United Nations Medical Directors

Influenza Pandemic Guidelines

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PREFACE

The United Nations (UN) Medical Directors developed this document to provide guidance for protecting the health of UN staff and their dependants worldwide in the case of an influenza pandemic. Technical input was provided by the World Health Organization (WHO) and other public health and infectious disease experts.

These Guidelines provide a foundation for planning to ensure a timely, consistent and coordinated medical response across the UN system to a possible global threat. This new version updates, significantly revises, and replaces the “United Nations Medical Services Staff Contingency Plan Guidelines For An Influenza Pandemic” initially released in October 2005, with subsequent revision in March 2006.

The most notable and significant development in UN preparedness since the previous revision has been the mainstreaming of many crucial non-medical aspects of planning (especially business continuity) into the responsibilities of management and administration, allowing medical services to focus more on their primary areas of expertise and responsibility. The emphasis of this revision is therefore on the medical aspects, although the importance and priority of non-medical issues is still highlighted. Due to the more general nature of the previous issue, a supplementary and medically detailed document, the “United Nations Medical Services Guidelines for Medical Professionals for an Influenza Pandemic” dated 1 September 2006, was also issued at that time. As the current revision is more medically focused, the content of the Guidelines for Medical Professionals has been updated and included in the current document, mostly in the Annexes.

This revision of the Guidelines also incorporates experience gained in implementing the guidance contained in preceding versions, particularly that of field duty stations, which in many instances have developed noteworthy solutions to their specific problems. These Guidelines remain a “living” document and as new research and information emerge, it will be incorporated into future updates.
EXECUTIVE SUMMARY

1. The present “United Nations Medical Services (UNMS) Influenza Pandemic Planning Guidelines” has been prepared to assist those responsible for public health and medical preparedness in UN offices to respond to threats and occurrences of pandemic influenza. It updates, significantly revises and replaces the “UNMS Staff Contingency Plan Guidelines For An Influenza Pandemic”\(^1\) and the “UNMS Guidelines for Medical Professionals for an Influenza Pandemic”\(^2\). This revised version draws on lessons learned from previous preparedness efforts, and incorporates new scientific and technical information which has evolved since October 2005.

2. While the guideline is mainly intended for use by persons responsible for the development and implementation of health services in UN offices, particularly that of field duty stations, partners in areas outside of the health sector (e.g. human resources, finance, security, communications) should also have knowledge of the health-related strategies used to mitigate the consequences of a pandemic. Additionally, pandemic plans should be individualized to take into account the local situation and pandemic plans of local and/or national authorities. Recommendations that are superseded by the actions of local and/or national health authorities should be adapted accordingly.

3. Compared to previous versions, this guideline focuses on the medical aspects of pandemic planning and less on administration and business continuity. This does not diminish the importance of business continuity planning, which remains a cornerstone of organizational preparedness. Information from previous guidelines has been amalgamated to form three new Sections and eight new Annexes. Material has been substantially reorganized, and the structure and content now reflect how offices should prioritize their strategies in the planning process.

4. The following provides a summary for each of the Sections and Annexes. It also introduces the new elements that have been incorporated into this revision.

Sections I-III

I: Introduction
Section I describes the purpose of the guidelines and provides the background and context for medical services pandemic planning within the wider UN organization, with emphasis on the importance of business continuity planning as part of overall pandemic preparedness. New to this chapter is the recommendation to use the United Nations Senior Influenza Coordinator’s (UNSC) planning assumptions (Table 1) as a basis for operational planning of health service provision and a set of five objectives for medical services pandemic planning.

II. Elements of a Preparedness Plan
Section II details four key areas that offices need to consider when planning for an influenza pandemic. These are:

Planning and Coordination
A 3-level pandemic response framework serves as the platform for coordination of actions of duty stations. While this is likely to be associated with changes in the WHO global pandemic

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\(^1\) First released in October 2005, and later updated in March 2006
\(^2\) Dated September 2006
alert levels, decisions on which preparedness mode is appropriate for a particular duty station will be made according to local circumstances. This is a shift from previous guidance that directly linked local actions to be taken with WHO’s global pandemic alert levels 1-6.

**Public and Occupational Health Measures**
This section details the non-pharmaceutical measures (e.g. personal hygiene, social distancing, infection control measures, use of personal protective equipment, and travel restrictions) that staff need to adhere to during a pandemic. New to this section is a recommendation to categorize staff into five Risk Categories depending on their risk of exposure to the virus in an occupational context. Specific type/s of personal protective equipment (PPE) should be made available to staff depending on the Risk Category that they fall under.

**Medical Interventions**
This section gives guidance to medical staff on medical consultation and advice, as well as information on the use and procurement of medications (antiviral drugs, antipyretics, antibiotics and vaccines). This section includes a recommendation to ensure availability of a stockpile of oseltamivir (Tamiflu) for 40% treatment doses for staff and dependents (25% expected ill and 15% as buffer) and 6-week prophylactic doses for staff belong to Risk Categories 1, 2 and 3 (as opposed to all “critical staff” in the previous guidelines). Additionally, given the recent availability of pediatric strength oseltamivir (Tamiflu) capsules, the stockpiling of pediatric capsules is recommended upon expiry of current oseltamivir (Tamiflu) supplies.

**Communication and Training**
This section emphasizes the importance of staff education and communication to effect behavior change.

**III: Action Plan**
Section III outlines a series of recommended measures to be taken by duty stations in accordance with three pandemic response modes: Level 1 Readiness Mode, Level 2 Crisis Response Mode, and Level 3 Emergency Mode. Compared to the previous guidelines, the recommended actions listed have been significantly re-organized and revised, with more focus on the medical aspects. The recommended three levels of response mode replaces previous linking of actions to WHO global phases of pandemic alert. All offices should update their current pandemic preparedness plan with information from this revised table.

**Annexes 1-8**

**Annex 1: General Information for All Staff**
Annex 1 is a collation of previous material relevant to all staff (e.g. information on personal hygiene, travel advisory, list of six week supplies to be stocked). It is recommended that information contained in this Annex be distributed to all staff in the duty station.

**Annex 2: Infection Control Recommendations for Avian/Pandemic Influenza Patients**
Annex 2 provides interim guidance for protection of healthcare workers and caregivers involved in the care of patients with known or suspected avian and pandemic influenza. New in this Annex is an explanation of transmission-based precautions (Standard, Contact, and Droplet), and their application in the healthcare setting. A new figure showing the general principles of an isolation unit is now included, as is **Table 2**, which details the specific infection control precautions for avian versus pandemic influenza.
Annex 3: Recommendations on Personal Protective Equipment
Annex 3 provides guidance on the types of PPE recommended for healthcare workers providing care to avian/pandemic influenza infected patients, as well as recommended procedures for PPE placement and removal. Table 3 is an important new addition to the guidelines. It summarizes the specific type of PPE to be provided to staff, depending on the nature of their work and risk of exposure to the virus. Offices should identify the staff that fall into each of these Risk Categories³ and procure the types and quantities of PPE accordingly.

Annex 4: Clinical Algorithms for the Management of Infected Persons
Annex 4 presents a clinical algorithm for the initial screening, assessment, and management of patients with suspected novel influenza. It uses the WHO case definition for human infections with influenza A (H5N1) virus as the basis for assessment and triage of patients. The annex also presents self-care algorithms for adults and children when they need to care for themselves or their dependents at home.

Annex 5: Management of Close Contacts
Annex 5 describes general principles on the management of contacts, including the tracing, monitoring and quarantining of contacts. It is expected that specific recommendations on the management of close contacts will vary from location to location depending on the stage of pandemic and local medical resources, and they will be provided to duty stations as the pandemic situation unfolds.

