

A GUIDE TO ORGANISING A PRIMARY CARE CLINIC DURING AN INFLUENZA PANDEMIC

Version 2
(Mar 2008)



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BACKGROUND

1. The threat of an Influenza pandemic continues to loom with the continued outbreaks of avian influenza (AI) in domestic and wild birds, as well as the ever-increasing numbers of human cases in the world. Although the H5N1 virus is the current contender, a world wide influenza pandemic can be caused by other influenza viruses and we must be prepared for the eventuality. Ministry of Health (MOH) has worked out an operationally ready national influenza pandemic plan since 2005, and there is an ongoing effort to review and enhance the plan.

2. In an influenza pandemic, our treatment strategy is to provide as many treatment facilities as possible to cope with the surge in demand and to minimize the need for people to travel to seek medical treatment. The primary healthcare services in the community have been identified as the most appropriate framework to manage the ill in a pandemic.

3. Recognising that the **private primary care clinics**¹ form the larger proportion of the primary healthcare sector, Ministry of Health, in collaboration with the Singapore Medical Association (SMA) and College of Family Physicians Singapore (CFPS), has developed the Primary Care Pandemic Response Framework to enable government polyclinics and these private primary care clinics to work together to provide treatment for flu cases. In this framework, in the event of an influenza pandemic, the participating primary care clinics will be equipped with PPE and supplied with anti-viral drugs for treatment and staff prophylaxis so that they can continue to manage the sick (including children) in the community, including those ill from influenza.

AIM

4. The aim of this Guide is to provide an overview of the Primary Care Pandemic Response Framework and information on preparing and organising a Primary Care Clinic during a pandemic including infection control requirements and the concept of logistics support.

NATIONAL RESPONSE PLAN – TREATMENT STRATEGY

5. **Estimated Outpatient Load.** In order to estimate the impact of an influenza pandemic occurring in Singapore, a software programme, FluAid, developed by US CDC, was used to study the trends. The projected number of cases requiring outpatient treatment over a 6-week² period is 550 000 while the peak number of outpatients is estimated to be 280,000 a week.

6. **National Strategy.** The national strategy is to establish an effective surveillance system to detect the importation of a novel influenza virus, mitigate the consequences when the first pandemic wave hits and then race to achieve national immunity when a vaccine becomes available. During an

¹ Primary care clinics broadly encompass community based GP clinics and paediatric clinics (i.e. non-hospital/medical centre based). The total number is approximately 1400.

² 6 weeks is the planning assumption made for one pandemic wave.

outbreak, we will sustain the nation through the first pandemic wave by mitigating the impact through infection control and minimizing mortality and morbidity through treatment of influenza cases. During a pandemic, outpatient care will be provided by polyclinics and primary care clinics. Cases clinically diagnosed as influenza will be treated with anti-virals, preferably within 48 hours of the onset of symptoms while severe cases will be referred to hospitals for further treatment.

7. The full National Influenza Pandemic Readiness and Response Plan is available for reference at www.moh.gov.sg).

PRIMARY CARE RESPONSE FRAMEWORK

8. **Intent.** There are approximately 1400 private primary care clinics in Singapore and in normal times they manage 78% of outpatient caseload while Polyclinics manage 22%. When a pandemic is declared (*DORSCON RED*), the overall intent is to maintain normalcy as much as possible and to limit movement of the sick to reduce the likelihood of spreading the infection in the community.

9. **Concept.** In *DORSCON RED*, polyclinics and primary care clinics will be directed to organise themselves to manage flu and non-flu cases. This will allow the clinics to provide specific treatment to flu cases and continue to provide care to non-flu patients with strict infection control measures in place. To reduce the case load, the chronic sick will be provided with 3-6 months worth of medication and advised to seek consultation only if ill. Through the media, the public will be advised to go to any nearby GP clinic or community paediatric clinic (for children if necessary) or polyclinic for assessment and treatment for flu-like symptoms. Severe cases will be referred to acute restructured hospitals for further treatment.

10. **Clustering Framework.** To ensure tight coordination, primary care clinics will be organized into geographical clusters linked to the 18 polyclinics (Please see **Annex A** for the clustering framework and responsibilities). This will provide the clinics with an established framework for support in manpower resources and information sharing. MOH, together with SMA and CFPS, will appoint an IC (in-charge) for each cluster and group. The solo practice clinics will be grouped into these clusters while the larger GP practices³ will form their own groups and manage their clinic outlets as usual.

11. **Manpower.** SMA and MOH will maintain a registry of all existing primary care doctors who are working as locums. At *DORSCON RED*, these locums will be centrally managed by Polyclinic HQs, provided with anti-viral prophylaxis and deployed to Polyclinics, GP and community paediatric clinics which may require additional manpower support.

³ Raffles Medical Group; Parkway Shenton Medical Group; Healthway Medical Group; NTUC Medicare Family Clinics; Drs Koo, Neoh Medical Group; Acumed Medical Group; Gethin-Jones Medical Practice; Frontier Healthcare Group; and SATA Medical Centres.

12. **Logistics Supply.** All primary care clinics are required to have a baseline stockpile of one week's supply of PPE in peacetime. In a pandemic, the clinic doctor and support staff will be provided with similar protection as public sector healthcare workers. In *DORSCON RED*, MOH will deliver the following to the primary care clinics (Refer to **Annex B** for the logistics support plan).

- a. PPE requirement for six weeks (for doctors and clinic support staff⁴),
- b. Anti-virals for six weeks prophylaxis (for doctors and clinic support staff⁴),
- c. Anti-virals for treatment of flu-like patients (routine replenishment cycle will be established),

13. **Crowd Management and Security.** We expect that while there could be larger than usual crowds at some of the clinics during the pandemic, they are likely to remain orderly, given our policy to provide treatment to all patients suggestive of influenza. Notwithstanding this, clinics will need to manage the crowd effectively and carry out their operations smoothly. MOH is working with the police on a response plan to deal with any disturbances and unruly behavior that may affect clinic operations.

14. **Communications.**

a. **Public Communications.** In a pandemic, MOH and MICA will 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 to push out the public messages to gain the support and confidence of the public.

b. **Primary Care Response Internal Communications.** Current communication systems and frameworks will continue to apply. These will include advisories, directives and notification systems such as CRF and the MedAlert. Additionally, primary care clinics will be organised under the clustering structure and will get information and direction through the Polyclinic Heads, Cluster and Group ICs (in charges). While all means of communication will be exploited, MOH strongly encourages clinics to have **internet access** as much of the information will be pumped through the Net and e-mail.

ORGANISING A PRIMARY CARE CLINIC

15. **General.** In a flu pandemic, i.e. *DORSCON RED*, polyclinics and primary care clinics will treat flu and non-flu patients. **Primary care clinics need to prepare to manage larger than normal crowds and focus on reducing the risk of cross transmission of pathogens within the clinic.** Patients and staff need to be protected and it is necessary to adopt stringent infection control practices i.e. use of PPEs, and modifying the clinic workflow

⁴ Planning ratio of up to 4 clinic support staff for every attending doctor.

and work processes to effectively segregate the flu from non-flu patients. Scheduling of clinic hours for flu and non-flu cases is also strongly recommended to further segregate patients especially for clinics that do not have separate consult rooms. This Guide provides a generic structure which clinics will need to customize to fit the constraints of their location.

16. **Functional Areas.** In a pandemic, a primary care clinic will comprise the following areas:

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

A schematic clinic layout for one and two consultation rooms is provided in **Annex C** for reference.

17. **Screening Counter.** The Screening Counter acts as a triage point for incoming patients and staff. It is located near the clinic's entrance. The proposed furniture, equipment/consumables and stationery for the counter are as follows:

- a. Table (x1) and chairs (x2)
- b. Biohazard waste bins with lids (c/w biohazard waste bags)
- c. Normal waste bins (c/w trash bags)
- d. Pens
- e. Queue number tags (if required)
- f. Patient Screening forms
- g. Plastic tray to place the fresh/duly completed forms (if any)
- h. Clinical thermometers (e.g. digital thermo scan)
- i. Disposable protective sheaths (e.g. disposable ear probes)
- j. Disposable latex gloves
- k. Surgical masks (for patients)
- l. Alcohol hand-rub disinfectant (e.g. chlorhexidine 0.5%)
- m. Surface disinfectant (e.g. bleach, alcohol wipes)

18. **Flu and Non-Flu Patient Waiting Areas.** The clinic's patient waiting area should be segregated into two distinct areas to ensure a physical separation of flu from non-flu patients. If space is a constraint, clinics could explore setting up one or both the waiting areas outside the clinic but prior approval would likely be needed from HDB or the building management. Provide biohazard waste bins for patients' use. Clinics with only one consult room should consider separate clinic hours for flu and non-flu patients.

19. **Registration Counter.** The Registration Counter can be organised as in normalcy. The counter will need a computer with internet access to enable the staff to access the Health Check System to identify repeat patients.

20. **Consultation Room(s).** Consultation Room(s) may be organized as in normalcy. Where possible, clinics should have two Consultation Rooms, one for flu and the other for non-flu patients.

