PUBLIC HEALTH PREPAREDNESS CLINIC GUIDE

Updated in June 2017
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CHAPTER 1: OVERVIEW

Overview of Public Health Preparedness Clinic Scheme

1. The Public Health Preparedness Clinic (PHPC) scheme consolidates the primary care clinic response to public health emergencies such as influenza pandemic, haze and anthrax outbreak into a single scheme for better management. The Haze Subsidy Scheme (HSS) has also been subsumed under the PHPC scheme. While the specific roles of the PHPC may differ in different threats, the general function of the PHPC remains the same, which is to serve the primary healthcare needs of Singaporeans in times of national need.

2. A consolidated engagement of the primary care clinics for the different public health emergencies under one scheme facilitates more timely communications and provides greater clarity for the PHPCs, avoiding the need for a new scheme every time a new threat arises. Having a common scheme also allows patients to easily identify primary care clinics on the PHPC Scheme that meet their primary healthcare needs both during peacetime and when there is a public health emergency. As PHPCs are also required to be on the Community Health Assist Scheme (CHAS) and by extension, the Chronic Disease Management Programme (CDMP) as well, eligible patients will have access to CHAS subsidies for treatment during a public health emergency.

3. During public health emergencies, PHPCs will provide medications/vaccinations and administer subsidised treatments to eligible patients as appropriate. For novel pathogens such as SARS and MERS-CoV, all primary care clinics (not just PHPCs) will be responsible for screening patients and referring them to the hospitals.

Role of PHPCs

4. PHPCs will be required to perform one or more of the following roles when activated during a public health emergency:
   a. Dispense medications (e.g. anti-viral, antibiotics).
   b. Administer vaccines (e.g. for influenza).

5. PHPCs will be promptly notified of their activation via SMS and circulars, and informed of their roles for that particular activation. As far as possible, information will be disseminated in advance to PHPCs to keep them updated of developments, and allow them lead time for preparation.

MOH Support

6. Logistical support (e.g. personal protective equipment and prophylaxis for staff) will be provided to PHPCs to ensure that the doctors and clinic staff are adequately protected. Priority for pharmaceuticals and vaccine supply from the national stockpile will also be given to PHPCs. During peacetime, training will be made available to PHPCs to help prepare them to be able to perform their roles during public health emergencies.

7. The support from MOH is in Table 1a:
Table 1a: Support from MOH to PHPCs

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Personal Protective Equipment (PPE)</td>
<td>Up to 12 weeks’ supply of PPE for staff at no cost.</td>
</tr>
<tr>
<td>Medications and Vaccines</td>
<td>For staff prophylaxis, up to six weeks’ supply of influenza antivirals at no cost. For patient treatment, priority to receive appropriate antivirals, antibiotics and/or vaccines from the national stockpile. PHPCs may also choose to procure the anti-virals, antibiotics and/or vaccines from commercial sources.</td>
</tr>
<tr>
<td>Training/ Refresher</td>
<td>Guidelines, e-learning course and workshops, etc. to enable PHPC doctors and staff to familiarise themselves with MOH’s guidelines, build up skillsets and maintain skills currency.</td>
</tr>
</tbody>
</table>

Eligibility

8. To participate in the PHPC Scheme, primary care clinics must meet the following requirements:
   a. The clinic must have at least one practising GP and should provide primary care.
   b. The clinic must be enrolled in CHAS.
   c. The GP must be accredited under the CDMP framework.
CHAPTER 2: PUBLIC HEALTH PREPAREDNESS CLINIC RESPONSE FRAMEWORK

Operational Concept

1. Primary care clinics manage the bulk of the national primary care caseload during peacetime and should continue to play their usual important role in primary care during a disease outbreak. This will help limit unnecessary movement of patients which reduces the likelihood of spreading the infection in the community.

2. In the event of a public health emergency, MOH will provide timely situational updates to all healthcare institutions and registered medical practitioners, and coordinate the public health measures. An assessment of the threat and impact to public health will be made, which will include the clinical assessment and extent of public health threat. Medical directives on case management and infection control measures to undertake in healthcare institutions will be issued, where necessary. Through the media, the public will be advised to go to any PHPC for assessment and/or treatment as needed. Severe cases will be referred to the hospitals for further treatment.

3. PHPCs will continue to provide care to all patients, with strict infection control measures in place. To cope with the potential increase in caseload arising from the public health emergency, it is recommended that chronic sick patients with stable conditions be provided with 3-6 months’ supply of medication and advised to seek consultation only if ill.

4. In the event of haze, the HSS may be activated to provide subsidised treatment for haze-related conditions for eligible Singapore Citizens.

Logistics Supply

5. According to the Licensing Terms and Conditions under the Private Hospitals and Medical Clinics Act (PHMC Act), all GP clinics (including PHPCs) are required to have a baseline stockpile of one week’s supply of PPE during peacetime.

6. Doctors and clinic staff of PHPCs will be provided with additional protection during public health emergencies involving infectious diseases. The provision from MOH would include:
   a. PPE supply for up to 12 weeks for staff at no cost.
   b. In an influenza pandemic, anti-viral prophylaxis supply for up to six weeks for staff at no cost.
   c. Priority to receive anti-virals, antibiotics and/or vaccines from the national stockpile for patient treatment.

Communications

7. PHPCs will be activated by MOH through circulars and/or SMS. Contact details will be provided in these circulars/SMS for PHPCs to seek clarifications as needed. The Agency for Integrated Care (AIC) will also assist to alert PHPCs through SMS and email before the actual activation. PHPC should regularly update their contact details to AIC by email (GP@aic.sg).
8. Where a decision has been made to stand-down the activation, MOH will inform PHPCs through circulars. AIC will likewise alert PHPCs through SMS and email.

