(a) All office space, common facilities e.g. toilets, conference rooms, multi-purpose halls etc should be cleaned daily.

(b) Environmental / frequently touched surfaces (e.g. chairs, table, door knobs, windows, sofas, etc) should be washed/wiped with 1:50 diluted household bleach. (i.e. sodium hypochlorite 0.1% or 1000 ppm⁴).

(c) 70% alcohol can be used to wipe down surfaces where use of bleach is not suitable e.g. metal.

(d) Soiled surfaces should be cleaned with water and detergent before applying alcohol and bleach.

(2) Cleaning Crews

(a) Cleaning crews should be aware of the symptoms and should report to their occupational health service if they develop symptoms.

(b) Disinfect cleaning equipment used in one room before using for other rooms.

(c) Disinfect buckets with fresh disinfectant solution or rinse in hot water before filling.

(d) Rinse wiping cloths/ mop in disinfectant several times or rinse thoroughly in hot water.

(e) Cleaning personnel should wear disposable gloves while cleaning the area.

(f) Gloves should be removed and discarded if they become soiled or damaged.

(g) Cleaning crews should wash hands after carrying out cleaning/ disinfection to minimise risks of transmission.

(3) Cleaning and Disinfection of Areas Exposed to Case

(a) When a suspected case was in the premises, the management should seal (where possible) the areas where the person has been and arrange for immediate cleaning and disinfection. There is no need for special cleaning or disinfection of other areas. Routine cleaning of these other areas can be carried out without additional PPE than what is usually used.

⁴ ppm – parts per million

(b) When cleaning areas where a suspected case has been, cleaning crews should:

(i) Wear disposable gloves, disposable gowns and an N95 mask. Avoid touching the nose and mouth (goggles may help as it will prevent hands from touching eyes). Gloves should be removed and discarded if they become soiled or damaged and a new pair worn. All other disposable PPE should also be removed and discarded after cleaning activities are completed. Goggles, if used, should be disinfected according to manufacturer's instructions.

(ii) Wash their hands with soap and water immediately after the PPE are removed and when cleaning is completed.

(iii) Keep cleaning equipment to the minimum.

(iv) Open window for ventilation.

(v) Mop floor with sodium hypochlorite 0.1% (1000ppm)⁴.

(vi) Wipe all frequently touched areas (e.g. doorknobs, armrests, seatbacks, tables, air/light controls, keyboards, switches etc) and lavatory surfaces with chemical disinfectants (use according to manufacturer's instructions) and allowed to air dry. Sodium hypochlorite 0.1% (1000ppm) solution can be used. 70% alcohol can be used for surfaces where use of bleach is not suitable. Soiled surfaces should be cleaned with water and detergent before applying alcohol and bleach.

(vii) Wipe down walls up to 3m in height as well as blinds with disinfectant.

(viii) Remove curtains for washing.

(ix) Disinfect cleaning equipment used in one room before using for other rooms.

(x) Disinfect buckets with fresh disinfectant solution or rinse in hot water before filling.

(xi) Rinse wiping cloths/mops in disinfectant several times or rinse thoroughly in hot water.

(xii) Disinfectants should be applied to surfaces using a damp cloth. They should not be applied to surfaces using a spray pack, as coverage is uncertain and spraying may promote the production of aerosols. The creation of aerosols caused by splashing liquid during cleaning should be avoided. A steady sweeping motion should be used when cleaning either floors or horizontal surfaces to prevent the creation of aerosols or splashing. Cleaning methods that might re-aerolize infectious material, such as the use of compressed air, must not be used.

(xiii) Avoid using the room for the following morning or afternoon sessions.

j. **Personal Protective Equipment (PPE).** The following guides on the use of PPE (e.g. N95 masks, disposable gloves and gowns) should be observed.

(1) When using masks,

(a) Masks are effective if worn according to instructions and properly fitted. Users of N95 masks need to undergo a mask fit test (normally carried out by supplier) to ensure proper fit.