21. **Transfer Room/ Area.** Each clinic needs to have a Transfer Room/Area to enable flu patients awaiting transfer to designated flu hospitals to await ambulance transport away from the other patients. The room/area can also be used for patients who require emergency attention. The suggested furniture, equipment/consumables and stationery for the Transfer Room/Area are as follows:

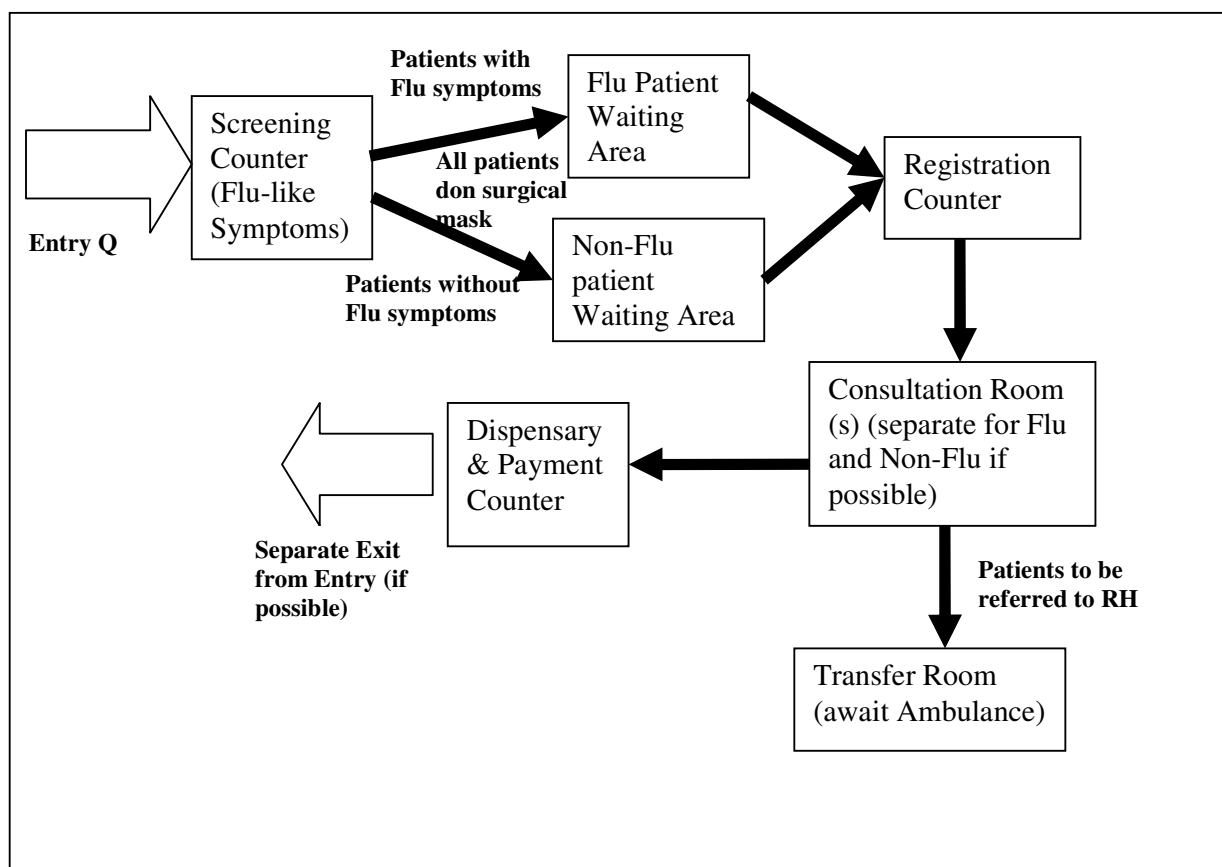
- a. Table (x1) and chairs (x2)
- b. Biohazard waste bins with lids (c/w biohazard waste bags)
- c. Normal waste bins (c/w trash bags)
- d. Pens
- e. Referral letters (to flu hospitals), envelopes, carbon papers
- f. Writing note pads
- g. Ink stamps (name, date etc)
- h. Stethoscope
- i. BP set (including paediatric and adult cuffs)
- j. Clinical thermometers and disposable protective sheaths
- k. Disposable latex gloves
- l. Disposable dressing sets
- m. Wooden tongue depressors
- n. Alcohol hand-rub disinfectant

22. **Dispensary and Payment Counter.** The Dispensary and Payment Counter can be organised as in normalcy. This counter can be collocated or next to the Registration Counter for better coordination. The counter will need a computer with access to the internet for the staff to key in patient information when anti-viral drugs are dispensed.

PRIMARY CARE CLINIC WORK PROCESSES

23. **General Patient Flow.** The key principal in setting out the workflow is the segregation of flu from non-flu patients so as to minimize contact. Masks and PPE are a useful physical barrier. Separation can also be achieved through physical distance between the two groups and by staggering their activity at common areas such as the Registration and Dispensary/Payment counters. Clinics with single consultation rooms are strongly encouraged to consider rescheduling their consultation hours for flu and non-flu cases. Clinics need to consider signages to facilitate the flow of patients and to reduce anxiety especially when there are crowds. The diagram below illustrates the flow of patients through the clinic.

SCHEMATIC WORKFLOW FOR A PRIMARY CARE CLINIC



24. **Flu Screening Process.** The Screening Counter will screen all patients and staff entering the clinic for flu-like symptoms. Other visitors to the clinic (including delivery, dispatch personnel) should be managed outside the clinic. The staff assigned to the Screening Counter will have the following roles:

- a. Don full PPE (refer to **Annex D** on PPE guidelines)
- b. Inform all staff and patients that it is compulsory to have their body temperature taken prior to entry into the clinic.
- c. Assist/facilitate the patient to complete the Screening Record (see **Annex E** for a sample) which will include contact information for community contact tracing purposes⁵.
- d. Screen every patient for flu-like symptoms.
- e. Provide all patients with a surgical mask and advice on its use.
- f. For a patient with flu-like symptoms, the Screening Counter staff shall:
 - (i) Reassure him/her.

⁵ In a pandemic (*DORSCON RED*), quarantine operations will be carried out till no longer operationally feasible. Contact details of visitors will continue to be recorded until quarantine measures are ended. Contact details include - date and time of visit, name of visitor/patient, IC number, address, telephone number.

- (ii) Usher the patient to the Flu Waiting Area.
- g. Patients without flu-like symptoms will be ushered to the clinic's Non-Flu Waiting Area.
- h. Hand the completed Screening Record to the Registration Counter for registration.

25. Registration Process.

- a. Registration may be as per peacetime operations. However, priority should be given to patients in the Flu Waiting Area. Registration can commence based on the details provided in the patient Screening Record.
- b. In a pandemic, there will be high demand for anti-viral drugs and there may be instances of patients seeking a second prescription from the doctors. To reduce this behaviour, clinics will need to access the Health Check System (HCS) to check on the patient database to determine if the patient has been treated previously. It is recommended that this check is done at Registration or at the latest, at the beginning of the consultation. Patients who have received anti-viral treatment within a specified period (as determined by MOH) ought not to receive a second prescription. Please see **Annex F** for more details.

26. Consultation Process.

- a. It is recommended that flu patients are physically segregated from non-flu patient. Clinics with only one consultation room need to take greater care to reduce the possibility of cross infection. These clinics are strongly encouraged to reschedule their consultations for flu and non-flu patients. For clinics with two or more Consultation Rooms, the rooms should be designated for flu and non-flu patients. If the clinic has two (or more) doctors, then each doctor can be designated to a fixed consultation room. If there is only one doctor, he/she will need to shuttle between the two consultation rooms. Attending doctors and nurses need to put on full PPE and adopt the necessary infection control measures.
- b. If the check with HCS has not been done at Registration, the doctor should do so at the start of the consultation. In general, during an influenza pandemic, all patients with flu-like symptoms will receive treatment with anti-viral drugs. However, patients who have received anti-viral treatment for flu within a specified period (as determined by MOH) ought not to receive a second prescription.

27. Dispensing and Payment Process.

- a. The Registration Counter staff may double up to man the Dispensing and Payment Counter as in normalcy. Upon completion of

the consultation process, medication will be dispensed to the patient as per doctor's prescription. **Clinic staff are required to log (report) all antiviral prescriptions with MOH via its web-based anti-viral reporting IT system, known as Health Check System (HCS).** Refer to **Annex F** for the logging in and reporting procedure.

b. Patients will be billed⁶ as per clinic's practice. This may be reviewed by MOH at a later stage.

28. **Exiting the Primary Care Clinic.** For clinics with two access points (e.g. main entrance and back door), the entrance and exit route should be separated to minimise criss-crossing of patient flows.

29. **Process for Referral of Flu Patients to Hospital.** If referral or transfer of a flu patient to a designated hospital is indicated, the clinic staff shall activate the patient transport process. The patient should be held in the Transfer Room/Area. The doctor or nurse should ensure that the patient is clinically stable while awaiting the arrival of the transfer ambulance. Clinic staff need to:

- a. Activate the ambulance service (993) to transport the flu patient to designated hospital.
- b. Provide the following information:
 - (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

(Note: for routine referral, it is NOT necessary to contact the designated hospital's Emergency Department)

30. **Cleaning Procedures.** Cleaning is important to reduce the level of contamination on all surfaces and minimise the transmission of infection by indirect contact with surfaces contaminated with droplets. The cleaning guidelines as shown in **Annex G** are meant to provide general instructions on cleaning procedures in an influenza pandemic environment and more specific instructions for certain areas potentially contaminated by an influenza patient. Maintaining a clean environment may interrupt transmission of the virus.

Prepared by:

**The Ministry of Health (MOH);
Singapore Medical Association (SMA); and
College of Family Physicians Singapore (CFPS)**

⁶ MOH will advise on the charging policy and process for dispensing of anti-virals.

CLUSTERING FRAMEWORK AND RESPONSIBILITIES

GENERAL

1. Ex Sparrowhawk 06 highlighted that primary care clinics would be hard pressed to sustain clinic operations in a pandemic if they operate independently. With support from both SMA and CFPS, MOH introduced the clustering framework to assist and support the primary care clinics, especially the solo practices, as they continue to treat the community during a pandemic.