9. MOH strongly encourages PHPCs to regularly update their contact details in MOH Alert through the Singapore Medical Council website, as the public health emergency may evolve quickly. Updating the contacts in MOH Alert would allow PHPCs to receive alerts via SMS to access the circulars through the web or through email.

Public and Crowd Management

10. During a public health emergency, MOH will work with the Ministry of Communications and Information (MCI) and Health Promotion Board (HPB) to develop the media packages to educate and guide the public on the national response and the primary healthcare framework. MOH will coordinate with the media agencies to ensure effective public communications to provide timely updates to the public, to maintain their trust and confidence in the healthcare system.

11. Larger than usual numbers of persons seeking medical treatment may be expected during a public health emergency. PHPCs will need to modify their clinic workflow and processes as describe in Chapter 3 to manage the crowd effectively and carry out their operations smoothly.

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1 MOH Alert is a notification system designed in collaboration with the Professional Boards to enable all healthcare professional to receive instant and easy access to MedAlert, DrugAlert and MedInfo messages and circulars.
CHAPTER 3: ORGANISING A PHPC DURING AN INFLUENZA PANDEMIC

General Principles

1. PHPC will continue to treat both influenza-like illness (ILI) and non-ILI patients. PHPCs will need to prepare to manage larger than usual crowds, and focus on reducing the risk of cross transmission of pathogens within the clinic.

2. Patients and staff need to be protected, and it is necessary to adopt stringent infection control practices including use of PPE, and modifying the clinic workflow and work processes to effectively segregate suspected ILI patients from the non-ILI patients, where possible.

3. Scheduling of clinic hours for ILI patients, or scheduling appointments/ consultations for chronic patients apart from acute and ILI patients where possible is also strongly recommended. This would allow for segregation of patients, and would be especially relevant for clinics that do not have separate consultation rooms.

4. This chapter provides a generic structure of a PHPC. All PHPCs will need to apply the principles of the different purposes to fit the constraints of their own premises.

Functional Areas

5. In an influenza pandemic, it is recommended that PHPCs should have the following work areas:

   a. Screening Counter.
   b. ILI and Non-ILI Patient Waiting Areas.
   c. Registration Counter.
   d. Consultation Rooms (preferably segregated for ILI and non-ILI patients).
   e. Transfer Room/Area.
   f. Dispensary and Payment Counter.

Screening Counter

6. The Screening Counter acts as a triage point for incoming patients and staff. It should ideally be located near the clinic’s entrance. The proposed furniture, equipment/consumables and supplies for the counter are as follows:

   a. Table (x1) and chairs (x2).
   b. Biohazard waste bins with lids (c/w biohazard waste bags).
   c. Step bins (c/w trash bags).
   d. Pens.
   e. Queue number tags (if required).
   f. Patient Screening forms.
   g. Plastic tray to place the fresh/ completed forms (if any).
   h. Clinical thermometers (e.g. digital thermo scan).
   i. Disposable protective sheaths (e.g. disposable ear probes).
   j. Disposable examination gloves.
   k. Surgical masks (for patients).
   l. Alcohol hand-rub disinfectant (e.g. chlorhexidine 0.5%).
   m. Surface disinfectant (e.g. bleach, alcohol wipes).
7. In the event there is insufficient manpower and/or space to set up a separate Screening Counter, the clinic’s Registration Counter can double-up as the Screening Counter. The clinic should install appropriate signage, and make available the supply surgical masks, alcohol hand-rub disinfectant, and a step bin for patient use, near the entrance.

**ILI Patient and Non-ILI Patient Waiting Areas**

8. If space allows, the patient waiting area should be segregated into two distinct areas, to ensure physical separation of 2 metres between the ILI patients and non-ILI patients. Surgical masks and alcohol hand-rub disinfectant should be made available at the ILI Patient Waiting Area. Where possible, resources and instructions for performing hand hygiene should be placed in both waiting areas, along with the alcohol hand-rub disinfectant. Step bins should be provided in both waiting areas.

9. If space is a constraint, the PHPC could explore setting up one or both waiting areas outside the clinic. However, the PHPC would need to obtain approval from the Town Council or relevant building management accordingly.

**Registration Counter**

10. The Registration Counter can be organised as in normal peacetime operations.

**Consultation Room**

11. The Consultation Room can be organised as in normal peacetime operations. Where possible, clinics should have two Consultation Rooms, for ILI patients and for non-ILI patients.

12. PHPCs with only one Consultation Room are recommended to implement separate clinic hours, or schedule appointments/consultations for chronic patients apart from ILI and acute patients where possible. Potentially contaminated surfaces should be cleaned and disinfected in between the consultation of ILI patients and non-ILI patients.

13. The Consultation Room for ILI patients should ideally have windows for open ventilation. The air-conditioner can then be switched off and windows opened when attending to the patient.

14. The furniture in the Consultation Room should allow wipe-down during cleaning. Fabric chairs are not advised. The Consultation Room should ideally have minimal linen, and no curtains. If there are curtains, the PVC type should be avoided as it is difficult to wipe down, clean or disinfect.

15. The Consultation Room should ideally be equipped with a computer with access to the internet. This would allow the doctor to key in patient information into the anti-viral reporting IT system, known as the Health Check System (HCS), when anti-viral drugs are dispensed.