Annex 6: Establishment of a Fever Clinic
Annex 6 gives guidance on how offices may establish a fever clinic during a pandemic. New to this section is a suggested list of supplies to be procured for such a clinic.

Annex 7: Information on oseltamivir (Tamiflu)
Annex 7 provides recommendations on the use of oseltamivir (Tamiflu) for treatment and prophylaxis. New to this annex is the inclusion of the renal impairment dose for patients and information on the contraindications and safety of the drug. The manufacturer’s directions for emergency compounding of oral suspension from Tamiflu capsules is also included for offices whose current stockpile has not expired and that have yet to purchase pediatric capsules. Guidance for possible extension of the shelf life of oseltamivir is included.

Annex 8: Procurement and Storage of Medical Supplies
Annex 8 provides a list of medical supplies to be procured by duty stations (Table 4), and gives guidance on how these supplies should be stored. Table 5 and 6 details the specific types of PPE to be procured for staff who fall under Risk Categories 1 and 2.

5. This guideline is a living document intended to promote a consistent and harmonized approach to medical services pandemic planning in the UN System. Each office should update the medical aspects of their current pandemic plan with new information from this guideline, and implement follow-up actions accordingly. Robust preparedness for the next pandemic also requires coordination with partners outside of the health area. Active engagement of all stakeholders to refine and better coordinate preparedness plans is strongly recommended.

³ In the occupational context
INTRODUCTION

1. The purpose of this document is to provide guidance for protecting the health of staff and their dependents under the circumstances of an influenza pandemic. A timely and effective medical response across the UN system will be an important part of the UN’s overall response to a pandemic, and will contribute to the enabling of Organizations to fulfill their mandates.

2. As these Guidelines focus on the medical aspects of planning and coordination, they should be seen in the context of organization wide plans\(^4\). Differences between Organizations, and from location to location, will require local adaptation or modification of these guidelines. Each UN Headquarters and duty station should develop its own plan within its customary Emergency Management structures and functional groups.

Background

3. Influenza is a viral respiratory disease affecting humans and certain animals. Normally, people are infected by human influenza viruses and not animal influenza viruses. Clinical disease ranges from infection with no symptoms to mild nonspecific illness to a variety of life threatening complications, including pneumonia.

4. On occasion, influenza virus from one species can trade genetic material with influenza viruses from another species in a process known as “re-assortment”. When viruses re-assort, a new hybrid is produced. This is known as antigenic “shift”. If this new subtype has genes from human influenza viruses that make it readily transmissible from human to human, the virus can spread worldwide within months (perhaps even weeks), leading to higher levels than usual of severe illness and mortality. In this situation, all age groups are vulnerable to infection, and there could be disruption to all sectors of society. Such a situation is called an influenza “pandemic”. Pandemics are different to usual influenza seasons and happen relatively infrequently.

5. For some years, there has been international concern that an avian or bird influenza virus known as influenza A (H5N1), which is circulating widely among birds may gain the ability to spread easily from person to person. If this occurs, it could lead to the first influenza pandemic of the 21st Century. Many of the prerequisites for the start of an influenza pandemic appear to be in place, although the virus still has not gained the ability for efficient and sustained human-to-human transmission.

6. Given the high level of global travel in modern times, a pandemic virus could spread to much of the world within weeks to months, leaving little time to prepare.

7. In all three 20th Century pandemics, substantially more young people died from pandemic influenza than when compared with regular influenza seasons. In the 1918 pandemic, the highest death rates and the largest total numbers of deaths occurred in previously healthy young adults. Despite advances in medical technology, these patterns suggest that the next pandemic could have a substantial impact on the workforce.

8. Depending on widely varying local medical infrastructure, vaccines and antiviral agents for pandemic influenza, as well as antibiotics to treat secondary infections could be in short supply during the initial phases of a pandemic. It will take several months or longer before a specific pandemic vaccine becomes widely available.

9. Depending on the severity of the viral strain, medical facilities could be overwhelmed by patients. Moreover, the health care workforce is likely to be reduced, since health care workers will also become ill and stay home to care for ill family members, as with other workers. For weeks at a time, significant shortages of personnel may occur, disrupting essential community services.

10. Offices in the United Nations need to plan for the possibility of a pandemic, and to consider how they will protect their staff, and continue to function under such conditions.

11. For more background information on influenza, see:

   WHO, Communicable Disease Surveillance & Response, Avian influenza
   http://www.who.int/csr/disease/avian_influenza/en/


   WPRO, Avian influenza
   http://www.wpro.who.int/health_topics/avian_influenza/

   Centers for Disease Control and Prevention, Avian influenza
   http://www.cdc.gov/flu/avian/index.htm

### Pandemic Preparedness Planning

12. In organizational context, effective business continuity planning is the cornerstone of preparedness. Active reduction of the numbers of staff on site is the most effective strategy an employer can implement to reduce the risk of staff exposure to sources of infection. Conversely, capability of an organization to function with only minimal numbers of staff available will ensure ability to continue with critical functions when a pandemic (or any crisis) causes fewer staff to be able to come to work. It is critical that effective business continuity planning involves all functional units of an organization, and should be coordinated and led from the highest levels of management.

13. Organizations that will be most resilient under pandemic conditions are those whose staff are knowledgeable in methods to protect themselves, and that are prepared to adapt their activities and processes to maintain critical functions with significantly reduced staff presence. Again, this can only be achieved through organization wide planning coordinated from the highest level.

14. As a guide to planning, particularly of health service provision to staff, the following United Nations System Influenza Coordinator (UNSIC) assumptions on infection rates and impact of the illness should be utilized by duty stations.
Table 1. UNSIC Planning Assumptions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>UNSIC Estimates</th>
<th>Cases per 1000 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Range</td>
<td>Likely Estimate</td>
</tr>
<tr>
<td>Illness rate (% total population)</td>
<td>15-50%</td>
<td>25%</td>
</tr>
<tr>
<td>Outpatient visit (% of ill cases)</td>
<td>5-50%</td>
<td>10%</td>
</tr>
<tr>
<td>Hospitalisations (% of ill cases)</td>
<td>0.5-10%</td>
<td>2%</td>
</tr>
<tr>
<td>Deaths (% of ill cases)</td>
<td>0.25-10%</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

Objectives of Medical Planning

15. In the case of a pandemic, there are specific areas of planning that are the responsibility of the Medical Services.

16. The overall objectives of medical planning are that:

- Staff are aware of the most effective methods they and their dependants can personally use to avoid infection, namely personal hygiene and social distancing;

- Staff know when, where, and how they and their dependants should access medical advice and treatment in the case of suspected infection, and are able to receive advice and treatment when required;

- Staff who are expected to perform critical functions with high risk of occupational exposure have the knowledge and are appropriately equipped to minimize their risk of infection;

- Travelers are aware of the risks of contracting avian or pandemic influenza, and methods to minimize the risk of infection;

- Staff are vaccinated against seasonal influenza, and when available, pandemic influenza.
17. Methods and activities required to achieve these objectives will vary according to local circumstances, and especially according to the capabilities of local medical services to provide for the needs of UN staff. Medical staff at country level should therefore select from and adapt recommendations from these guidelines which are relevant to their individual circumstances.

ELEMENTS OF A PREPAREDNESS PLAN

18. In order to achieve the above objectives, the following elements will need to be considered:

- Planning and Coordination
- Public and Occupational Health Measures
  - Personal Hygiene
  - Social Distancing
  - Infection Control Measures
  - Use of Personal Protective Equipment
  - Guidance for Safe Travel
- Medical Interventions
  - Medical Consultation and Advice
  - Medications
- Communication and Training

19. The UNSIC has recommended a 3-level pandemic response framework for coordination of actions of duty stations: a Level 1 Readiness Mode, a Level 2 Crisis Response Mode and a Level 3 Emergency Mode. Changes from one mode to another will be triggered by several factors, including the epidemiological behaviour of the disease and its geographical distribution. It is possible that duty stations at different regions would be designated a different mode, depending on need. The Action Plan in Section III utilizes this 3-level framework and outlines specific actions to be taken by duty stations for each of the three modes.