CONCEPT

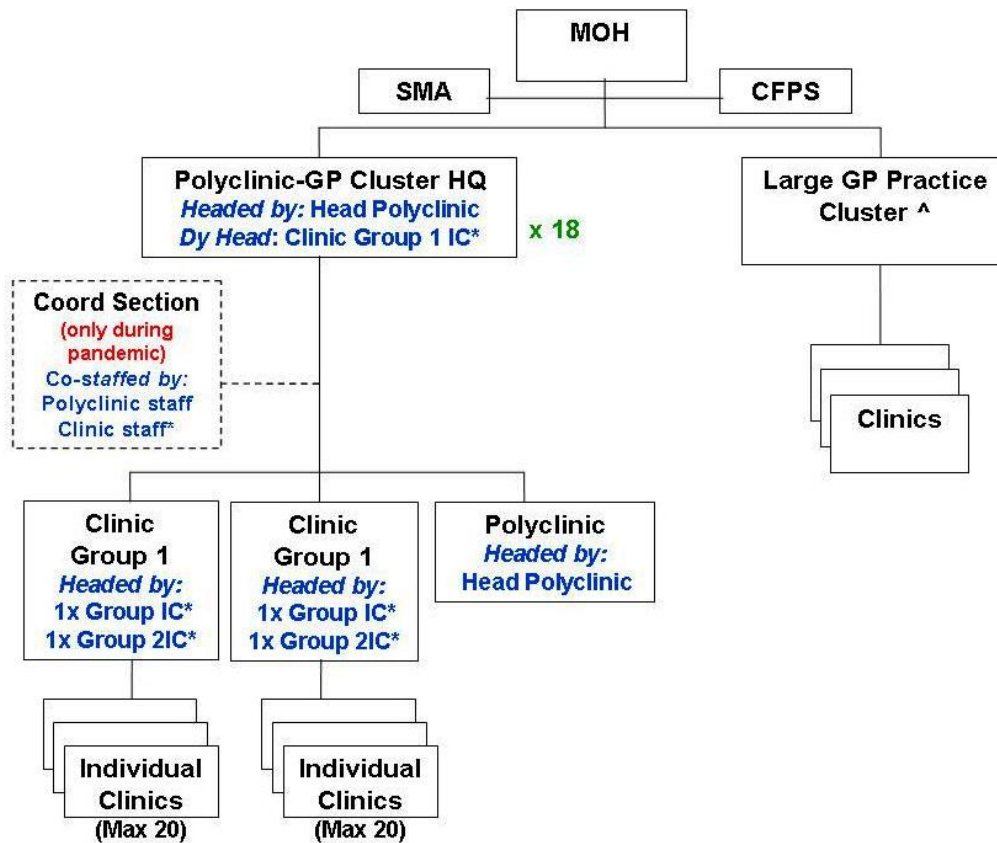
2. In a pandemic, primary care clinics will operate in clusters to establish a framework for mutual support. The solo practice GP and community paediatric clinics will be geographically grouped and linked to the 18 polyclinics. The polyclinic will assist to coordinate the deployment of manpower and resources as well as to disseminate information to the clinics affiliated to it. Large GP practices⁷, however, may form their own clusters respectively and take care of their clinic outlets.

CLUSTERS

3. Depending on the number of clinics per geographical area and for efficient coordination and outreach, clinics are organised as clusters around 18 polyclinics. Each cluster has 1 or more clinic groups affiliated to it. Each clinic group should encompass no more than 20 individual clinics. Large GP practices with five or more clinics may form their own clusters. Schematically, clustering is as shown below.

⁷ Raffles Medical Group; Parkway Shenton Medical Group; Healthway Medical Group; NTUC Medicare Family Clinics; Drs Koo, Neoh Medical Group; Acumed Medical Group; Gethin-Jones Medical Practice; Frontier Healthcare Group; and SATA Medical Centres.

Clustering of Primary Care Clinics and Polyclinics



* Staffed by clinic doctor or staff

^ refer to para 4.

4. Currently the registered cluster HQs are:

S/No	Polyclinics / Large GP Practice Groups
1	Ang Mo Kio Polyclinic
2	Bukit Batok Polyclinic
3	Choa Chu Kang Polyclinic
4	Clementi Polyclinic
5	Hougang Polyclinic
6	Jurong Polyclinic
7	Toa Payoh Polyclinic
8	Woodlands Polyclinic
9	Yishun Polyclinic
10	Bedok Polyclinic
11	Bukit Merah Polyclinic
12	Geylang Polyclinic
13	Marine Parade Polyclinic
14	Outram Polyclinic

15	Pasir Ris Polyclinic
16	Queenstown Polyclinic
17	Sengkang Polyclinic
18	Tampines Polyclinic
19	Raffles Medical Group
20	Parkway Shenton Medical Group
21	Healthway Medical Group
22	NTUC Medicare Family Clinics
23	Drs Koo, Neoh Medical Group
24	Acumed Medical Group
25	Gethin-Jones Medical Practice
26	Frontier Healthcare Group
27	SATA Medical Centres

RESPONSIBILITIES

5. The clustering and grouping of primary care clinics will be initiated in peacetime but will be activated by MOH only in a pandemic. Together with SMA and CFPS, MOH will appoint GP cluster and group In-Charge (ICs) as the coordinators for the operations.

6. **Polyclinic Head.** The Polyclinic Director or a deputized staff will provide leadership for the affiliated clusters. The Polyclinic head serves as the point of contact with the cluster/group leaders and will provide guidance and advice on public health policies, directives, guidelines and clinical practices to the affiliated clinics. The Polyclinic serves as a communication conduit and as an information resource for MOH to reach out to the GP clinics and for the clinics to seek clarification and provide feedback to the Ministry. When required, the Polyclinic has the responsibility to facilitate and coordinate the redeployment and sharing of scarce drugs, medical resources and trained clinic staff between the clusters to allow the smooth functioning of the primary care system.

7. **Cluster IC (In-Charge).** Large GP practices will appoint their own Cluster ICs while MOH, together with SMA and CFPS, will appoint GPs as leaders of the other clusters. The Cluster ICs provide leadership to the clinics and groups under their charge and function as the point of contact for the Polyclinic Heads and MOH to communicate and reach out to the affiliated clinics. They provide guidance and advice and are the conduit to disseminate public health policies, directives, guidelines and clinical practices to the affiliated clinics. When required, the Cluster ICs will facilitate the redeployment of drugs and manpower resource within their cluster to allow the smooth functioning of the primary care system. Cluster ICs must be aware of the status of the clinics under their charge.

8. **Group IC.** Similarly, the large GP practices may appoint their own Group ICs while MOH, together with SMA and CPS, will appoint the Group ICs for the other groups. Group ICs will lead 10-20 clinics under their wing and provide guidance and advice to the clinic doctors and staff. They will be

the point of contact for communications and instructions from the Cluster ICs, Polyclinic Head and, when necessary, MOH. Group ICs will disseminate public health policies, directives, guidelines and clinical practices to the clinics under their charge. When required, the Group ICs will facilitate the redeployment of drugs and manpower resource within their group to allow the smooth functioning of the primary care system. Group ICs must be aware of the status of the clinics under their charge and keep their Cluster ICs regularly apprised on the status of the clinics.

9. **Doctors in charge** of the individual clinics will need to keep the Group ICs updated regularly on the clinic manpower status and supplies. This will enable the Group and/or Cluster ICs to redeploy resources and trained manpower to ensure that the clinics can continue to provide primary care to the community.

LOGISTICS SUPPORT PLAN FOR CLINICS DURING AN INFLUENZA PANDEMIC

GENERAL

1. This section describes the logistics support plan for primary care clinics during a pandemic pertaining to PPE and anti-virals.

CONCEPT OF LOGISTICS SUPPORT

2. All primary care clinics need to be self-sufficient for at least 1 week in an outbreak, after which, critical medical supplies will be pushed to the clinics by MOH within a designated time-frame.

STAFF PERSONAL PROTECTION EQUIPMENT (PPE)

3. PPE stocks in response to a flu pandemic are stored and managed at 2 levels (i.e. primary care clinics and MOH):

a. Level 1. Primary care clinics are required to stockpile 1 week supply of PPE to meet their immediate DORSCON RED surge demand before the PPE from the national stockpile is delivered.

b. Level 2. MOH maintains a national PPE stockpile for the primary care clinics. The stockpiled PPE items comprising N95 masks, surgical gloves and isolation gowns are kept with a logistics service provider who will push the supplies to primary care clinics in *DORSCON RED*.

4. When activated by MOH, each clinic will receive 6 weeks worth of PPE for staff⁸ use.

5. The national N95 mask stockpile consists of the models listed below. To facilitate distribution, each primary care clinic is encouraged to provide MOH with information on the N95 mask make and model suitable for each staff (subjected to planning ratio⁸ ceiling), using the reply form attached in **Appendix 1 to Annex B**. It is recommended that clinic staff should be aware of their correct N95 mask make and model by undergoing proper mask-fitting.

Make of N95 Mask	Model of N95 Mask
3M	1860
	1860 S
	1862
DRAEGER	FFP 2
	FFP 3

⁸ Planning ratio of up to 4 clinic support staff for every attending doctor.

SUPPLY OF ANTI-VIRALS

6. **Anti-Viral Drugs for Staff Prophylaxis.** In *DORSCON RED*, each primary care clinic will be supplied with 6 weeks worth of anti-virals for prophylactic use by attending doctors and clinic support staff⁹. The anti-viral drugs for prophylaxis will be delivered en-bulk to the clinic point of contact at the same time as the PPE.

7. **Anti-viral Drugs for Treatment.** In *DORSCON RED*, primary care clinics will receive an initial supply of one week's worth of anti-viral drugs for treatment. MOH vendor will then resupply the clinics on a weekly basis based on the usage.

⁹ Planning ratio of up to 4 clinic support staff for every attending doctor.

To: Ministry of Health (Attn: Ms Evelyn Koh)
 Fax No.: 63257859

REPLY FORM – N95 MASKS FOR PRIMARY CARE CLINIC STAFF

CLINIC'S INFORMATION	
Clinic's Name:	
Address:	
Tel:	Fax:

Name of Clinic Staff	Position (e.g. Doctor / Clinic Assistant)	Make and Model of N95 Mask (Pls tick ✓ only ONE box per staff)				
		3M			DRAEGER	
		Model 1860	Model 1860 S	Model 1862	Model FFP 2	Model FFP 3

Note: To determine correct N95 mask make/model, each clinic staff should undergo proper mask-fitting.

I certify that the above information given is correct.