**Transfer Room/Area**

16. If space allows, the clinic should designate a Transfer Room/Area to allow ILI patients awaiting transfer to hospital via ambulance to be segregated from the other patients. Patients awaiting transfer to hospital should wear a surgical mask. The proposed furniture, equipment/consumables and supplies for the Transfer Room/Area are as follows:

   a. Table (x1) and chairs (x2).
   b. Biohazard waste bins with lids (c/w biohazard waste bags).
   c. Step bins (c/w trash bags).
   d. Pens.
   e. Referral letters (to hospitals), envelopes, carbon papers.
   f. Writing note pads.
g. Ink stamps (name, date etc.).

h. Stethoscope.

i. BP set (including paediatric and adult cuffs).

j. Clinical thermometers and disposable protective sheaths.

k. Disposable examination gloves.

l. Disposable dressing sets.

m. Wooden tongue depressors.

n. Alcohol hand-rub disinfectant.

**Dispensary and Payment Counter**

17. The Dispensary and Payment Counter may double-up as the Registration Counter as in normal peacetime operations, or be located next to the Registration Counter for better coordination.

18. Suggested schematic layouts for one Consultation Room and two Consultation Room clinic configurations are provided as examples to segregate patients within a constrained space in Figure 3a and Figure 3b respectively below.

**Figure 3a: Schematic Layout for Clinic with one Consultation Room**
Work Processes

General Layout

19. The key principle in setting out the patient flow is the segregation of the ILI patients from the non-ILI patients, so as to minimise the risk of spread of infection. Attention should be paid to the following:

a. Surgical masks must be used by the ILI patients, and those in contact with them.

b. Physical separation should be implemented between the ILI and non-ILI patients, by staggering their activities wherever possible at the common areas such as the Registration and Dispensary/Payment counters.

c. Clinics with single Consultation Rooms could consider rescheduling their appointments for chronic patients while still allowing walk-ins by patients with acute conditions.

d. Clinic signage should be clear to facilitate the flow of patients. The signage could be placed at the main entrance informing patients about the influenza pandemic, and requiring those with ILI symptoms to inform clinic staff upon arrival, wear a surgical mask, observe cough etiquette, and keep a distance from the other patients. If the clinic has multiple entrances/exits, the signage may direct those with ILI symptoms to enter the clinic via a designated separate entrance.

20. The suggested schematic PHPC workflow is at Figure 3c below (see Annex A for the detailed workflow):
**Screening Process**

21. All patients and accompanying family members, and staff should be screened for ILI symptoms at the Screening Counter. Other visitors to the PHPC (including delivery, dispatch personnel, etc.) should be received outside the PHPC. The clinic staff assigned to the Screening Counter should perform the following tasks:

   a. Wear full PPE which includes N95 mask, isolation gown and examination gloves.

   b. Inform all staff and patients that it is compulsory to have their body temperature taken prior to entry into the clinic, and ensure that temperature taking is conducted.

   c. Screen every patient for ILI and fever, and record their temperature.

   d. Assist/facilitate the patient to complete the Screening Record (see Annex B for a sample. Clinics can also use their existing forms, so long as all the required data are captured). Clinic staff should ensure that contact information in the Screening Record is duly completed for community contact tracing purposes.

   e. Issue ILI patients with surgical mask and advise them on its use. ILI patients will need to be ushered to the ILI Patient Waiting Area.

   f. Usher non-ILI patients to the non-ILI Patient Waiting Area.

   g. Hand the completed Screening Record to the Registration Counter for registration.

**Registration Process**

22. Registration process may function as in normal peacetime. However, priority should be given to patients in the ILI Patient Waiting Area. Registration can commence based on the details provided in the patient Screening Record.
Consultation Process

23. Where possible, ILI patients should be physically segregated from the non-ILI patients. Clinics with only one Consultation Room should implement strict infection control measures to reduce the possibility of cross infection. Clinics could consider rescheduling their consultations for chronic patients while still allowing walk-ins by patients with acute conditions.

24. For clinics with two or more Consultation Rooms, the rooms should be designated for ILI patients and non-ILI patients. If the clinic has two or more doctors, then one doctor could be assigned to each Consultation Room. If there is only one doctor, the doctor will need to move between the two Consultation Rooms. Doctors and clinic staff need to wear full PPE and adopt the necessary infection control measures.

25. In general during an influenza pandemic, all ILI patients will receive treatment with anti-viral drugs if indicated. Doctors should assess all ILI patients for recent prescriptions of anti-viral drugs through the HCS, as there may be high demand for anti-viral drugs and patients may seek a second prescription from another clinic. Please see Annex C for the user guide to HCS.

26. Patients who have received anti-viral treatment for influenza within a specified period (as determined by MOH) should not receive a second prescription. PHPCs are required to log (report) all anti-viral prescriptions with MOH via HCS.

27. When the pandemic vaccines become available, PHPCs should administer the vaccines.

28. MOH will advise on the dosage, contraindication, potential side effects, etc. for anti-viral and vaccines through circulars upon activation of the PHPC scheme.

Dispensing and Payment Process

29. The Registration Counter staff may double up to man the Dispensing and Payment Counter as in normal peacetime operations. Upon completion of the consultation process, medications will be dispensed to the patient as per the doctor’s prescription.

30. For ILI patients accompanied by family members, medications can be collected and payments made by the family members on behalf of the patient. For ILI patients not accompanied by family members, they should remain in the ILI Patient Waiting Area. Clinic staff should assist the patients to collect medications and make payment at the ILI Patient Waiting Area.