(b) Repeated adjusting of mask while wearing can be a cause of infection due to contamination of hands with droplets gathered on the mask.

(c) Mask should be discarded and changed if it becomes physically damaged.

(d) Users should be monitored for dizziness, difficulty in breathing and skin irritation.

(e) The mask should be disposed of as with other biohazard wastes.

(f) The person should wash his hands with soap after disposing the mask.

(g) Avoid touching the nose and eyes which can be routes of infection.

(2) Discard all disposable items in a bag securely sealed and labeled.

(3) Hands should be washed with soap and water or alcohol-based hand sanitizers immediately after gloves are removed.

(4) A training video on the donning and removal of PPE (disposable gloves, N95 masks, disposable gowns) can be viewed/ downloaded from the MOH SARS website at the URL <http://www.moh.gov.sg/mohcorp/diseases.aspx?id=13090#video>

Although the video was produced for use during SARS, the principles of using PPE are the same.

k. **Ensure Supply of Critical Items.** The organisation should determine the type and quantity of critical items for infection control it will require and ensure supply of these critical items that may be hard to get during a pandemic (e.g. masks, disinfectants). If not possible, it should consider stockpile the critical items.

l. **Increasing Social Distance.** It would be useful to ensure that offices try to increase the social space between co-workers and with visitors. Any measure that achieves this would minimize transmission of the disease. Examples are:

(1) **Dividing staff into work teams.** Where office workflow permits, organisations can consider dividing their staff into work teams. Each team should, where possible, avoid contact with the other teams.

(2) **Telecommuting.** Similarly, organisations can consider the feasibility of telecommuting and allow their staff to work from home.

(3) **Others.** Other ways are:

(a) Avoid meeting people face-to-face. Use other means to carry out discussion, business.

(b) If people have to meet, advise staff to maintain a distance of at least 2 metres (or as advised by MOH) from visitors/ colleagues, if possible. Whenever possible, choose a larger venue or meeting room where is possible to maintain this distance.

(c) Introduce staggered lunch hour to reduce crowding of staff cafeterias.

(d) Use of systems where customers/clients can pre-order/ request information via phone, mail/fax and prepare requested items ready for fast pickup or delivery.

(e) Advise staff to avoid activities even outside the workplace where they may be exposed to infected persons e.g. avoid crowded places, large gatherings, curtail social activities such as social visiting.

INFECTION CONTROL MEASURES FOR WORKPLACES (NON HEALTHCARE) - FOR INDIVIDUALS

6. This section describes some measures/ actions that staff or individuals can do to minimise potential transmission at the workplace.

a. Be aware of the symptoms of the disease and how it is transmitted.

b. Individuals or staff at the workplace should practise basic personal hygiene to minimise potential influenza transmission:

(1) Do not spit on the floor or ground.

(2) Wash hands

(a) Regularly and thoroughly with soap and water

(b) Before and after preparing food

(c) After going to the toilet

(d) Before and after eating

(e) After blowing their nose

(f) After coughing and sneezing

(g) After removing personal protective equipment (PPE).

(3) Sneezing and coughing should be done into tissues which should be then be carefully disposed of.

(4) Avoid shaking hands.

(5) Avoid sharing of cups, cutlery, etc.

c. Be responsible for cleanliness of own workspace.

d. Comply with health and travel advisories, company and staff directives issued (e.g. to monitor your temperature, health)

e. Practise social distancing measures at work as implemented or recommended by the organisation. Where recommended, staff should also comply with social distancing measures outside the workplace (e.g. avoid crowded places, large gatherings, curtail social activities such as social visiting).

f. If you have been requested by your organisation to carry out temperature screening for visitors, comply with directions on use of PPE and other hygiene measures to avoid cross contamination.

g. Be aware of DORSCON Alert levels and corresponding public health responses during disease outbreaks.

CONCLUSION

7. This booklet provides a guide to the general measures that the management and staff/ individuals at organisations can carry out to limit transmission in the workplace. The infection control measures should be implemented in line with MOH or authorities' advisories issued at the point in time.