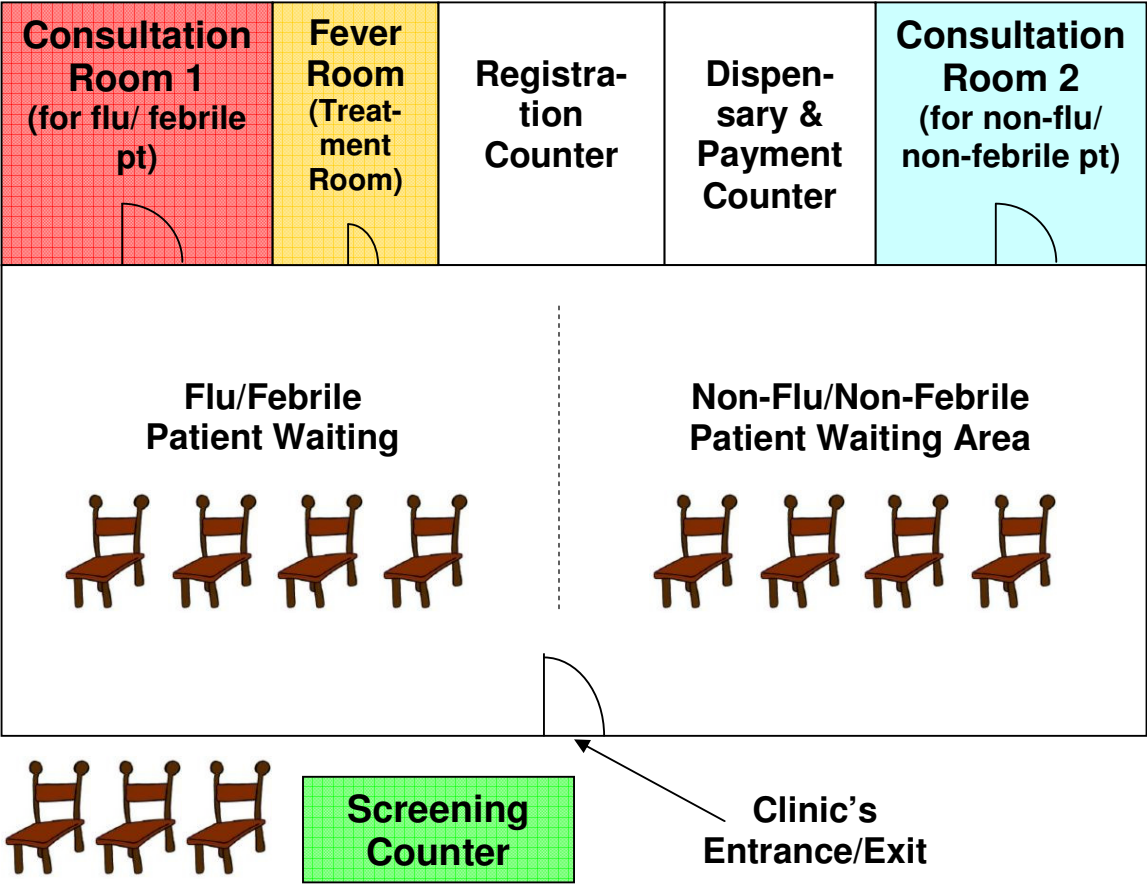
 Name and Signature of Clinic's Licensee (Doctor)

 Date

SUMMARY OF N95 MASKS FOR CLINIC STAFF		
Make	Model	Total No. of Staff
3M	1860	
	1860 S	
	1862	
DRAEGER	FFP 2	
	FFP 3	

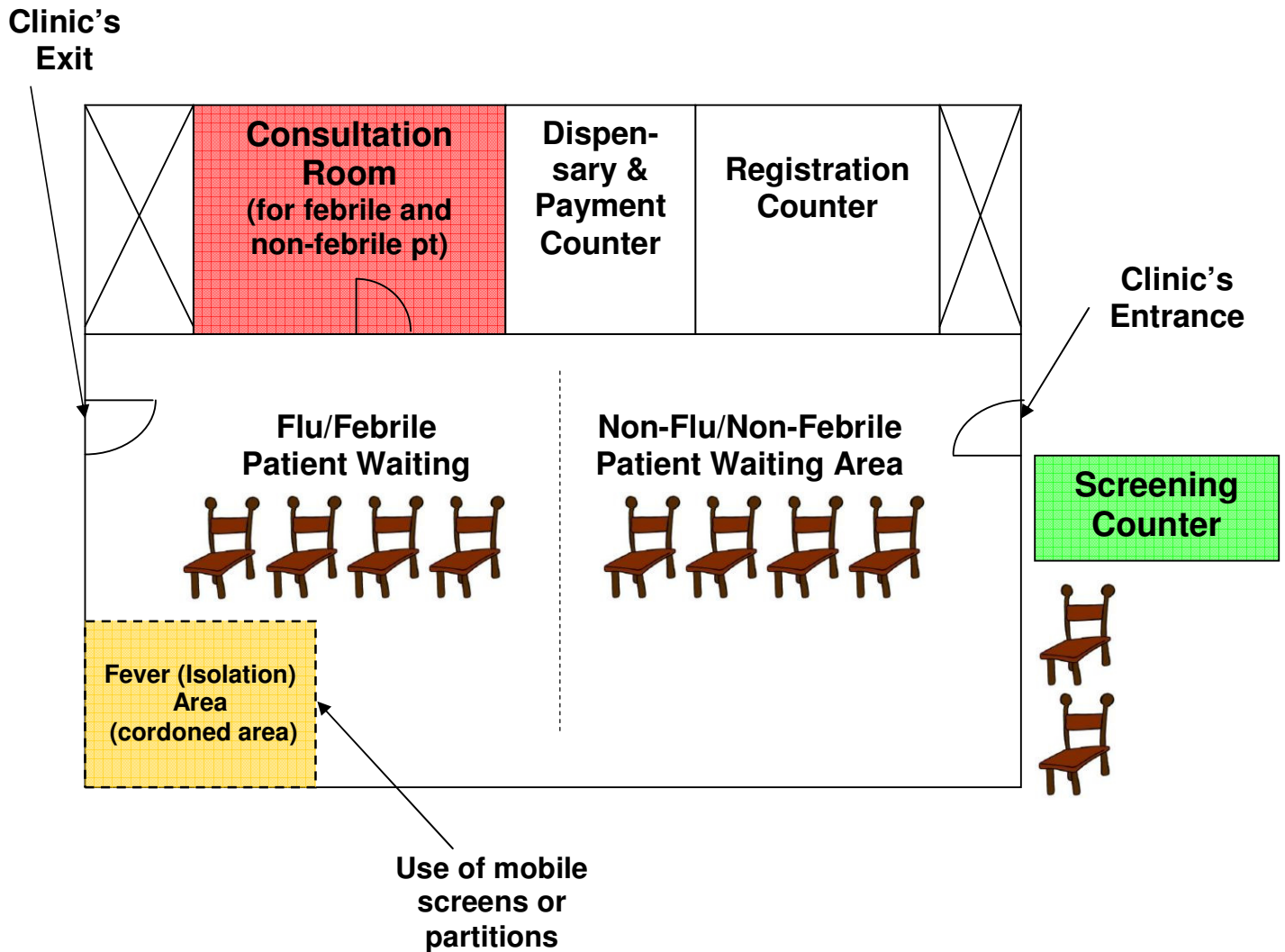
SCHEMATIC LAYOUT OF A CLINIC IN AN INFLUENZA PANDEMIC

(FOR CLINICS WITH 2 OR MORE CONSULTATION ROOMS)



SCHEMATIC LAYOUT OF A CLINIC IN AN INFLUENZA PANDEMIC

(FOR CLINICS WITH 1 CONSULTATION ROOM)



GUIDELINES FOR THE USE OF PERSONAL PROTECTIVE EQUIPMENT (PPE) IN RELATION TO PROTECTION AGAINST INFLUENZA IN HEALTHCARE SETTINGS DURING AN INFLUENZA PANDEMIC

(Ref: MOH Influenza Pandemic Readiness and Response Plan, May 2007, www.moh.gov.sg)

1. The risk levels for Health Care Workers¹⁰ (HCWs) have been classified according to the nature of the role provided by the person working in the healthcare environment in relation to the likelihood of close contact with person(s) with potential influenza. The nature of the roles of HCWs working in the healthcare environment is as follows:
 - a. HCWs who can maintain more than 1 metre contact distance from patients with potential influenza.
 - b. HCWs who may encounter occasional situations where they may come into close contact¹¹ with patients with potential influenza.
 - c. HCWs who are likely to come into close contact with patients with potential influenza but who are not involved in procedures where aerosolization of secretions is produced.
 - d. HCWs who are likely to come into close contact with patients with potential influenza and who also have a high likelihood of contact with respiratory secretions, particularly from aerosolization.
2. PPE requirements in relation to risk levels at *DORSCON ORANGE* to *BLACK* and details of the respective healthcare environments are shown in Table 1. The PPE requirements may be stepped up if the situational assessment of the risk is deemed higher.
3. PPE requirements supplement and do not replace standard precautions and best practices for infection control.
4. **Standard Precautions.** Standard Precautions are designed to reduce the risk of transmission of micro-organisms from both recognized and unrecognized sources of infection in the healthcare setting. 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 emphasizes 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. Standard precautions include:

¹⁰ Includes administrative and other support staff.

¹¹ A distance of less than or equal to 1 metre.

- a. **Hand Hygiene.** Hand washing is the single most important method of infection control. HCWs should already be familiar with the 7 steps to hand washing. Thereafter, hands should be dried thoroughly, preferably with a disposable hand towel. Alternatively, a hand rub may be used if soap and running water are not available.
- b. **Gloves.** Gloves are to be worn when touching blood, body fluids, secretions, excretions and contaminated items and also before touching mucous membranes and non-intact skin. Gloves are to be removed promptly after use, before touching non-contaminated items and environmental surfaces and before attending to another patient.
- c. **Mask.** Masks must be worn during close contact with patients with acute febrile respiratory illnesses or pandemic influenza. N95 masks are recommended. Otherwise, a surgical mask would suffice for low risk settings.
- d. **Eye Protection.** Eye Protection (goggles or face shields) should be worn during close contact (<1m) with influenza patients when carrying out invasive procedures with risk of aerosolization to prevent aerosolized droplets from coming into contact with the mucus membranes of the eyes.
- e. **Gown.** Gowns are to 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. A soiled gown should be removed as promptly as possible and HCWs should wash their hands thereafter to avoid transfer of micro-organisms to other patients or the environment. Gowns should also normally be changed in between patients. However, in *DORSCON RED* when dealing with large numbers of influenza patients, gowns need only be changed when soiled.