Exiting the PHPC

31. For clinics with two access points (e.g. main entrance and back door), the entrance and exit routes should be separated where possible to minimise criss-crossing of patient flows.

Process for Referral of Patients to Hospital

32. For stable patients that MOH require to be referred to hospital for isolation and treatment, the clinic staff should:

   a. Activate the transfer ambulance service (DID: 6586 0237) to transport the influenza patient to the designated hospital as determined by MOH.

   b. Provide the following information to the ambulance operator:
      i. Name of requesting staff and doctor.
      ii. Clinic name, contact numbers, address, nearest geographical landmark if possible.
      iii. Patient’s full name, NRIC/ Passport/Other ID No., Gender, Age.
      iv. Patient’s symptoms.
33. For unstable and emergency cases, clinic staff should continue as per peacetime practice by calling 995 for SCDF emergency ambulance.

**Cleaning Procedures**

34. Proper cleaning should be carried out by the clinic, to reduce the level of contamination on all surfaces, and to minimise the transmission of infection by indirect contact with surfaces contaminated with droplets. The cleaning guidelines are described in Chapter 6 of this Guide.
CHAPTER 4: LOGISTICS SUPPORT

Staff Personal Protection Equipment (PPE)

Two Levels of Stockpile

1. The pandemic PPE stocks are stored and managed at two levels:

   a. **Level 1.** All primary care clinics (including PHPCs) are required to stockpile one week’s supply of PPE to meet their immediate surge demand according to the Licensing Terms and Conditions under the PHMC Act.

   b. **Level 2 (applicable only to PHPCs).** MOH maintains a national PPE stockpile comprising N95 masks, surgical masks, examination gloves and isolation gowns which are kept with a logistics service provider. The logistics service provider will deliver the supplies to the PHPC when activated by MOH. AIC will be the point-of-contact for the updating of clinic information, in order to facilitate the delivery of supplies upon activation.

2. When activated by MOH during an influenza pandemic, the PHPC will receive up to 12 weeks’ of PPE for staff use. The exact quantity to be supplied will be based on MOH’s assessment of the specific threat/situation.

Initial Two Weeks Load of PPE from National Stockpile

3. To ensure that the first batch of PPE from the national stockpile reaches all PHPCs without delay, each PHPC will receive an initial load of up to two weeks’ supply of PPE upon activation of drawdown from the national stockpile. The standard two-week PPE load consists of items in Table 4a below:

<table>
<thead>
<tr>
<th>Table 4a: Standard Two Weeks’ PPE Load</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Model (if applicable)</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N95 Masks</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[NIOSH approved]</td>
<td>KC 46727 (regular)</td>
<td>1 box of 35 pcs</td>
</tr>
<tr>
<td></td>
<td>3M 8210 (regular)</td>
<td>3 boxes of 20 pcs</td>
</tr>
<tr>
<td></td>
<td>3M 8110S (small)</td>
<td>5 boxes of 20 pcs</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>195 pcs in total</strong></td>
</tr>
<tr>
<td><strong>Isolation Gowns</strong></td>
<td>N.A.</td>
<td>14 packs of 10 pcs</td>
</tr>
<tr>
<td>[Disposable type]</td>
<td></td>
<td><strong>140 pcs in total</strong></td>
</tr>
<tr>
<td><strong>Examination Gloves</strong></td>
<td>S’ size</td>
<td>15 boxes of 100 pcs</td>
</tr>
<tr>
<td>[Disposable Nitrile, various sizes]</td>
<td>M’ size</td>
<td>13 boxes of 100 pcs</td>
</tr>
<tr>
<td></td>
<td>L’ size</td>
<td>2 boxes of 100 pcs</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>3,000 pcs in total</strong></td>
</tr>
<tr>
<td><strong>Surgical Masks</strong></td>
<td>N.A.</td>
<td>8 boxes of 50 pcs</td>
</tr>
<tr>
<td>[3 ply]</td>
<td></td>
<td><strong>400 pcs in total</strong></td>
</tr>
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Subsequent PPE Replenishment

4. MOH may subsequently deliver up to another ten weeks’ quantity of PPE, if required. For clinics which require N95 mask or examination gloves sizes which are different from the standard norm (restricted to the same models/sizes in Table 4a, the logistics service provider will be able to cater for orders of customised PPE quantities (based on smallest packing size) from the second delivery onwards (subject to the planning ratio ceiling of the two weeks’ quantity per delivery). The timing of the delivery runs are fixed, and are approximately two weeks apart. However, the logistics service provider would not accept any returns or exchange of PPE once
delivered. PHPCs may make their own arrangements to exchange PPE amongst themselves, to accommodate the different size requirements.

5. Larger multi-doctor practices may be supplied an increased quantity of PPE, according to the number of staff. MOH will decide on the supply load configuration for these clinics based on the indication of the number of doctors practicing in the clinic at any one time.

Acknowledgement of Receipt

6. Clinic staff will have to receive and acknowledge on the delivery document for the PPE quantities received.

Planning

7. Upon signing-up to the PHPC scheme and whenever there are changes to the number of staff in the clinic, PHPCs are encouraged to update the information on the relevant platform to facilitate planning. Prior to the drawdown of the PPE stock, PHPCs will also be requested to reconfirm the doctor details.