Public and Occupational Health Measures

Personal Hygiene

20. Respiratory illnesses such as influenza are spread by coughing, sneezing or touching contaminated surfaces. One of the most effective ways to reduce the risk of infection in any setting is to practice effective personal hygiene. Guidelines for the key aspects of personal hygiene relevant to the spread to influenza appear in Annex 1.

Social Distancing

21. As influenza is spread through close contact with others, a cornerstone of avoiding infection under pandemic conditions is to reduce contact with potentially infected persons. As a general guideline, staff should attempt to ensure that they do not come into close contact (< 1 meter or 3 feet) with any individual who is not known to be free of respiratory symptoms.
22. Through the implementation of business continuity plans, the UN will ensure that only the minimum number of staff necessary is at the workplace and that activity planning will minimize contact with others. Guidelines for reducing the numbers of staff at work are addressed in the document “Pandemic Planning and Preparedness Guidelines for the United Nations System”, dated 15 March, 2006. During times of restricted staff at work, strict attention to commuting procedures will be required. Guidance for minimizing risk of exposure to the virus during transport to and from work is provided in Annex 1.

23. All UN staff and their dependants must also follow the public health measures that might be taken by local and/or national authorities (e.g. restrictions regarding public gatherings, schools, cinemas, public transportation etc.).

**Infection Control Measures**

24. Planning for a pandemic necessitates the appropriate and thorough application of infection control measures, particularly in health care settings and in home health care. Interim WHO infection control recommendations in health care settings are included in this guidance (Annexes 2 and 3), including the use of personal protective equipment for health care workers, design of isolation rooms, family member/visitor recommendations, transport outside of health care facilities and recommendations on environmental cleaning and disinfection. Annex 2 also includes recommendations on infection control measures and care of pandemic influenza patients in the home.

25. Given some uncertainty about the characteristics of a new pandemic strain, all aspects of preparedness planning for pandemic influenza must allow for flexibility and real-time decision-making that take new information into account as the situation unfolds. If the new virus is unusual in transmissibility, virulence, or in any other way, the UN Medical Service will provide updated infection control guidance.

**Use of Personal Protective Equipment (PPE)**

26. Personal protective equipment (PPE) refers to specialized clothing or equipment used to prevent direct contact with the pandemic influenza virus and to provide protection against direct contact with body fluids when providing care for patients. Examples of PPE include surgical masks (as recommended for droplet precaution) and gloves and gown (as recommended for standard and contact precaution). Recommendations for the selection and use of PPE by staff depend on the characteristics and circumstances of their potential exposure to the virus and body fluids.

27. An employer who requires certain staff to conduct activities which may constitute a risk to health and safety (especially when other staff are being advised to avoid those activities), is obligated to undertake all reasonable measures to reduce the risk to acceptable levels. While the first option to be explored should always be avoidance of high risk areas, if exposure cannot be avoided, appropriate PPE should be used.

28. During times of minimized staff presence, the non-medical workplace is not necessarily a high risk area. It can, in fact, be considered as an environment of reduced risk, providing that:

- Numbers of staff are substantially reduced;
• Staff who come to work only do so if they are symptom free, and have no known recent contact with infected persons;

• Staff coming to work ensure avoidance of close contact with others at all times, including during commuting. Commuting should not involve public transport, or any other close contact (< 1 meter or 3 feet) with the general public;

• Working procedures are adapted to ensure that there is no close contact with staff performing critical functions with high risk of occupational exposure, and if there is any sharing of equipment (e.g. telephones / keyboards etc), that they are cleaned between users.

29. Staff are considered to be in a higher risk occupational group if they are expected to perform activities bringing them into contact with known infectious hazard potential, which others are being advised to avoid.

30. Table 1 of Annex 4 details five Risk Categories that staff can be classified into depending on the nature of their exposure to the virus. These are:

**Risk Category 1:**
Medical staff who manage patients clinically and have direct or close contact (<1 meter or 3 feet) with known/suspected pandemic influenza patients or their infectious material.

**Risk Category 2:**
Other staff with supportive duties in an area where close contact (<1 meter or 3 feet) with known/suspected pandemic influenza patients or their infectious material occurs (e.g. fever clinic). Examples of staff include:

- Medical administrative staff;
- Security staff in that area;
- Cleaning staff required to clean potential contact surfaces in such areas.

**Risk Category 3:**
Staff who have close contact (<1 meter or 3 feet) with persons of unknown pandemic status. An example is that of “essential travelers” who will come into close contact with the general public in closed spaces, e.g. trains and airplanes.

**Risk Category 4:**
Staff who are symptomatic or infected with pandemic influenza (e.g. staff seeking consultation at the fever clinic).

**Risk Category 5:**
Staff with no known close contact (<1 meter or 3 feet) with known/suspected pandemic influenza patients or their infectious material.

31. Even in these risk groups, the risk is variable, and protective strategies should be graded and selected according to the specific circumstances of each group.
32. Once the need for PPE has been established, the type should be tailored to the nature of the risk experienced by any particular group. Table 3 of Annex 3 details the type of PPE that should be made available to staff depending on their Risk Category. For medical staff, Annex 3 provides detailed recommendations of use of each type of PPE depending on the type of activities performed.

33. Given the above guidance, staff should be made aware that simply being at the workplace does not constitute an indication to use PPE, and that specific types of PPE will be made available to staff depending on their risk of exposure to the virus.

34. Additionally, the use of any PPE in occupational context must be accompanied by training which includes procedures for donning on and off, handling and disposal of potentially contaminated items.

**Use of Surgical Masks**

35. There is very limited information on the use of surgical masks for the control of pandemic influenza in community settings (or at work). Thus, it is difficult to assess their potential effectiveness in controlling influenza in these settings. What is clear, however, is that the use of surgical masks is only one part of a combination of interventions that can be used to help reduce the spread of virus from an infectious to non-infected persons. As new information becomes available about the effectiveness of surgical masks in controlling influenza in community settings, this guidance document will be revised accordingly.

36. Whenever possible, rather than relying on the use of surgical masks, close contact (<1 meter or 3 feet) and crowded conditions should be avoided during an influenza pandemic.

37. Surgical masks may be considered for use by individuals who enter crowded settings, both to protect their nose and mouth from other people's coughs and to reduce the wearers' likelihood of coughing on others. The time spent in crowded settings should be as short as possible.

38. Surgical masks should be worn by infected individuals when in contact with others, to reduce the spread of infective droplets when coughing and sneezing. For this reason, surgical masks may be recommended for use by infected individuals during their time of contact with medical staff (Annex 3, Table 3)

39. Depending on availability, surgical masks may be provided to staff caring for ill household members. Although no studies have assessed the use of masks at home to decrease the spread of infection, use of surgical masks by the caregiver during interaction with ill household members may be of benefit. Use in other circumstances will be guided by the most recent evidence based recommendations from infectious disease control authorities.