**Table 1 - GUIDELINES ON USE OF PERSONAL PROTECTION EQUIPMENT (PPE) FOR HEALTHCARE WORKERS (HCWs)
IN RELATION TO PROTECTION AGAINST PANDEMIC INFLUENZA IN HEALTHCARE SETTINGS
(DORSCON ORANGE[^]/RED/BLACK)***

Risk Level	Nature of Role of HCWs Working in the Healthcare Environment	Healthcare Environment	Hand Hygiene [#]	Masks	Gloves	Gown**	Eye Protection	PAPR
Medium	People who, due to the nature of their job, may be unable to maintain >1m contact distance from another person	Offices with no patient contact, Tea rooms in wards	Yes	Surgical				
Medium-High	People who, due to the nature of their job, cannot maintain at least >1m contact distance from patients	Primary healthcare and specialist outpatient clinics, Non-Isolation Wards, Ambulance, Pharmacies, Operating Theatres	Yes	N95	Yes	Yes	Yes If splashes likely	
High	People who, due to the nature of their job, cannot maintain at least 1m contact distance from patients AND have a high likelihood of potential contact with aerosolized respiratory secretions from invasive procedures – ventilation, airway suctioning, intubation, nasopharyngeal aspiration, bronchoscopy etc.	Emergency Dept, Intensive Care Units, Isolation Areas/Rooms, Influenza Wards, Radiology Dept	Yes	N95	Yes	Yes	Yes	PAPR is optional. It should be used by those trained and certified to use PAPR

Notes:

(1) Patients need only don surgical masks and not N95 masks.

(2) [^]PPE requirements apply to healthcare institutions with suspect/probable/confirmed cases of pandemic influenza. Healthcare institutions without any cases are to continue to adopt PPE requirements as per DORSCON Yellow (PPE guidelines applicable in *DORSCON YELLOW* are available in MOH Influenza Pandemic Readiness and Response Plan, Mar 2007, www.moh.gov.sg)

(3) *PPE may be stepped up by the individual institution if the situational assessment of the risk is deemed higher. Use of **hair cover** during aerosol-producing procedures is optional.

(4) ** From DORSCON Red onwards, gowns need to be changed only when soiled by blood or other body fluids.

(5) [#]Hand Hygiene refers to hand washing or the use of hand rubs.

PATIENT SCREENING FORM

(To be completed at Flu Screening Counter)

Date & Time of Visit:	
NRIC/Work Permit/PP No:	
Name:	
Address:	
Contact Numbers	
Home:	
Mobile:	
Temperature:	
Do you have the following symptoms: <i>(WILL BE PROVIDED BY MOH WHEN NEEDED)</i>	
Have you received treatment for flu previously? When?	

HEALTH CHECK SYSTEM (HCS) CHECK LIST AND REPORT MODULES USER MANUAL (Ver 1.0)

1. INTRODUCTION

1.1 Purpose

The purpose of this user manual is to guide users on how to use the Health Check System Check List module and Report module.

1.2 Scope

The scope of the manual is to provide information on the use of Health Check System Check List functions and Report functions.

1.3 Overview

This manual provides the description of Check List and Reports step by step approach in executing the following functions:

1. Add Patient Information / Check List
2. Search the Patient Information
3. Summary Report / Management Report
4. Clinic Report / Management Report

1.4 Login

Doctors can access the Health Check System via the Health Professionals Portal (https://www.hpp.moh.gov.sg/HPP/login_doc_ssl.jsp) or users can access Health Check System 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

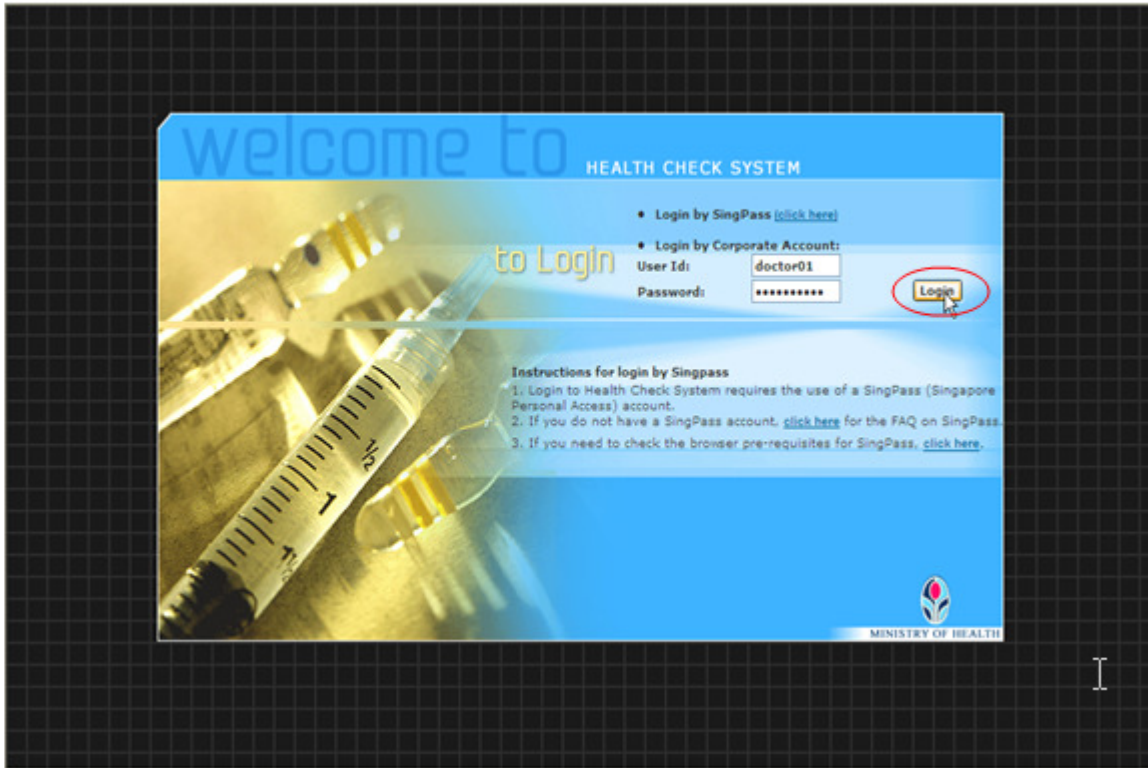
2.1.1 Description of Function

This function allows on-line submission of Patient information, Check List Question and symptoms.

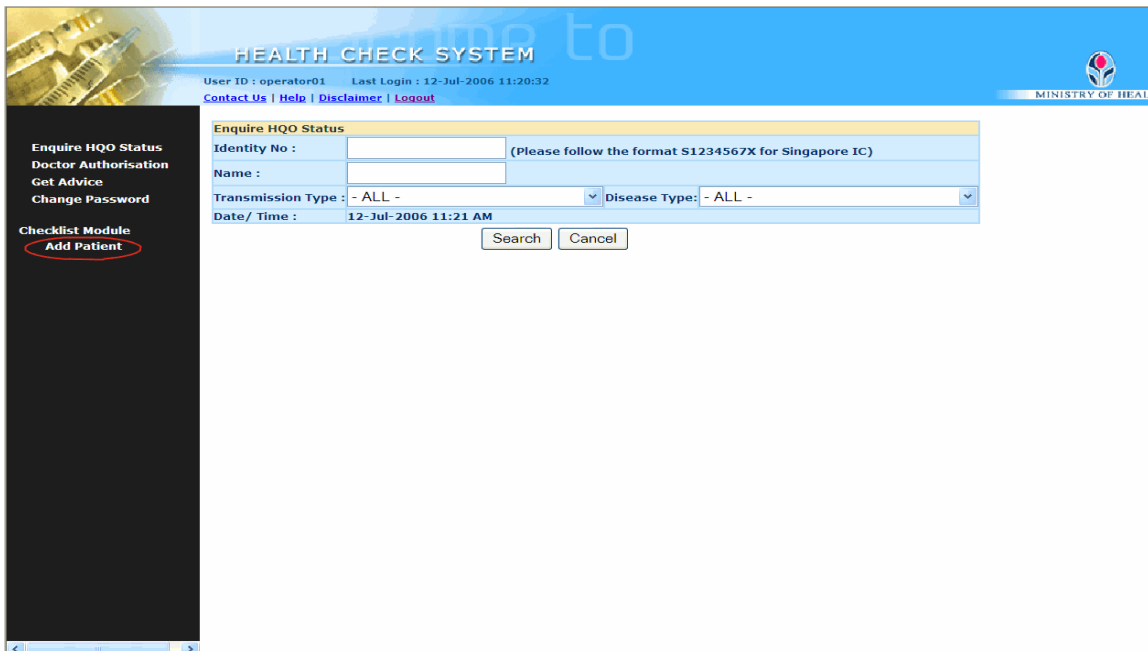
2.1.2 Add Patient

Steps:

1. HCS Internet website



2. HCS Internet / intranet Website -> Checklist Module -> Add Patient



3. On the displayed page, enter the Patient Identity No.(NRIC) , Name and click on the **Add Patient** Button

HEALTH CHECK SYSTEM

User ID : doctor01 Last Login : 05-Dec-2006 21:09:18

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MINISTRY OF HEALTH

Checklist Module :: Add / Search Patient

Patient Information

Identity No.: S1234567D (Please follow the format 51234567X for Singapore IC)

Name : JOHN

Date/ Time : 05-Jan-2007 09:37 PM

Search Patient Add Patient Clear

4. On the displayed Page, fill up the prescription date (if you want to change, otherwise default is system date) and click on the **Add Patient** button.