Mask Fitting

8. It is strongly recommended that clinic staff undergo proper mask-fitting of the N95 mask (i.e. for the respective make and model) supplied from the national stockpile listed in Table 4b below:

Table 4b: N95 Mask Models in National Stockpile

<table>
<thead>
<tr>
<th>KC 46727 (Regular size)</th>
<th>3M 8210 (Regular size)</th>
<th>3M 8110S (Small size)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="KC 46727 Mask" /></td>
<td><img src="image2" alt="3M 8210 Mask" /></td>
<td><img src="image3" alt="3M 8110S Mask" /></td>
</tr>
</tbody>
</table>

Supply of Masks during Haze

9. N95 masks are not needed for short exposure to haze, such as commuting from home to school or work. N95 masks are also not needed in an indoor environment. As such, masks from the national stockpile will not be supplied as part of the activation of the HSS. If PHPCs deem it necessary for their staff to wear a mask during haze, they could provide it at their own expense. N95 masks are available at major pharmacies and supermarkets.

Supply of Pharmaceuticals

Anti-Virals for Staff Prophylaxis and Patient Treatment

10. PHPCs will be supplied with anti-virals free-of-charge for staff prophylactic use when required.
11. For staff prophylaxis and treating of patients in an influenza pandemic, PHPCs will be provided with up to 50 boxes of Tamiflu from the national stockpile on consignment basis (without any initial charges), but the prescription of these would need to comply with MOH’s guidelines and administrative requirements. PHPCs will be charged for the amount of Tamiflu used. Tamiflu for both staff prophylaxis and patient treatment will be delivered to the PHPCs when assessed as appropriate by MOH. PHPCs will only be charged for the quantity of Tamiflu used for patient treatment. However, PHPCs can choose to use commercial sources of Tamiflu for treating patients, without being subject to any MOH administrative requirements.

12. For subsequent deliveries of Tamiflu, PHPCs can request the MOH logistics service provider to resupply on a weekly basis based on usage. However, PHPCs will have to pay for the cost of these subsequent deliveries.

**Pandemic Vaccine**

13. Pandemic influenza vaccines can only be developed when the pandemic influenza virus has been identified (i.e. after the pandemic has started), and subsequent to that it may take at least six months to become available. The national plan is to vaccinate the whole population, but as the vaccine supply is expected to be only available in batches, vaccines are likely to be administered based on priority. Personnel in essential services such as doctors and clinic staff in PHPCs will be one of the priority groups to be administered the vaccine early once it becomes available. The logistics plan for pandemic vaccine will be advised once the vaccine becomes available.

**Accountability for Receipt**

14. The clinic doctor needs to sign on the delivery document for the receipt of anti-viral drugs and vaccines, to ensure proper accountability.
CHAPTER 5: USE OF PERSONNEL PROTECTIVE EQUIPMENT FOR PROTECTION IN INFLUENZA PANDEMIC

Standard Precautions

1. Standard Precautions are designed to reduce the risk of transmission of micro-organisms from both recognised and unrecognised sources of infection in healthcare settings. Standard Precautions apply to blood, all body fluids and secretions, excretions except sweat (regardless of whether they contain visible blood), non-intact skin and mucous membranes. Standard Precautions emphasise the importance of hand washing after touching blood, body fluids, secretions, excretions and contaminated items; and also after the removal of gloves, between patient contact, and when indicated.

Hand Hygiene

2. Hand hygiene is the single most important method of infection control. All clinic doctors and staff should be familiar with and perform the eight steps to hand hygiene. Hands should be dried thoroughly, preferably with a disposable hand towel in cases where hand washing is performed. Alternatively, alcohol-based hand rub may be used if soap and running water are not available, and when hands are not visibly soiled. The eight steps to hand hygiene are presented in Figure 5a.

Figure 5a: Eight Steps to Hand Hygiene

Extracted from https://www.healthhub.sg/live-healthy/471/keepyourhandsclean

Gloves

3. Gloves should be worn when touching blood, body fluids, secretions, excretions and contaminated items, and also before touching mucous membranes and non-intact skin. Gloves should be removed promptly after each use followed by hand hygiene, before proceeding to another activity.
**Mask**

4. Fit-tested N95 masks should be worn during close contact with ILI patients.

**Eye Protection**

5. Eye Protection (i.e. goggles or face shields) should be worn during close contact ($ \leq 2m$) with ILI patients when carrying out procedures with risk of aerosolisation, to prevent aerosolised droplets from coming into contact with the mucus membranes of the eyes.

**Gown**

6. Isolation gowns should be worn, to protect skin and prevent soiling of clothing during procedures and patient care activities that are likely to generate splashes or sprays of blood, blood fluids, secretions or excretions.

**Putting On and Taking Off PPE**

7. It is critical to observe the proper sequence of putting on and taking off PPE, to prevent self-contamination (see Figure 5b). The poster for putting on and taking off PPE can also be printed from [http://www.who.int/csr/resources/publications/putontakeoffPPE/en/](http://www.who.int/csr/resources/publications/putontakeoffPPE/en/).

*Figure 5b: Putting On and Taking Off PPE (WHO)*

- **How to put on PPE (when all PPE items are needed)**
  - **Step 1**: Identify hazards & manage risk. Gather the necessary PPE.
  - **Step 2**: Put on PPE.
  - **Step 3a** or **Step 3b**: Put on gown, face mask and eye protection (e.g. glasses).
  - **Step 4**: Put on shoe covers.

- **How to take off PPE**
  - **Step 1**: Avoid contamination of self, sharps & the environment.
  - **Step 2**: Perform hand hygiene.
  - **Step 3a** or **Step 3b**: Remove face shield or eye protection.
  - **Step 4**: Perform hand hygiene.

**Note:** If performing an aerosol-generating procedure (e.g., aspiration of respiratory tract, intubation, intubation, bronchoscopy, endoscopy), a particulate respirator (e.g. N95, N95, or equivalent) should be used in combination with a face shield or eye protection. Do not wear both when using a particulate respirator.