40. Any recommendation of the use of surgical masks must be accompanied by instruction on its proper use and disposal.

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Use of Particulate Respirators (e.g. NIOSH-certified N95, EU FFP2 or equivalent masks)

41. Particulate respirators (e.g. NIOSH-certified N95, EU FFP2 or equivalent masks) provide a high degree of protection against infection if fitted properly and are appropriate for persons who are at unusually high risk of infection, particularly medical staff in close contact with infected patients when performing high risk procedures such as some aerosol generating procedures. Of note, WHO has recently updated its infection control guidelines and recommended that particulate respirators (e.g. NIOSH-certified N95, EU FFP2 or equivalent masks) be used by health care workers only when aerosol-generating procedures are performed, and not during routine care of avian or pandemic influenza patients (Annexes 2 and 3). Ideally, particulate respirators must be specially fitted for the wearers (“fit-tested”) and wearers should be provided with a health assessment and training to use the device. A particulate respirator that has not been fitted properly may leave unprotected gaps between the respirator and the wearer’s face, which impairs its effectiveness.

Guidance for Safe Travel

42. UN Offices should strictly follow WHO travel recommendations at the time of a pandemic. Currently, WHO has not recommended that travel to any of the countries affected by H5N1 viruses be avoided. However, staff should keep updated for any travel restrictions and advisories. In the meantime, persons visiting H5N1-affected areas can reduce their risk of infection by observing the measures found in Annex 1.

43. If an organization feels that particular travel is essential at times when Level 2 Crisis Response Mode or Level 3 Emergency Modes have been declared, and if travel is possible, these “essential duty travelers” may be exposed to increased risk of infection through increased contact with other individuals. In addition to the measures described in Annex 1 and provision of appropriate PPE (Annex 3, Table 3), provision of prophylactic medication to travelers may be considered (Annex 7) depending on information available at the time.

44. Due to the risks of infection during travel, and potential problems of travel availability during the time of a pandemic, it is likely that UN staff would be required and advised to stay at their duty station. Staff members should ensure that they have sufficient emergency food supplies, water, prescribed medication, medical kits and other essentials to last 6 weeks until a pandemic wave has passed. Guidance for such supplies is provided in Annex 1.

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7 WHO Travel Advisories are available at www.who.int
Medical Interventions

Medical Consultation and Advice

45. If possible, the preferred option for staff to obtain medical consultation and advice is through the standard local medical infrastructure. Each duty station needs to provide clear guidance to staff on how to do that. Each country team, in consultation with the appropriate government offices, should already have identified the most appropriate local health care facilities to treat UN staff and dependents in case of an influenza pandemic.

46. If the local medical infrastructure is inadequate, or proves unable to cope with demand in pandemic circumstances, the UN medical service should prepare to provide support to the extent practicable. Again, clear guidance should be available for staff on how to access such services.

47. Depending on circumstances, it may be appropriate to establish a consultation area (fever clinic) established on UN premises. This should be in an area that allows separation of staff coming to the building for consultation, and healthy staff coming to work to perform essential activities. Guidance for medical staff for setting up such a consultation capability is contained in Annex 6.

48. Guidance for medical staff with respect to assessment and treatment of pandemic influenza cases is contained in Annexes 4 and 7.

49. Requests for medical evacuation of severe cases that cannot be dealt with locally will be dealt with according to the established practice, rules and regulations. It should be noted, however, that medical evacuation in the event of a pandemic may not be possible due to public health regulations, and the extraordinary logistic difficulties of transporting infectious persons safely.

50. From the time that pandemic influenza cases appear in the region of a duty station and until the pandemic alert has been officially ended, all UN staff in the affected area should check their body temperature at least once daily. If they note a temperature of 38°C or higher, or are experiencing other symptoms of influenza, they should seek medical assessment through the channels identified in the Country Team plan. Further information on the management of staff recently exposed to infected cases (i.e. “contacts”) can be found in Annex 5.

Medications

Antiviral Medications

51. The anti-viral medication oseltamivir (Tamiflu) is widely considered to be the best available option for pharmacological mitigation of the morbidity and mortality of an influenza pandemic. The evidence base for effectiveness of treatment of H5N1 avian influenza patients, however, is sparse, and reports already exist regarding resistance in these patients. Most importantly, the effectivity and sensitivity of a viral strain that has not yet emerged cannot be assessed with any certainty. At this time, the evidence that is available suggests that oseltamivir can reduce the duration of viral replication and improve prospects of survival, provided it is administered within 48 hours from the time of onset of symptoms.
52. In an occupational health context, an employer requiring a particular group of staff to be exposed to risk has a duty to take measures to reduce that risk to the extent feasible. As has been described above, the primary and most effective measure is behavioural avoidance of exposure, followed by use of Personal Protective Equipment (PPE). Pharmacological prophylaxis is likely to be less effective than PPE, but could provide additional protection. Prophylaxis should never be considered as a substitute for PPE in situations of increased risk of exposure. The prophylactic use of anti-viral medications such as oseltamivir might be considered for staff at high risk of exposure, for the period of time that they are considered to be exposed to the increased risk. Decisions on use (or not) under such circumstances will depend on information available at the time of a pandemic regarding virulence of the prevailing viral strain, its sensitivity to the medication, and taking account of public health recommendations that may be released by WHO.

53. Prophylactic use of medication in an occupational context should not be recommended for staff who are not identified to be at high risk of exposure to the virus.

54. Post exposure prophylaxis may be considered (e.g. for staff who experience close contact with a known infected individual, such as a sick family member), but this will again be dependent on sensitivity data available at the time, and consequent public health recommendations.

55. If evidence and recommendations at the time of a pandemic support prophylactic use of an anti-viral medication in an occupational context, it should never be considered as an “activity enabling” strategy (i.e. the activity is considered acceptable due to the protective effect of medication). Its use would only be considered as a strategy to reduce risk after a decision is made to perform a particular risk activity.

56. Guidance for medical practitioners regarding the use of oseltamivir as treatment and prophylaxis is contained in Annex 7.

57. If a pandemic emerges, supplies of medications useful against influenza, particularly oseltamivir, will be in high demand. Depending on local medical infrastructure and resources, supplies could be exhausted rapidly. UN offices should assess local supply possibilities, and ensure that their staff will have access to sufficient supplies if needed. If local supplies are uncertain, stockpiling on country level should be considered. For planning purposes, the United Nations System Influenza Coordinator has estimated a likely overall attack rate (i.e., the number of new symptomatic illnesses over one year) of 25% (Table 1). However, in assessing the adequacy of local supplies, or the size of a potential UN stockpile, the following also needs to be considered:

- Some people who will develop symptoms will not have pandemic influenza but may have colds or other respiratory infections. Some of the available supply is likely to be used to treat non-pandemic illnesses;

- Ease of distribution, and ways in which it can be ensured that medications will reach those who need it, will vary between duty stations.
58. For the above reasons, it is recommended that Country Team plans ensure a supply of oseltamivir to cover one treatment course for 40% of staff and their recognized dependants (25% for the expected ill and 15% as buffer). Where it cannot be ensured that Oseltamivir reaches those who need it, a larger stockpile (up to 100%, if necessary) may be considered.

59. In addition to treatment doses, and considering that Oseltamivir may be used in a prophylactic role, it is further recommended that UN offices should ensure access to sufficient oseltamivir supplies to cover a six-week period of prophylaxis for all staff who have been identified in Risk Categories 1, 2 and 3 (Annex 3, Table 3).

60. The adult formulation of oseltamivir is not directly suitable for use in children who weigh less than 40 kg. Until recently, the only approved formulation for children was the paediatric syrup, stockpiling of which was hindered by the short shelf life. This situation has recently been alleviated by availability of paediatric strength capsules, which has the same shelf life (5 years) as the adult form. At the time of replenishment of current stockpiles, it is suggested that consideration be given to substituting a portion of the new stock with paediatric capsules, in a quantity commensurate with the dependant profile at particular duty stations.

61. Should use of paediatric medication be required in the interim before current stockpile replenishment, the manufacturer has released guidance for the dilution of powder in adult capsules for paediatric use in emergency situations. This can be found in Annex 7 and at the manufacturer’s website.