HEALTH CHECK SYSTEM

User ID : doctor01 Last Login : 05-Dec-2006 21:09:18

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MINISTRY OF HEALTH

Checklist Module :: Add Patient Information

Doctor Name : Sathish Balasubramaniam

Clinic : Sengkang Polyclinic

Patient Information

Identity Type: NRIC/ Work Permit No. Foreign Passport

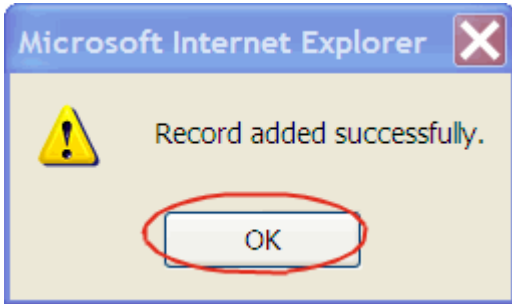
Identity No.: S1234567D Name : JOHN

Tamifu Prescription

Prescription Date (follow the format DD/MM/YYYY) 05/01/2007

Add Patient Cancel

5. If there is no error, the system will prompt “Record added successfully “ message. Click on the **OK** button.



6. System will automatically redirect to the Search Patient page.

2.2 Search Patient

2.2.1 Description of Function

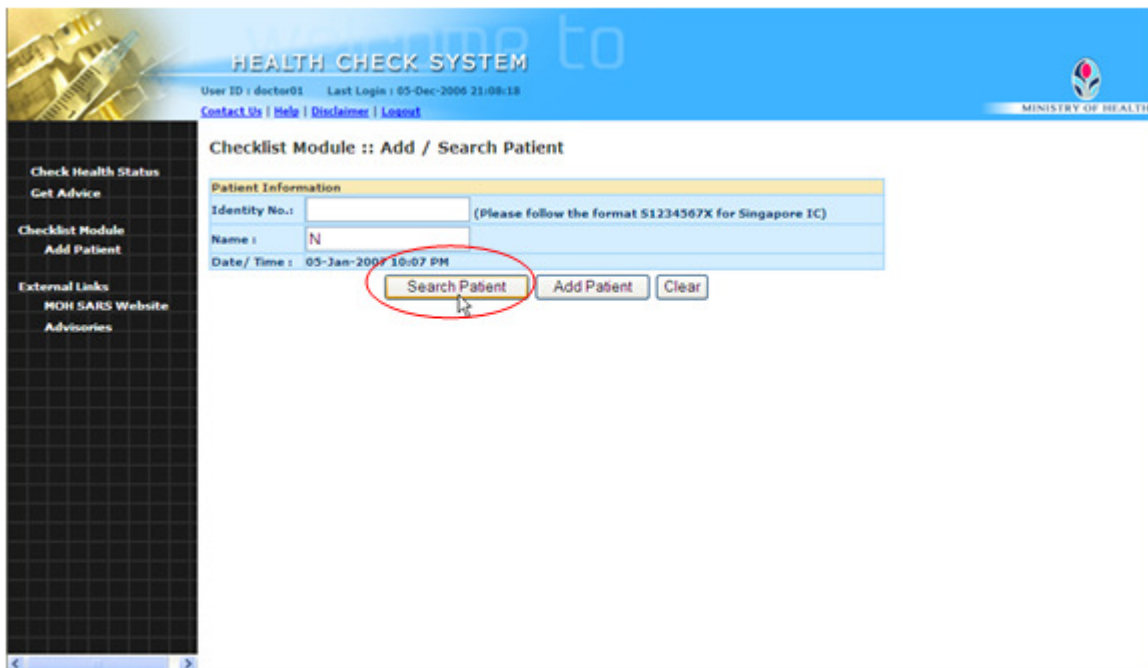
This function allows searching of Patient information and doctor information.

2.2.2 Search Patient

Steps:

1. HCS Internet / intranet Webiste -> Checklist Module -> Add Patient

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



- System displays the list of results based on the selection criteria, for example, if Name is "N", system shall displays the list of patients with "N" in their name.

HEALTH CHECK SYSTEM
 User ID : doctor01 Last Login : 05-Dec-2006 21:08:18
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Checklist Module :: Add / Search Patient

Patient Information

Identity No.: (Please follow the format S1234567X for Singapore IC)
 Name :
 Date/ Time : 05-Jan-2007 10:08 PM

Search Result(s) :

S/NO	Date of Consultation	Identity No	Name	Consulted By
1	05/01/2007	S1234567D	JOHN	Sathish Balasubramaniam
2	04/12/2006	F0117929L	Swee Leong	Ang Teo Kiang
3	03/12/2006			Ang Teo Kiang

- On the displayed page, click on the "Consulted By" Link to view the Doctor information.

HEALTH CHECK SYSTEM
 User ID : doctor01 Last Login : 05-Dec-2006 21:08:18
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View User

User ID: doctor01
 Name: Sathish Balasubramaniam
 NRIC: S7385699Z
 Contact No: 65566213
 Clinic Name: Sengkang Polyclinic

4. On the displayed page, click on the **Back** Button, system shall redirect to the previous search list page.

2.3 Summary Report

2.3.1 Description of Report

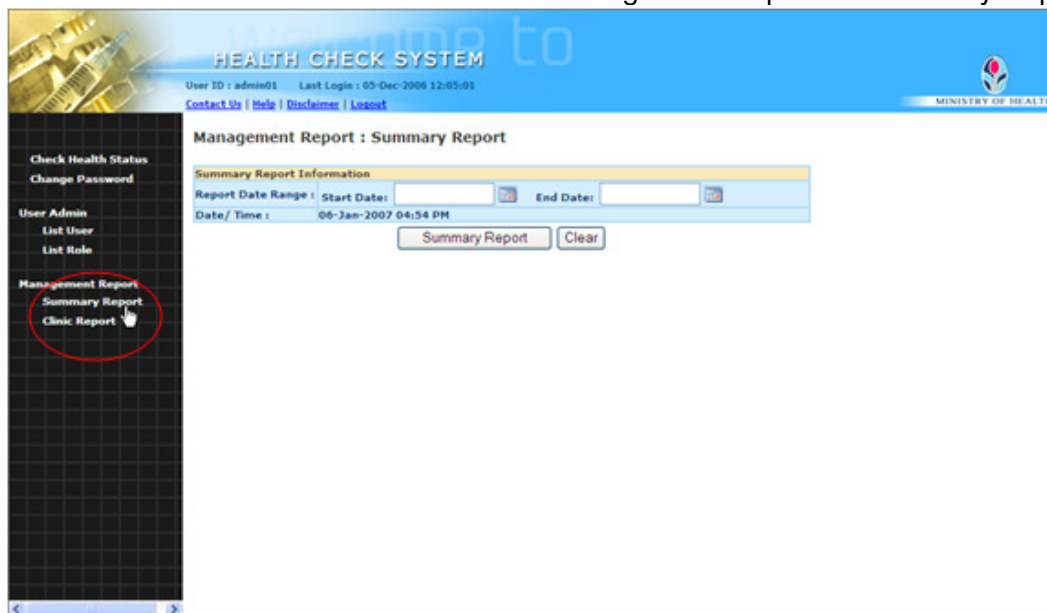
This Report display information regarding No. of patients visited the clinic based on the start date and end date search.

Steps:

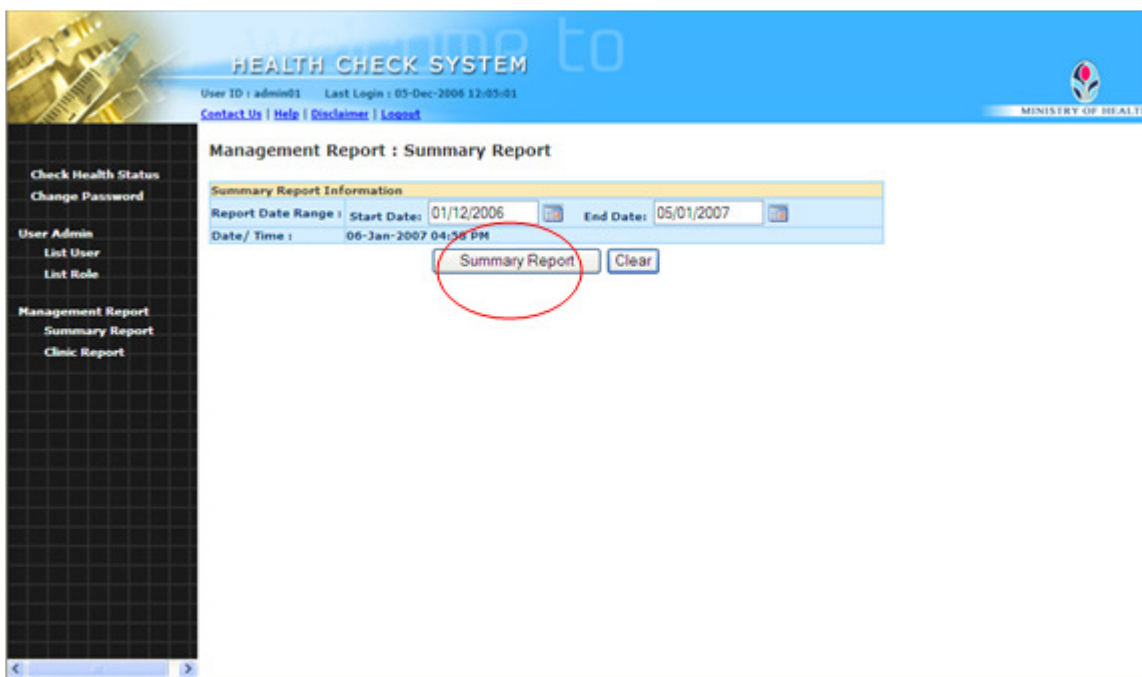
1. HCS Internet / intranet website



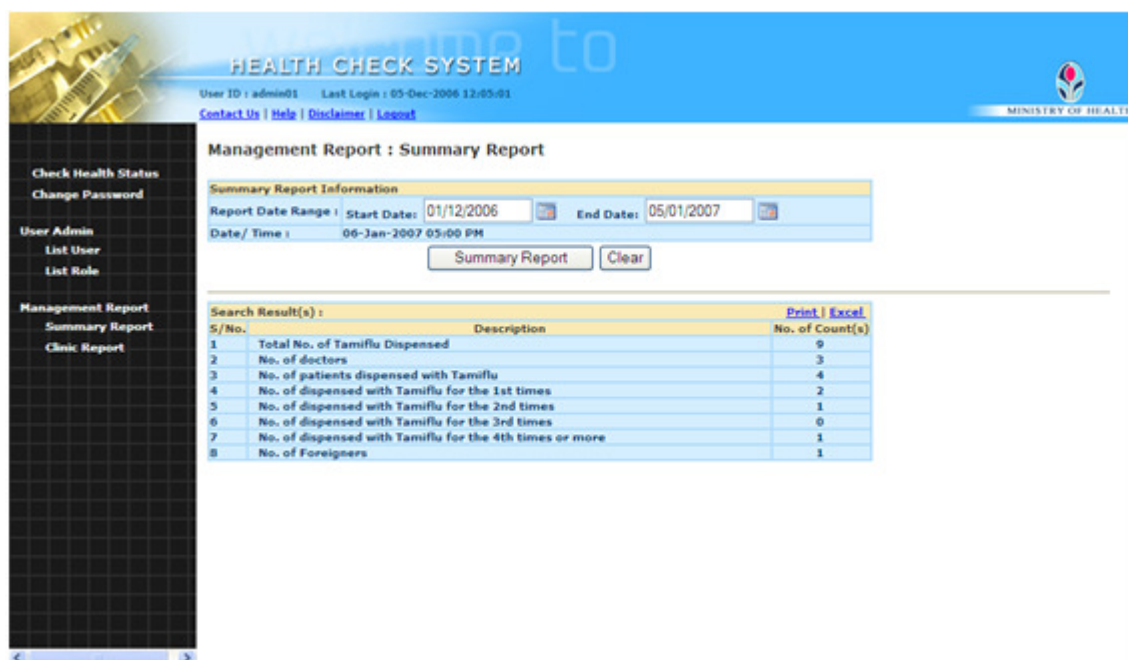
2. HCS Internet / intranet Website -> Management Report -> Summary Report



- On the displayed page, enter the Start Date and End Date then click on the **Summary Report** button.