CHAPTER 6: PANDEMIC CLEANING GUIDELINES

Pandemic Cleaning Guidelines for Healthcare Facilities

1. Large droplets, aerosol spread and transmission through fomites and gross environmental contamination are possible modes of influenza transmission. The cleaning guidelines here should be applied to all work areas in the PHPC.

2. These cleaning guidelines are meant to provide general instructions on cleaning procedures in a pandemic environment and more specific instructions for certain areas potentially contaminated by an infected patient. Maintaining a clean environment may interrupt transmission of the virus.

3. These cleaning guidelines should be made known to all relevant staff. Relevant sections should be made known to clinic contractors, e.g. cleaning and maintenance contractors. All contractors working in the healthcare environments should be aware of the guidelines.

General Cleaning Principles

4. Cleaning reduces the level of contamination on all surfaces and minimises the transmission of infection by indirect contact with surfaces contaminated with droplets.

5. Sodium hypochlorite 0.1% (dilute bleach) or alcohol 70% can be used as a disinfectant. It should be applied using a damp cloth, left for at least 10 minutes but no longer than 30 minutes, thoroughly rinsed off and the area dried.

6. Disinfectants should not be applied using a spray pack, as coverage is uncertain and spraying may promote the production of aerosols. The creation of aerosols caused by splashing liquid whilst 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.

Personal Protection during Cleaning

7. PPE must be used when doing cleaning. The following guidelines should be followed when doing cleaning:

   a. Gloves should always be worn. Single use (disposable) gloves should not be reused or washed.

   b. Any cleaning activity likely to generate aerosols should not be undertaken without the cleaner and those in the room wearing N95 mask and goggles. Full PPE is not required for routine cleaning.

   c. When cleaning an environment where a known influenza case has been, gloves, disposable gown, N95 mask, and goggles should be used.

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2 Household bleaches are generally 3-6% sodium hypochlorite.
Environmental Cleaning

Patient Care Equipment

8. A separate set of equipment (e.g. BP set and stethoscope) should be used for ILI patients where possible. All reusable equipment should be cleaned, reprocessed and sterilised as appropriate before being used on another patient. Contaminated equipment that must be cleaned and disinfected should be stored in an area which is separate from clean supplies and equipment.

Environmental Control

9. Routine cleaning and disinfection of the environmental surfaces should include computers and technological devices, to prevent the transmission of infectious microorganisms. It is recommended that this be done at least once a day.

Handling of Linen

10. Used linen should be handled, transported and processed in a manner that will minimise the transfer of micro-organisms to other patients and the environment, according to recommended standard infection control practices. To avoid the generation of contaminated aerosols, linen should not be tossed or thrown, but placed gently into coded laundry bags and washing machines.
CHAPTER 7: RESPONSE TO A DELIBERATE RELEASE OF ANTHRAX

1. Anthrax is an acute infection caused by the spore-forming, bacteria *bacillus anthracis*, which infects the body through abrasions on skin (cutaneous anthrax), by breathing anthrax spores (inhalational anthrax), or ingesting contaminated meat (gastrointestinal anthrax). Anthrax spores are very hardy (i.e. resistant to heat, drying, many chemical disinfectants and ultraviolet radiation) and may remain dormant for decades. This hardiness and dormancy has allowed anthrax spores to be potentially developed as biological weapons.

2. In the aftermath of the 11 Sep 2001 attack in the USA, anthrax-laced letters were sent through the US postal service addressed to various persons. This 2001 attack documented 18 confirmed cases of anthrax, including 11 cases of inhalational (five of them fatal) and seven cases of cutaneous anthrax (none of whom were fatal); and four suspected cutaneous cases. The attacks also led to more than 20,000 people having to take antibiotics.

Public Health Strategy

3. Should an anthrax outbreak occur locally, the public health strategy is to focus on the timely administration of antibiotic prophylaxis to the directly exposed cases, as well as the potentially exposed and worried-well. Reports have shown the efficacy of antibiotics therapy if initiated during the incubation period, and the rapid course of the disease once symptoms appear makes early intervention an absolute necessity. Mass media will be utilised to reach out to all potentially exposed individuals, for them to be administered prophylaxis as early as possible. Antibiotics will be administered at the polyclinics and PHPCs.

4. There are currently no available diagnostic tests to determine if a person has been exposed to anthrax during the incubation period. Although diagnosis could be performed reliably once the disease sets in, the prognosis is generally poor at that stage, even with treatment. To reduce morbidity and mortality, prophylaxis will have to be provided on the basis of suspicion of exposure alone.

5. The planning assumption is that most cases would primarily be infected through inhalation. As the time duration between initial exposures to confirmation of the release is likely to be at least a few hours, it can be assumed that any significant amount of anthrax spores on the exposed persons’ clothes would have flaked off into the environment and would not be sufficient to cross-contaminate non-affected persons. By extension, the directly exposed persons would not pose a contamination risk to the PHPC staff, and it is sufficient for staff involved in the management of anthrax cases to adopt universal precautions (i.e., use of gloves, gowns, and mask; and hand washing) during the first 24-48 hours following the incident.

Drug Dispensing Plan

6. MOH will centrally coordinate and oversee the activation and administering of the prophylaxis. Relevant information on the disease case definition, prophylactic regime, ordering process for antibiotics, health advisory, and known contraindications will be communicated to the PHPCs via circulars. Circulars will also instruct PHPCs how to administer and document prophylaxis to potentially exposed persons.