62. Oseltamivir is a prescription drug that should be taken according to medical advice and not be self medicated. Stocks of medications should ideally be under the responsibility of the UN Medical Service physician at the duty station. At duty stations where UN medical staff are not available, the organizations’ representatives should hold the stockpile and make the medication available to pre-identified physicians who will make prescription decisions.

63. Depending on the situation, certain duty stations may have substantial security concerns in maintaining their stockpile. For such stations, adequate security measures should be put in place to address this. Additionally, the storage area should be dry, and have a temperature that does not exceed 25°C. Under these conditions the shelf life is expected to be at least 5 years. More information on the storage of supplies is detailed in Annexes 7 (for oseltamivir) and 8.

64. Under the current circumstances of continued WHO Pandemic alert level 3 which has not yet escalated to level 4 or higher, the question has arisen of whether to consider extending the expiry date of current oseltamivir stocks. Guidance on this issue is provided in Annex 7.

65. In cases where it has not been possible to donate oseltamivir supplies prior to expiry, and where an extension of shelf life has not been made, WHO’s guidelines on the safe disposal of unusable pharmaceuticals should be strictly followed. Additionally, for future purchases of oseltamivir stockpiles, offices may wish to investigate the possibility of establishing a contract

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8 Usually only 18 months at the time of acquisition.
9 Assuming storage under proper conditions as outlined in Annex 8
10 Available at http://www.tamiflu.com/hcp/dosing/extprep.aspx
with the manufacturer or distributor that ensures availability of fresh/unexpired stocks when it is needed (i.e. have a "rolling inventory" available for use).

**Antipyretics and Antibiotics**

66. Antipyretics, such as paracetamol, are indicated in most febrile diseases to relieve pain and control fever. Aspirin is contraindicated in those suspected of having influenza under the age of 12 and in those with known contraindications. Antipyretics are widely available and no particular stockpile is recommended.

67. To date, pneumonias occurring in humans infected with avian influenza H5N1 have been primarily viral. However, data from military training camps during the 1918 pandemic indicated a high secondary bacterial infection rate. As the antibiotics recommended for these bacterial infections are utilized for many other medical conditions and are generally in good supply, it is anticipated that availability under pandemic conditions will be better than for oseltamivir. In assessing whether local sources will be adequate, country teams should ensure availability of a stockpile of antibiotics sufficient to treat pneumonia in 10% of total staff and dependents. In terms of specific types and quantities of antibiotics, the following requirements should be considered:

- Amoxicillin + clavulanic acid (500mg/125mg tablets): 1 course of 30 tablets for 7.5% of the number of staff members and their dependants;
- Ciprofloxacin (500 mg tablets): 1 course of 20 tablets for 2.5% of the number of staff members and dependants;
- Azythromycin (500 mg tablets): 1 course of 5 tablets for 2.5% of the number of staff members and dependants;

68. Unused antibiotic supplies, prior to their expiry dates, should be donated to local healthcare facilities in good time for use. Supplies should then be replaced accordingly.

**Vaccines**

**Vaccine Against Seasonal Influenza**

69. While seasonal influenza vaccine will not protect against a pandemic strain and does not provide protection against many other viruses that can cause respiratory illnesses, immunization against seasonal influenza is an important part of pandemic influenza preparedness. As a public health measure, it reduces the statistical chance of seasonal and avian influenza virus coexistence in one host – a condition conducive to recombination and emergence of a pandemic influenza strain. As a practical aid, it could reduce the number of individuals seeking treatment at the time of a pandemic (when seasonal influenza may also be circulating), thus sparing resources for pandemic influenza victims.

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70. There is a vaccine available each year to protect against seasonal human influenza. This vaccine is recommended primarily for staff and dependants who are at high risk of complications from influenza or who will be traveling internationally. If supply allows, it should also be made available to all other UN personnel and their dependents. Influenza vaccine is a highly cost-effective countermeasure against seasonal influenza. Recommendations for seasonal influenza vaccines are made annually by the WHO\(^\text{13}\).

71. In most years, the northern and southern hemisphere vaccines are identical or very similar. Persons living in the northern hemisphere should be vaccinated with the northern hemisphere vaccine while those living in the southern hemisphere should be vaccinated with the southern hemisphere vaccine. For those living in equatorial regions, vaccinations will be with the vaccine locally available at that time. Vaccination programs should be commenced once the vaccine for the appropriate hemisphere becomes available. In the northern hemisphere, this will generally be in October and November and in the southern hemisphere, from March to May. Travelers are advised to have the vaccine of the hemisphere where they are based.

**Pneumococcal Vaccine**

72. Pneumococcal vaccine should be considered for people at particular risk for the bacterial pneumonia complication of influenza, including those 65 years of age or older, those with heart failure, emphysema, diabetes mellitus, alcoholism, or chronic liver disease, and those who are otherwise immune compromised\(^\text{14}\). Persons who meet these criteria are advised to contact their usual health care providers. No UN stockpile is recommend.

**Vaccine Against Pandemic Influenza**

73. If a new pandemic virus strain emerges, there will be a focused effort by public health authorities and manufacturers worldwide to develop, distribute and administer an effective and specific pandemic vaccine. However, the process is complicated and will take a number of months before a vaccine would be available. Currently, vaccines against the influenza virus A/H5N1 are being developed and tested but these vaccines are not yet recommended for general or widespread use. Additionally, an influenza pandemic may be caused by another novel strain of virus, and not necessarily the H5N1 virus.

74. WHO will closely follow the development, protective effect and safety of both the A/H5N1 and any other new pandemic vaccine and will make recommendations on its use if appropriate. Under the best of circumstances, given the global population size and limited production capacity for influenza vaccine, any pandemic vaccine will initially be in short supply. Demand is likely to far exceed availability, and priorities for administration will need to be applied. Additionally, countries may differ in their vaccination strategies and policies, and duty stations should take into account their individual situation during the planning process.

75. Priority recipients will include those involved with direct clinical contact with infected patients, those staff required to maintain critical functions with high risk of exposure, and those at particularly high risk of serious complications, such as the elderly and those with chronic


diseases. Based on current WHO recommendations, guidance for the priority for administration of a pandemic vaccine is as follows:

i. Medical staff who, as part of their duties, manage infected patients clinically and have close contact (<1 meter or 3 feet) with known/suspected patients or their infectious material (Risk Category 1 - Annex 3, Table 3);

ii. Other staff who, as part of their duties of performing critical functions, have close contact (<1 meter or 3 feet) with known/suspected patients or their infectious material (Risk Category 2 - Annex 3, Table 3);

iii. Remaining staff performing critical functions (both on-site, and tele-commuting);

iv. Persons at high risk of severe or fatal outcomes following influenza infection:
   - Staff and dependents with high risk medical conditions;
   - Immunocompromised individuals;
   - >65 years of age;
   - Children between 6-23 months of age;
   - Pregnant women

v. Children 24 months to 18 years

vi. Healthy adults.

### Communication and Training

76. The importance of effective communication for pandemic preparedness cannot be overstated. The most effective strategies that both individuals and organizations can implement to reduce the impact of a pandemic are those aimed at changing behavior and exposure to risk. Behavior can only be changed through education and communication. The importance of personal hygiene, social distancing and methods to achieve that in individual and organizational context should be key components of pandemic preparedness and its associated communication plan.

77. The threat of an influenza pandemic will create a high demand for information both within the UN and from external partners. Clear internal and external communication will be essential to deal rapidly with rumors and anxieties. It will be vital to coordinate the information that is circulated by headquarters, regional and country offices. A country communication plan, in association with headquarters and the regional offices, needs to be prepared to provide appropriate information rapidly to all UN staff. This should identify who is responsible for coordinating UN information and communications. Medical services should be ready to contribute the medical information that will be part of such communication.