- On the displayed Page, Summary Report information displayed.



- On the displayed Page, click **Excel** hyperlink for generate excel file.

HEALTH CHECK SYSTEM
 User ID : admin01 Last Login : 03-Dec-2006 12:05:01
 Contact Us | Help | Disclaimer | Logout

Management Report : Summary Report

Summary Report Information
 Report Date Range : Start Date: 01/12/2006 End Date: 05/01/2007
 Date/ Time : 06-Jan-2007 05:00 PM
 Summary Report Clear

Search Result(s) :

S/No.	Description	No. of Count(s)
1	Total No. of Tamiflu Dispensed	9
2	No. of doctors	3
3	No. of patients dispensed with Tamiflu	4
4	No. of dispensed with Tamiflu for the 1st times	2
5	No. of dispensed with Tamiflu for the 2nd times	1
6	No. of dispensed with Tamiflu for the 3rd times	0
7	No. of dispensed with Tamiflu for the 4th times or more	1
8	No. of Foreigners	1

- Click **Open** button to view the excel report in the browser.

File Download

Do you want to open or save this file?

Name: CHECKLIST_SUMMARY_1168074495919.xls
 Type: Microsoft Excel Worksheet, 5.50KB
 From: sathish-b2

Open Save Cancel

Always ask before opening this type of file

While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not open or save this file. [What's the risk?](#)

- Generated Checklist Summary Report in excel format in the browser.

A1 CheckList Summary Report					
	A	B	C	D	E
1	CheckList Summary Report				
2					
3		Start Date : 01/12/2006			
4		End Date : 05/01/2007			
5					
6	S/N	Description	Count		
7	1	Total No. of Tamiflu Dispensed	9		
8	2	No. of doctors	3		
9	3	No. of patients dispensed with Tamiflu	4		
10	4	No. of dispensed with Tamiflu for the 1st times	2		
11	5	No. of dispensed with Tamiflu for the 2nd times	1		
12	6	No. of dispensed with Tamiflu for the 3rd times	0		
13	7	No. of dispensed with Tamiflu for the 4th times or more	1		
14	8	No. of Foreigners	1		
15					
16					
17					
18					

2.4 Clinic Report

2.4.1 Description of Report

This Report display information's like Clinic Name, Address, Contact No and No. of patients visited the clinics based on start date and end date search.

Steps:

- HCS Internet / intranet Webiste -> Management Report -> Clinic Report
On the displayed page, enter the Start Date and End Date on the **Clinic Report** button.
(if Clinic Name is empty like "-", assumes report will generate for all clinics)

HEALTH CHECK SYSTEM
User ID : admin01 Last Login : 06-Jan-2007 16:52:16
[Contact Us](#) | [Help](#) | [Disclaimer](#) | [Logout](#)

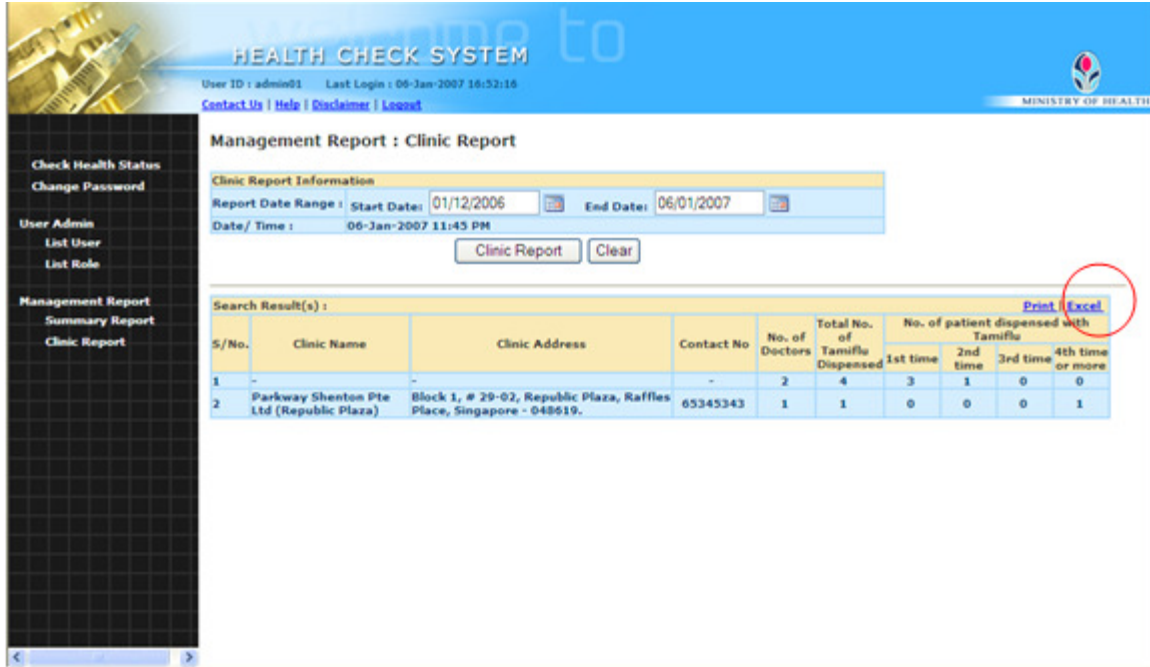
Management Report : Clinic Report

Clinic Report Information
Report Date Range : Start Date: 01/12/2006 End Date: 06/01/2007
Date/ Time : 06-Jan-2007 11:45 PM

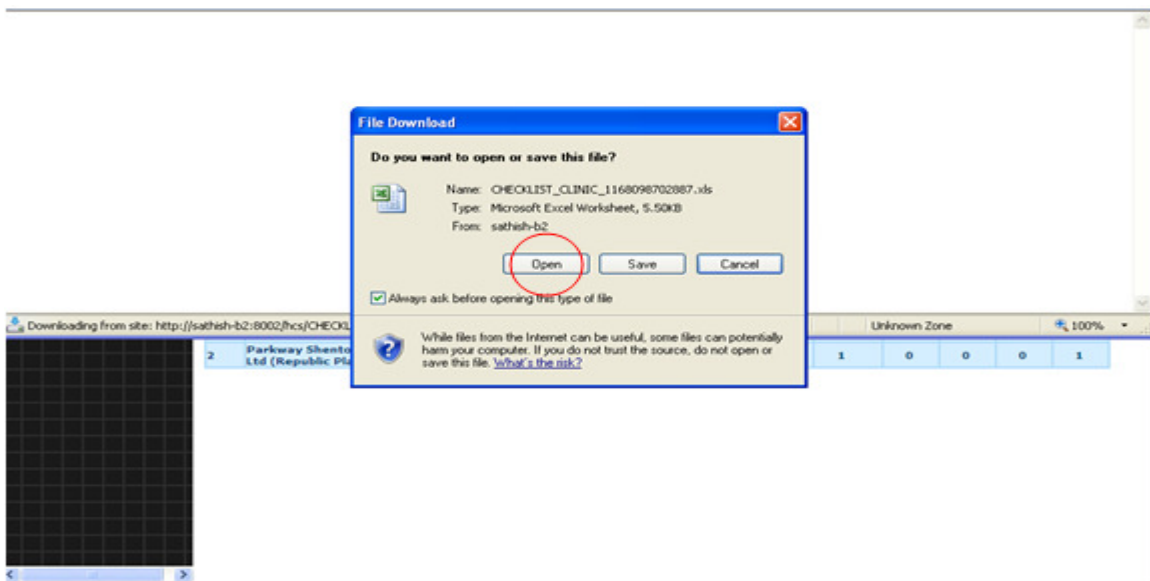
Search Result(s) : [Print](#) | [Excel](#)

S/No.	Clinic Name	Clinic Address	Contact No	No. of Doctors	Total No. of Tamiflu Dispensed	No. of patient dispensed with Tamiflu			
						1st time	2nd time	3rd time	4th time or more
1	-	-	-	2	4	3	1	0	0
2	Parkway Shenton Pte Ltd (Republic Plaza)	Block 1, # 29-02, Republic Plaza, Raffles Place, Singapore - 048619.	65345343	1	1	0	0	0	1

2. System displays the list of results based on the selection criteria, for example, if Start Date is "01/12/2006" and End Date is "06/01/2007", system shall displays the list of patients count based on selection criteria. On the displayed Page, click **Excel** hyperlink for generate excel file.