7. The entire duration of prophylaxis comprises 60 days of medication. The current clinical guidelines on anthrax are attached in Annex D. The clinical guideline will be reviewed by MOH as needed when the situation evolves.
8. As the capacity at the polyclinics is expected to be considerably strained by the huge numbers of patients, the plan is to leverage on the PHPCs to support administration of the prophylaxis. Upon activation, affected members of public will be advised to go to the polyclinics or the PHPCs to collect their prophylaxis. All hospitals and medical practitioners would be notified through circulars to administer prophylaxis to potentially exposed persons who fit the clinical definition if they arrive at their places of practice.

9. Patients who display any symptoms of anthrax will be advised to see a doctor. This will allow the monitoring of the health status of the patients during the course of their prophylactic regime, and also the medical review of these patients.

10. The distribution of prophylaxis for children under 16 years old will be done centrally at KK Women’s and Children’s Hospital (KKH). Dosage for children is determined by the weight of the child.

11. Where a decision has been made to stand-down the administration of the prophylaxis, MOH will inform PHPCs through circulars. AIC will likewise alert PHPCs through SMS and email.

12. As Ciprofloxacin is a commonly available antibiotic, PHPCs should dispense their own stock and continue to order Ciprofloxacin from their own supplier. If necessary, MOH will release the national stockpile to the suppliers to ensure continuity of supply in the market.

Work Processes at PHPCs

13. The patient flow model for prophylaxis dispensing is similar to existing clinic processes during peacetime. Unlike the management of influenza patients during a pandemic however, segregation of patients exposed to anthrax from the other patients is not necessary. The directly exposed patients should not pose a contamination risk to the staff at the PHPCs, and it is sufficient for staff involved in the management of anthrax cases to adopt standard precautions.

Consultation Process

14. The consultation of patients with suspected anthrax exposure requires priority. For patients that come back for refill of antibiotic drugs, the PHPC should check that they have an existing prescription. Registration may be as per peacetime operations.

Isolation Requirement

15. It is not necessary for anthrax patients to be physically segregated from the other patients. Doctors and clinic staff may adopt the standard precaution described in Chapter 5 of this Guide.

Dispensing and Payment

16. The Registration Counter staff may double up to man the Dispensing and Payment Counter as in normal peacetime operations. Upon completion of the consultation process, patient could make payment and collect medication as per the doctor’s prescription.

Cleaning Procedures

17. PHPCs should adopt the cleaning guidelines as described in Chapter 6 of this Guide.
ANNEX A: DETAILED SCHEMATIC WORKFLOW OF A PHPC

The Screening Counter:
- Is located near the clinic’s entrance
- Acts as a triage point for incoming patients and staff

The Patient Waiting Area:
- Should be segregated into two distinct areas to ensure a physical separation of ILI patients from non-ILI patients.
- Should be set up outside the clinic if space is a constraint
- Should have step bins for patients’ use

Patient with ILI symptoms to wear surgical mask

ILI Patient Waiting Area

Registration Counter

The Registration Counter:
- Can be organised as in normal times.
- Can double-up as a screening counter if there is manpower/space constraint

The Consultation Room:
- Can be organised as in normal times.
- Needs a computer with internet access to enable staff to access the Health Check System to identify repeat patients
- Should be separated for flu patients and non-flu patients where possible

Consultation Room(s) (separate rooms for ILI and non-ILI patients, if possible)

Transfer Room/Area (awaiting ambulance)

Patients to be referred to hospital

Separate exit from entry, if possible

Dispensary & Payment Counter

The Dispensary and Payment Counter:
- Can be organised as in normal times.
- Can be co-located or next to the registration counter for better coordination.

Patients without ILI symptoms

Non-ILI Patient Waiting Area
ANNEX B: PATIENT SCREENING FORM

(To be completed at Screening Counter)

<table>
<thead>
<tr>
<th>Date &amp; Time of Visit:</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRIC/Work Permit/PP No:</td>
</tr>
<tr>
<td>Name:</td>
</tr>
<tr>
<td>Address:</td>
</tr>
<tr>
<td>Contact Numbers</td>
</tr>
<tr>
<td>Home:</td>
</tr>
<tr>
<td>Mobile:</td>
</tr>
<tr>
<td>Temperature:</td>
</tr>
</tbody>
</table>

Do you have the following symptoms:

*(WILL BE PROVIDED BY MOH WHEN NEEDED)*

<table>
<thead>
<tr>
<th>Have you received anti-viral drugs such as Tamiflu previously? If yes, please state when?</th>
</tr>
</thead>
</table>
1. INTRODUCTION

1.1 Purpose

The purpose of this user manual is to guide users on how to use the HCS anti-viral prescription module and Report module.

1.2 Overview

This manual provides the step by step approach in executing the following functions:

a. Add Patient Information / anti-viral prescription
b. Search the Patient Information
c. Summary Report / Management Report
d. Clinic Report / Management Report

1.3 Login

Doctors can access the HCS via the Health Professionals Portal (http://www.moh.gov.sg/content/moh_web/healthprofessionalsportal/doctors.html), or can access it directly (https://healthcheck.moh.gov.sg) with their Medical Council Register (MCR) number or Singpass ID and their corresponding password.