78. All UN medical personnel providing health care to UN staff should be knowledgeable regarding the contingency plan for an influenza pandemic, and be provided with all available and current medical guidelines.
ACTION PLAN

79. The following table outlines a series of actions to be taken by duty stations according to three modes of response, taking account of progressively increasing levels of risk.

80. In conjunction with the UNSIC, the UN Medical Director will advise the medical staff and/or Country Teams at duty stations which mode is appropriate to their local circumstances, in accordance with the unfolding pandemic situation in their region/country:

**Level 1: Readiness Mode**

Associated with WHO alert levels 1-3. At the time of writing, all duty stations are in this mode. It is necessary to prepare, review and continuously update medical response plans and strategies.

**Level 2: Crisis Response Mode**

This will probably be associated with WHO global pandemic alert levels 4 and 5. A new influenza subtype is confirmed to have caused outbreaks of human cases outside of the region/country in question. Time to ensure preparedness is limited, and an urgent scaling up of all preparedness actions is indicated, including testing of medical response procedures. Duty stations in the area of outbreaks may be advised to adopt the next level of preparedness (level 3).

**Level 3: Emergency Mode**

This will be probably be associated with WHO global pandemic alert levels 5 and 6. A new influenza subtype is causing widespread international outbreaks of human cases, or there are human cases/outbreaks in the region/country in question. Full implementation of medical response measures is required.

81. UN Offices should develop or update their medical pandemic preparedness plans to address the recommendations made here. Plans should also be individualized to take into account of and be consistent with preparedness activities and plans of local and/or national authorities.
## LEVEL 1: READINESS MODE

<table>
<thead>
<tr>
<th>ACTION</th>
<th>RESPONSIBILITY</th>
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<tbody>
<tr>
<td><strong>PLANNING AND COORDINATION</strong></td>
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<tr>
<td>Planning and Coordination</td>
<td></td>
</tr>
<tr>
<td>Brief relevant officials of the UN organizations on present medical situation, possible outcomes and related resource requirements.</td>
<td>UN Medical Directors, Senior Medical Professional at duty station</td>
</tr>
<tr>
<td>Assess medical preparedness status and identify actions needed to fill gaps.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Collaborate with relevant stakeholders and partners (e.g. national government, health authorities) to respond to a pandemic.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, Crisis Management Team</td>
</tr>
<tr>
<td>Develop a business continuity plan for the Medical Services, allowing performance of critical functions with reduced numbers of staff.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td><strong>PUBLIC AND OCCUPATIONAL HEALTH</strong></td>
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<tr>
<td>Preparedness</td>
<td></td>
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<tr>
<td>Familiarize with the UN Medical Services Guidelines</td>
<td>All</td>
</tr>
<tr>
<td>Personal Hygiene and Social Distancing</td>
<td></td>
</tr>
<tr>
<td>Raise awareness among staff and implement pandemic prevention strategies of personal hygiene and social distancing.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
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<tr>
<td>PPE</td>
<td></td>
</tr>
<tr>
<td>Quantify the number of staff in each Risk Category of Annex 3, Table 3). Procure and store sufficient stocks of the required PPE for these staff.</td>
<td>UN Country Team, Individual UN Agencies, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Ensure staff are trained on the proper use and disposal of PPE.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Where local healthcare conditions indicate the need, develop plans for PPE distribution.</td>
<td>UN Country Team, Crisis Management Team, Individual UN Agencies</td>
</tr>
<tr>
<td>Travel</td>
<td></td>
</tr>
<tr>
<td>Provide education to travelers (Annex 1), and issue travel advisories, precautions, or restrictions as necessary.</td>
<td>UN Medical Directors in consultation with WHO, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Medical Consultation and Advice</td>
<td>MEDICAL INTERVENTIONS</td>
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</tr>
<tr>
<td>Assess capability of medical systems to meet expected needs during a pandemic, and identify and source supporting resources required.</td>
<td>UN Medical Directors, Senior Medical Professional at duty station, UN Country Team</td>
</tr>
<tr>
<td>For identified supporting outpatient and hospital-based healthcare providers, prepare contractual agreements and develop specific protocols for UN staff to use these facilities.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, Crisis Management Team</td>
</tr>
<tr>
<td>Where local health care conditions indicate the need, develop plans for creating local auxiliary outpatient “fever clinics” for UN staff and their dependents designed to reduce the risk of transmission of pandemic influenza (Annex 6).</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, Crisis Management Team</td>
</tr>
<tr>
<td>Develop procedures for UN Medical Services staff to consult, examine and prescribe and dispense medications when support to local medical services is required</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Provide guidance to healthcare providers on clinical management and infection control (Annexes 2, 3, 4 and 7).</td>
<td>UN Medical Directors in consultation with WHO</td>
</tr>
<tr>
<td>In coordination with local health authorities, ensure surveillance mechanism to identify suspect cases among staff in place.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Promote and facilitate an annual seasonal influenza vaccination programme.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Prioritize and identify the groups who will receive the Pandemic vaccine once it becomes available (Para 75).</td>
<td>UN Medical Directors in consultation with WHO</td>
</tr>
<tr>
<td>Monitor guidance and international and local availability of the Pandemic vaccine.</td>
<td>UN Medical Directors, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Monitor and disseminate updated guidance on strategies, effectiveness and priorities for use of antivirals.</td>
<td>UN Medical Directors in consultation with WHO, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Ensure availability and accessibility of a stockpile of oseltamivir (Tamiflu) to 1) Treat 40% or more of staff and recognized dependants (25 expected ill and 15% buffer), and 2) Provide 6-weeks prophylaxis for staff identified to be in Risk Category 1, 2 and 3 (Annex 3, Table 3).</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, UN Crisis Management Team</td>
</tr>
<tr>
<td><strong>Ensure stockpiled antivirals are stored appropriately and securely. (Annexes 7 and 8)</strong></td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, UN Crisis Management Team</td>
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</tr>
<tr>
<td><strong>Prepare to distribute/administer antivirals to staff for treatment, post-exposure prophylaxis, and possibly pre-exposure prophylaxis.</strong></td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, UN Crisis Management Team</td>
</tr>
<tr>
<td><strong>Antipyretics</strong></td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team</td>
</tr>
<tr>
<td>Such as paracetamol are usually readily available. However, staff members should be encouraged to stock enough for their own needs</td>
<td><strong>Antibiotics</strong></td>
</tr>
<tr>
<td>Identify sources of antibiotics for outpatient treatment of secondary bacterial infections in 10% or more of UN staff and their dependents. If such a supply is not available or is considered unreliable, the antibiotics should be stockpiled (Annex 8)</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, UN Crisis Management Team</td>
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</tbody>
</table>

**COMMUNICATION AND TRAINING**

<table>
<thead>
<tr>
<th><strong>Communicate the UN Medical Service Guidelines to all UN Organizations and Country Offices</strong></th>
<th>UNSIC and Medical Director</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Update all staff on status of pandemic and preparedness activities</strong></td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, Crisis Management Team</td>
</tr>
<tr>
<td><strong>Develop medical and technical presentation materials that can be used in briefings or during other communication initiatives</strong></td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td><strong>Enhance healthcare provider awareness of the potential for a pandemic. Disseminate information on identification of suspect cases, clinical management and infection control.</strong></td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td><strong>Disseminate to all staff relevant materials to support a pandemic response. Such materials may include:</strong></td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, Crisis Management Team</td>
</tr>
<tr>
<td>1) The UN Medical Services Guidelines 2) Organization's Pandemic Plan 3) General Information for all Staff (Annex 1) 4) Self Care Algorithms (Annex 4) 5) Care for Pandemic Influenza Patients in the Home (Annex 2) 6) Local Healthcare Arrangements 7) Location of Fever Clinics 8) Distribution of Medical Supplies...etc.</td>
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</tbody>
</table>