3. Click **Open** button to view the excel report in the browser.



4. Generated Checklist Clinic Report in excel format in the browser.

	A	B	C	D	E	F	G	H	I	J
1	CheckList Clinic Report									
2										
3										
4	Start Date : 01/12/2006									
5	End Date : 06/01/2007									
6										
7	S/N	Clinic Name	Clinic Address	Contact No	No. of D	Total No	1st time	2nd time	3rd time	4th time
8	1	-	-	-	2	4	3	1	0	0
9	2	Parkway Shenton Pte Ltd	Block 1, # 29-02, Republic P	65345343	1	1	0	0	0	1
10										
11										
12										

CLEANING GUIDELINES FOR HEALTHCARE FACILITIES

(Ref: MOH Influenza Pandemic Readiness and Response Plan, Mar 2007, www.moh.gov.sg)

1. While large droplet spread is the most common mode of influenza transmission, aerosol spread and transmission through fomites and gross environmental contamination is possible. The cleaning guidelines should be applied to work areas in the healthcare setting e.g. X-ray and other clinical service areas.
2. These cleaning guidelines are meant to provide general instructions on cleaning procedures in an influenza pandemic environment and more specific instructions for certain areas potentially contaminated by an influenza 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 contractors, e.g. kitchen, laundry, cleaning and maintenance contractors, in healthcare institutions. All contractors working in a healthcare environment should be aware of the guidelines.

GENERAL CLEANING PRINCIPLES

4. Cleaning is important to reduce the level of contamination on all surfaces and minimise the transmission of infection by indirect contact with surfaces contaminated with droplets.
5. Disinfectant should be applied using a damp cloth, rinsed with water, and then dried. They 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.
6. 1% Sodium Hypochlorite (diluted bleach*) should be left for at least 10 minutes but no longer than 30 minutes, thoroughly rinsed off and the area dried. Sodium Hypochlorite (bleach) is a corrosive substance that will harm some surfaces such as removing the colour from materials or damaging wood. (*Household bleaches are generally 3-6% sodium hypochlorite).
7. All surfaces must be dried after they have been cleaned and rinsed, as damp surfaces attract contaminants.

USE OF PERSONAL PROTECTIVE EQUIPMENT (PPE) WHEN CLEANING

8. The following guidelines should be followed in the use of PPE when cleaning:

- a. Gloves should always be worn when cleaning.
- b. Full PPE is not required for routine cleaning.
- c. Cleaning an environment where a known influenza case has been should involve the use of gloves, disposable gown, an N95 mask, and goggles.
- d. Single use (disposable) gloves should not be reused or washed.
- e. Any cleaning activity likely to generate aerosols should not be undertaken without the cleaner and those in the room wearing an N95 mask and goggles.
- f. Full PPE consists of
 - (1) N95 masks
 - (2) Caps or disposable head covers
 - (3) Goggles
 - (4) Gloves
 - (5) Overshoes
 - (6) Plastic apron
 - (7) Coverall or gown
 - (8) Boots (where appropriate)

9. Personal Protective Equipment (PPE) should always be considered potentially contaminated following cleaning, and should be removed and disposed of in a proper manner. In the healthcare setting, used PPE should be placed into linen bags for laundering or contaminated waste bags for incineration.

HAND WASHING

10. Hand washing is an essential part of personal hygiene and is essential in preventing the transmission of infection. Proper hand washing and drying should be carried out:

- a. before and after preparing food
- b. after going to the toilet
- c. before and after eating

- d. after blowing your nose
- e. after smoking
- f. after using your hand when coughing or sneezing
- g. for hospital and laboratory workers, after removing personal protective equipment (PPE)

11. After washing your hands it is important to "pat" dry your hands thoroughly. Rubbing your hands dry can cause abrasions or dermatitis. If hand washing is not possible immediately, a 70% alcohol-based hand gel/solution could be used as an interim measure, but hands should be washed as soon as possible after the above activities.

HEALTH CARE FACILITIES

12. Equipment, Place for Disinfection and Transport.

- a. When an influenza patient is admitted, all unnecessary cleaning, and therefore potential exposure to contaminated material, should be avoided. This could be done by using single-use equipment, such as eating utensils and medical equipment.
- b. The healthcare facility where an influenza case is admitted should preferably have an anteroom for separate containers for waste and the disinfection of equipment, including goggles. Separate containers with close fitting lids for sealed bags of linen and waste should be used for transport outside of the isolation area.
- c. Where single-use medical equipment is not available, there should be dedicated equipment for each patient in isolation.

13. Cleaning Procedures.

- a. Cleaning staff should be fully instructed on how to wear and dispose of PPE and how to minimize the risk of transmission of infection whilst cleaning.
- b. 1% Sodium hypochlorite solution (e.g. diluted bleach) should be used on surfaces after general cleaning procedures for environmental disinfection. All surfaces close to the patient are likely to be heavily contaminated, particularly those around the patient's bed, such as the bedside table, bed stand, doorknobs, medical equipment (such as IV poles), and all other horizontal surfaces, including the floor.

- c. Food scraps should be discarded into a contaminated waste bag.
- d. Medical equipment should be cleaned promptly after use. Such equipment should be placed in containers with a close-fitting lid and taken to the cleaning area immediately. Soaking in bleach solution could be considered if cleaning cannot be done immediately. Immersion of medical equipment in 1% sodium hypochlorite (diluted bleach) solution for at least 10 minutes and no more than 30 minutes prior to cleaning will make the equipment safe to handle. Medical equipment that can be immersed should be rinsed under warm running water before cleaning to remove gross soiling. Cleaning should then be carried out using warm water and detergent, rinsed in hot water [70 degrees Celcius (°C)], and dried. Items should be kept below the surface of the water to prevent the creation of aerosols.
- e. Equipment that cannot be immersed under running water should be wiped over with a cloth dampened in warm water. It should then be washed using a cloth dampened in warm water and detergent, rinsed using a cloth dampened in hot water and dried. Equipment should then be wiped over with a cloth dampened in 70% ethyl alcohol and dried. Once clean, medical equipment that should be sterilized can be packaged and sterilized, or where packaging is not available, just sterilized.

14. Bathroom and Toilet Disinfection.

- a. Clean common toilets hourly. Wash the bathroom floor with disinfectant and flush with water and allow the floor to air-dry.
- b. Toilets in influenza isolation rooms are only meant for use by the influenza patient, and may be cleaned once a day as cleaners should not be moving in and out of isolation areas.
- c. Inspect and repair any leaking pipes immediately.

15. General Cleaning.

- a. Clutter should be avoided to minimize the number of items that could potentially be contaminated by an influenza case.
- b. All surfaces, including reception desks, tables, stair rails, floors, and elevators should be cleaned at least daily using detergent and warm water, rinsed, and dried. It is best to dry all surfaces after cleaning as moisture attracts contaminants.
- c. Single use (disposable) gloves, N95 masks and gowns should be worn for all cleaning activities, particularly for procedures that may involve

contact with bodily fluids. Hands should be washed after cleaning procedures.

d. Public washrooms and food consumption/service areas should be cleaned frequently and regularly, as determined by traffic and use. Supervisors should undertake regular monitoring to ensure that existing hygiene standards are strictly enforced.

16. **Floors and Floor Coverings.** To avoid generating dust and aerosols in the air:

- a. Carpets or rugs/mats may be vacuumed using a cleaner that does not throw dust into the air or steam cleaned if soiled by bodily fluids.
- b. Do not hang up and swat to clean as this will create aerosols.
- c. Hard floor surfaces should be mopped with a damp mop.
- d. Use steady sweeping motions to avoid the creation of aerosols.
- e. The bucket used for mopping should have a wringer attached.
- f. Mops should not be hand wrung to avoid generating aerosols.

17. **Furnishings.**

a. These include items in a room that may need cleaning such as curtains, drapes, screens, lampshades and furniture items. Curtains and drapes (and screens in health care facilities) should be washed or steam cleaned if contaminated.

b. When laundering linen from a room where a possible influenza case has been, gloves, an N95 mask, goggles, and a disposable gown over a long sleeved garment (e.g. long-sleeve gown or coverall) should be worn. In this circumstance, linen should not be sorted, shaken, or excessively handled. To avoid the generation of contaminated aerosols, linen should not be tossed or thrown, but placed gently into coded laundry bags and washing machines.

c. In the hospital setting, place heavily contaminated linen in separate leak-proof container (with lid) for transport to the laundry.

18. **Laundry.**

a. Laundries should be cleaned at least daily. This process should involve cleaning all surfaces and all laundry machinery including washers, dryers and ironing presses, with detergent and warm water.

b. Linen (sheets, cotton blankets) should be washed in hot water (70°C to 80°C) and detergent, rinsed and dried preferably in a dryer or in the sun. Linen should be ironed at high temperatures (60°C). Woollen blankets should be washed in warm water and dried in the sun, in dryers on cool temperatures or dry-cleaned.

c. Quilts can be dry-cleaned. Where appropriate, quilts may be washed in hot water (70°C) and detergent, rinsed and dried preferably in a dryer or in the sun.

19. **Bedding.** Mattresses and pillows with plastic covers can be wiped over as for surface cleaning. Mattresses without plastic covers may be steam cleaned if contaminated with bodily fluids. Pillows can be either washed using the standard laundering procedure described above, or dry cleaned if contaminated with bodily fluids.

20. **Eating Utensils.** Eating utensils, including all crockery and cutlery, should be washed using hot water (70°C) and detergent, rinsed and dried. Where available, eating utensils could be cleaned in a dishwasher using a hot water cycle (reaching 60°C).

21. **Air-Conditioning Systems.** Air-conditioning systems should be cleaned according to the manufacturer's instructions. Filters should be changed according to the manufacturer's instructions.

22. **Vehicles.** When cleaning a vehicle where a potential influenza case has been, the following steps should be taken:

a. The air conditioning system should be turned off during cleaning;

b. An N95 mask should be worn for any activity that may create aerosols or dust clouds during cleaning;

c. As for all cleaning, gloves should be worn;

d. Linen (tray cloths and blankets) and towels should be placed in bags inside vehicle and the bags sealed before being removed for laundering

e. Staff must not shake linen, towels or curtains vigorously when handling them

f. Filters should be changed according to the manufacturer's instructions.

GENERAL DEFINITIONS

23. **Cleaning.** A process that is intended to physically remove microorganisms (and the organic material on which they thrive) and other contaminants from objects.

24. **Disinfection.** A process that is intended to kill or remove pathogenic microorganisms but which cannot usually kill bacterial spores.

25. **Sterilization.** A process that is intended to kill or remove all types of microorganisms with an acceptably low probability of an organism surviving on any article.