2. FUNCTIONS

2.1 Add Patient

2.1.1 Description of Function

This function allows health-care professionals to prescribe anti-viral drugs to the patient.
2.1.2 Add Patient

Steps:

1. HCS Internet website

2. HCS Internet / intranet Website -> Anti-Viral Prescription Module -> Add Patient

3. On the displayed page:
   a. Select Identity Type of the patient. (If you wish to change, otherwise default is NRIC / Work Permit No.)
*Note: Please select Foreign Passport option for Foreign Workers.

b. Fill up the patient identity Number and Name.

c. Select Indication. (if you wish to change, otherwise default is Treatment.)

d. Select Drug Type. (if you wish to change, otherwise default is Tamiflu Capsule – 75 mg)

e. Fill up the patient prescription date. (if you wish to change, otherwise default is system date)

f. Click on ‘Add Patient’ button to submit.

4. If there is no error and patient has not been prescribed anti-viral within the last 15 days, system will prompt “Record added successfully” message.

5. System will automatically redirect to the Add / Search Patient page.

6. If patient has been prescribed anti-viral within the last 15 days, system will display the “Add Patient” confirmation page.
7. Select a reason for repeat anti-viral prescription for the patient within the last 15 days.

8. Click on ‘Confirm’ button to submit.

9. If a reason is selected, system will prompt “Record added successfully” message.

10. System will automatically redirect to the Add / Search Patient page.
2.2 Search Patient

2.2.1 Description of Function

This function allows health-care professionals to search for patients who have been given anti-viral prescription.

2.2.2 Search Patient

Steps:

1. HCS Internet / intranet Website -> anti-viral prescription module -> Search Patient

On the displayed Page, enter the patient Identity No or patient Name and click on the Search Patient button.

2. The search will return the result page
Disease Description

Anthrax is a zoonotic disease caused by the gram-positive spore-forming bacterium Bacillus anthracis. The spores are the usual infective form. There are three forms of anthrax, of which the primary concern for intentional infection by the organism is through inhalation after aerosol dissemination of spores.

- **Cutaneous**
  Most common form of naturally occurring anthrax. Humans generally contract the disease when handling contaminated hair, wool, hides, flesh, blood and excreta of infected animals. Usually manifest as by a black, necrotic skin lesion.

- **Gastrointestinal**
  Rare, but highly fatal form that occurs after ingestion of contaminated meat.

- **Inhalational**
  Most lethal form (mortality > 80%) that occurs following inhalation of spores.

Incubation Period

1 - 6 days

Clinical Features

- **Cutaneous**: Oedematous skin ulcer covered by black eschar. Satellite vesicles may be present.

- **Gastrointestinal**: Rapid onset abdominal pain with haemorrhagic ascites.

- **Inhalational**: Fever, malaise, fatigue, cough, mild chest discomfort. May briefly improve after 2-4 days; however within 24 hours after this brief improvement, respiratory distress and shock occurs. Usually progresses to death within 36 hours. Approximately half will develop haemorrhagic meningitis with concomitant headache, stiff neck and mental status changes. After significant symptoms have appeared, inhalational anthrax is almost always fatal, regardless of treatment.

Investigations

- **CXR**: widened mediastinum without infiltrates in a young or otherwise healthy patient with a typical presentation.

- **Gram stain and culture of blood, CSF (if meningitic), faeces (if GIT involved).**

Management

Treatment should be initiated as soon as diagnosis is suspected, never delay by waiting for confirmation testing. Antibiotic administration at the earliest signs of diseases is essential. Empirical treatment using ciprofloxacin or doxycycline, to review when sensitivity is known.

**Adults**

- Ciprofloxacin 500mg PO 12 hourly empirically
- Doxycycline 12 hourly

**Duration of treatment:**
- Continue additional prophylaxis for inhaled spores for up to 60 days from onset of illness

**Children**

For penicillin-resistant strains or prior to susceptibility testing:
- Ciprofloxacin 30mg/kg/day, by mouth (PO) divided every 12 hr (max: 500mg/dose)
- Doxycycline <45kg:4.4mg/kg/day PO divided every 12h (max:100mg/dose), ≥ 45kg:100mg PO every 12h.

For penicillin-susceptible strains:
- Amoxicillin 80mg/kg/day, PO, divided every 8h (max 500mg/dose)

**Duration of treatment:**
- For naturally acquired infection: 7 to 10 days; and
- For biological weapon-related event: continue additional prophylaxis for inhaled spores for up to 60 days from onset of illness

**Chemoprophylaxis**

- Prophylaxis should be provided to all persons who may have been directly exposed to the spores. It is critical to administer chemoprophylactic antibiotics as soon as possible after potential exposure. Contacts; e.g. family, friends, healthcare providers do not require prophylaxis unless they too were exposed to spores.
- Oral ciprofloxacin 500mg 12 hourly is the recommended first line medication in a situation with anthrax as the presumptive agent.
- Alternative is oral doxycycline 100mg 12 hourly where duration of therapy lasts up to 60 days after exposure.
- For Children, oral ciprofloxacin 30mg/kg/day 12 hourly (max:500mg/dose), oral doxycycline <45kg:4.4mg/kg/day 12 hourly, or oral amoxycillin 80mg/kg/day every 8h (max 500mg/dose) for penicillin-susceptible strains.
- Oral antibiotic prophylaxis should continue for at least 60 days after exposure.

**Isolation Precautions**

- Standard precautions.

- After an invasive procedure or autopsy is performed, the instruments and area used should be thoroughly disinfected with a sporicidal agent such as 0.5% sodium hypochlorite.
- No quarantine is needed.

**Case Fatality**

- Exceeds 90% once symptoms of inhalational anthrax appear.

**Death Disposal**

- Cremation is recommended to prevent further spread of the disease.
• Embalming of bodies could be associated with special risks and is not advised.