_**Table**: Antipyretics and Antibiotics._
# LEVEL 2: CRISIS RESPONSE MODE

<table>
<thead>
<tr>
<th>ACTION</th>
<th>RESPONSIBILITY</th>
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<tbody>
<tr>
<td><strong>PLANNING AND COORDINATION</strong></td>
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<tr>
<td>Planning and Coordinating</td>
<td></td>
</tr>
<tr>
<td>Ensure regular, frequent meeting/communication between the Medical Directors and UN Healthcare Providers</td>
<td>UN Medical Directors, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Assess medical preparedness status and identify immediate actions needed to fill gaps.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Ensure coordination and information sharing among all relevant local stakeholders and partners (e.g. national government, health authorities)</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, UN Crisis Management Team</td>
</tr>
<tr>
<td>Ensure that the business continuity plan of Medical Services is updated and ready to be operationalized at short notice.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td><strong>PUBLIC AND OCCUPATIONAL HEALTH</strong></td>
<td></td>
</tr>
<tr>
<td>Preparedness</td>
<td></td>
</tr>
<tr>
<td>Re-familiarize with the UN Medical Services Guidelines.</td>
<td>All</td>
</tr>
<tr>
<td><strong>Personal Hygiene and Social Distancing</strong></td>
<td></td>
</tr>
<tr>
<td>Urgently ensure awareness among staff and implement prevention strategies of personal hygiene and social distancing.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td><strong>PPE</strong></td>
<td></td>
</tr>
<tr>
<td>Ensure stockpiled PPE are available at short notice, accessible and stored appropriately and securely.</td>
<td>UN Country Team, Individual UN Agencies, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Provide refresher training to staff on the proper use and disposal of PPE.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Distribute PPE to staff according to distribution plan.</td>
<td>UN Crisis Management Team, UN Country Team, Individual UN Agencies, UN Dispensary/Clinic (where available), or contracted health care service provider,</td>
</tr>
<tr>
<td><strong>Travel</strong></td>
<td></td>
</tr>
<tr>
<td>Defer all non-critical travel</td>
<td>UN Medical Directors, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Defer all travel of UN staff presenting with influenza-like symptoms</td>
<td>UN Medical Directors, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Provide education to travelers who are identified to conduct critical travel, and issue travel advisories, precautions, or restrictions if warranted by disease epidemiology.</td>
<td>UN Medical Directors in consultation with WHO, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>ACTION</td>
<td>RESPONSIBILITY</td>
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<tr>
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</tr>
<tr>
<td><strong>MEDICAL INTERVENTIONS</strong></td>
<td></td>
</tr>
<tr>
<td>Medical Consultation and Advice</td>
<td></td>
</tr>
<tr>
<td>Assess capacity of medical systems to meet expected needs during a pandemic, and ensure availability of supporting resources required.</td>
<td>UN Medical Directors, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Confirm with identified supporting healthcare providers that contractual agreements and protocols for use of their facilities by staff are still valid.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, Crisis Management Team</td>
</tr>
<tr>
<td>Where planned for, conduct exercises of fever clinics to ensure operational readiness.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, Crisis Management Team</td>
</tr>
<tr>
<td>Provide updated guidance to healthcare providers on clinical management and infection control.</td>
<td>UN Medical Directors in consultation with WHO, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>In coordination with local health authorities, ensure surveillance mechanism to identify suspect cases among staff in place.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Seasonal Influenza Vaccine</td>
<td></td>
</tr>
<tr>
<td>Monitor and implement updated guidance on seasonal influenza vaccine usage.</td>
<td>UN Medical Directors in consultation with WHO, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>“Pandemic” Vaccine</td>
<td></td>
</tr>
<tr>
<td>Update priority groups who will receive the Pandemic vaccine when it becomes available.</td>
<td>UN Medical Directors in consultation with WHO, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>If available, acquire pandemic vaccine and vaccinate staff according to priority groups, as necessary.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Antivirals</td>
<td></td>
</tr>
<tr>
<td>Monitor and disseminate updated guidance on strategies, effectiveness and priorities for use of antivirals.</td>
<td>UN Medical Directors in consultation with WHO, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Ensure stockpiled antivirals are available at short notice, accessible and stored appropriately and securely.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, UN Crisis Management Team</td>
</tr>
<tr>
<td>Depending on prevailing guidance and situation of local duty station, it may be necessary to distribute/administer antiviral medications to staff for treatment, post-exposure prophylaxis and possibly pre-exposure prophylaxis.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, UN Crisis Management Team</td>
</tr>
<tr>
<td>Antipyretics</td>
<td></td>
</tr>
<tr>
<td>Remind staff to procure their own supplies of antipyretics.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, Crisis Management Team</td>
</tr>
</tbody>
</table>
### Antibiotics

**ACTION**
Ensure that stockpiled supplies of antibiotics are available at short notice for use as required.

**RESPONSIBILITY**
UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, UN Crisis Management Team

### Communication and Training

<table>
<thead>
<tr>
<th>Communication and Training</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACTION</strong></td>
</tr>
<tr>
<td>Update all staff on status of pandemic and preparedness and response activities.</td>
</tr>
<tr>
<td>Educate healthcare providers through all communication channels available.</td>
</tr>
<tr>
<td>Update and disseminate to all staff relevant materials to support a pandemic response. Such materials may include:</td>
</tr>
<tr>
<td>1) The UN Medical Services Guidelines</td>
</tr>
<tr>
<td>2) Organization's Pandemic Plan</td>
</tr>
<tr>
<td>3) General Information for all Staff (Annex 1)</td>
</tr>
<tr>
<td>4) Self Care Algorithms (Annex 4)</td>
</tr>
<tr>
<td>5) Care for Pandemic Influenza Patients in the Home (Annex 2)</td>
</tr>
<tr>
<td>6) Local Healthcare Arrangements</td>
</tr>
<tr>
<td>7) Location of Fever Clinics</td>
</tr>
<tr>
<td>8) Distribution of Medical Supplies...etc.</td>
</tr>
<tr>
<td><strong>RESPONSIBILITY</strong></td>
</tr>
<tr>
<td>UN Medical Directors, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, Crisis Management Team</td>
</tr>
</tbody>
</table>

### Level 3: Emergency Mode

#### Planning and Coordination

<table>
<thead>
<tr>
<th>Planning and Coordination</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACTION</strong></td>
</tr>
<tr>
<td>Ensure permanent consultation by telecommunication between UN Medical Directors and UN Healthcare Providers</td>
</tr>
<tr>
<td>Ensure coordination and information sharing among all relevant local stakeholders and partners (e.g. national government, health authorities).</td>
</tr>
<tr>
<td>Implement business continuity plans.</td>
</tr>
<tr>
<td><strong>RESPONSIBILITY</strong></td>
</tr>
<tr>
<td>UN Medical Directors, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, UN Crisis Management Team</td>
</tr>
<tr>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
</tbody>
</table>
### PUBLIC AND OCCUPATIONAL HEALTH

<table>
<thead>
<tr>
<th><strong>Personal Hygiene</strong></th>
<th>Urgently ensure awareness among staff and implement pandemic prevention strategies of personal hygiene and social distancing.</th>
<th>UN Dispensary/Clinic (where available), or contracted health care service provider</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PPE</strong></td>
<td>Ensure stockpiled PPE are available, accessible and stored appropriately and securely, and issued to identified risk groups.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, Individual UN Agencies, UN Crisis Management Team</td>
</tr>
<tr>
<td></td>
<td>Provide refresher training to staff on the proper use and disposal of PPE</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td><strong>Travel</strong></td>
<td>Defer all non-critical travel</td>
<td>UN Medical Directors, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td></td>
<td>Defer all travel of UN staff presenting with influenza-like symptoms</td>
<td>UN Medical Directors, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td></td>
<td>Provide education to travelers who are identified to conduct critical travel, and issue travel advisories, precautions, or restrictions if warranted by disease epidemiology.</td>
<td>UN Medical Directors in consultation with WHO, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
</tbody>
</table>

### MEDICAL INTERVENTIONS

<table>
<thead>
<tr>
<th><strong>Medical Consultation and Advice</strong></th>
<th>Review and revise, as needed, plans for healthcare support to staff.</th>
<th>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Crisis Management Team, UN Country Team</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Confirm with identified supporting healthcare providers that contractual agreements and protocols for use of these facilities by staff are still valid, and can be immediately implemented.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, UN Crisis Management Team</td>
</tr>
<tr>
<td></td>
<td>Where planned for, operate the fever clinics as required.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td></td>
<td>Provide updated guidance to healthcare providers on clinical management and infection control in healthcare and home settings.</td>
<td>UN Medical Directors in consultation with WHO, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td></td>
<td>Initiate surveillance for mortality and severe morbidity among staff.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td><strong>Pandemic Vaccines</strong></td>
<td>Review and revise, as needed, priority groups and strategies for vaccination.</td>
<td>UN Medical Directors in consultation with WHO, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td></td>
<td>If available, acquire pandemic vaccine, and vaccinate according to priority groups.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
</tr>
<tr>
<td>Antivirals</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, UN Crisis Management Team</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Ensure stockpiled antivirals are immediately available, accessible and stored appropriately and securely.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitor and disseminate updated guidance on strategies, effectiveness and priorities for use of antivirals.</td>
<td>UN Medical Directors in consultation with WHO, UN Dispensary/Clinic (where available), or contracted health care service provider</td>
<td></td>
</tr>
<tr>
<td>Distribute/administer antivirals to staff for treatment, post-exposure prophylaxis, and possibly pre-exposure prophylaxis, as necessary.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider, UN Country Team, UN Crisis Management Team</td>
<td></td>
</tr>
<tr>
<td>Track antiviral distribution to staff and any adverse events.</td>
<td>UN Dispensary/Clinic (where available), or contracted health care service provider</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Communication and Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Update all staff on status of pandemic and response activities through regular briefings.</td>
</tr>
<tr>
<td>Educate healthcare providers through all communication channels available.</td>
</tr>
<tr>
<td>Continue public education activities, reinforcing education on care seeking and home care.</td>
</tr>
</tbody>
</table>
ANNEX 1: GENERAL INFORMATION FOR ALL STAFF

Personal Hygiene

Practice of good personal hygiene is one the most effective strategies any individual can implement to reduce their risk of being infected by the influenza virus. Important points are:

- Cover your mouth and nose with a tissue when you cough or sneeze;
- If you don't have a tissue, cough or sneeze into your upper sleeve (not with the hand, as that contaminates the hand and can spread organisms further by touching any surface);
- Use a tissue for cleaning/blowing the nose, and dispose of it after use in the waste;
- Wash your hands after coughing or sneezing, using a tissue, or touching any surface that may have become contaminated by a prior user. If using a surgical mask, dispose of it carefully after use and wash hands;
  - Wash hands with soap and water or clean with alcohol-based hand cleaner;
  - When you wash your hands, wash for at least 20 seconds, making sure that all surfaces of hands and fingers are cleaned.
- Become “touch aware”, and avoid touching surfaces that are likely to have been touched by others (door handles, stair railings, etc);
- Avoid handshaking, social kissing, and other social rituals that involve touching others;
- Avoid respiratory secretions when around other people (e.g. coughing and sneezing). If possible, avoid contact with individuals at risk (small children or those with underlying or chronic illnesses such as immune- suppression or lung disease) until respiratory symptoms have resolved.

For more information on personal hygiene measures, see:

- [http://www.cdc.gov/cleanhands/](http://www.cdc.gov/cleanhands/)
Hand Hygiene Techniques

**How to handrub? WITH ALCOHOL-BASED FORMULATION**

1a. Apply a pinch of the product in a cupped hand and cover all surfaces.

1b. Rub hands palm to palm

2. Rub hands back of fingers to opposing palms with fingers interlocked

3. Right palm over left dorsum with interlaced fingers and vice versa

4. Palm to palm with fingers interlaced

5. Rotational rubbing of left thumb clasped in right palm and vice versa

6. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa

7. Rinse hands with water

8. Dry thoroughly with a single use towel

9. Use towel to turn off faucet

10. 20-30 sec

11. And your hands are safe.

**How to handwash? WITH SOAP AND WATER**

0. Wet hands with water

1. Apply enough soap to cover all hand surfaces.

2. Rub hands palm to palm

3. Right palm over left dorsum with interlaced fingers and vice versa

4. Palm to palm with fingers interlaced

5. Rotational rubbing of left thumb clasped in right palm and vice versa

6. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa

7. Rinse hands with water

8. Dry thoroughly with a single use towel

9. Use towel to turn off faucet

10. 40-60 sec

11. And your hands are safe.
**Avian Influenza Information for Travelers**

The following recommendations are directed to UN staff and their recognized dependents travelling to/through or living in areas where avian influenza A (H5N1) outbreaks among poultry or human H5N1 cases have been reported. These recommendations may be revised as more information becomes available.

**Basic Precautions**

- To minimize the possibility of infection, observe precautions to safeguard your health. Specifically, travellers should avoid touching live or dead poultry (e.g., chickens, ducks, geese, pigeons, quail) or any wild birds or their faeces, and avoid settings where H5N1 infected poultry may be present, such as commercial or backyard poultry farms and live poultry markets.

- Do not eat uncooked or undercooked poultry or poultry products, including dishes made with uncooked poultry blood especially in places where you are not sure that proper food precautions have been taken.

- As with other infectious illnesses, one of the most important preventive practices is careful and frequent hand washing. Cleaning your hands often, using either soap and water (or waterless, alcohol-based hand rubs when soap is not available and hands are not visibly soiled), removes potentially infectious materials from your skin and helps prevent disease transmission.

**Food Preparation**

- Separate raw meat from cooked or ready-to-eat foods. Do not use the same chopping board or the same knife for preparing raw meat and cooked or ready-to-eat foods.

- Do not handle either raw or cooked foods without washing your hands in between.

- Do not place cooked meat back on the same plate or surface it was on before it was cooked.

- All foods from poultry, including eggs and poultry blood, should be cooked thoroughly. Egg yolks should not be runny or liquid. Because influenza viruses are destroyed by heat, the cooking temperature for poultry meat should reach 70°C (158°F).

- Wash egg shells in soapy water before handling and cooking, and wash your hands afterwards.

- Do not use raw or soft-boiled eggs in foods that will not be cooked.

- After handling raw poultry or eggs, wash your hands and all surfaces and utensils thoroughly with soap and water.
If You Believe You May Have Been Exposed:

- Monitor your health for 10 days.

- If you become ill with fever and develop a cough or difficulty breathing, or if you develop any illness during this 10-day period, consult a health-care provider.

- At first contact with your health-care provider, remember to provide the following information:
  1) Your symptoms;
  2) Whether or not you had direct poultry contact;
  3) Where you travelled.

- Do not travel while sick, and limit contact with others as much as possible to help prevent the spread of any infectious illness.
Guidance for Reducing the Risk of Exposure during Transport To Work

General Measures

Staff who are identified as required to perform critical activities, either on-site or off, should at all times avoid public gatherings, public places where uncontrolled close contact (<1 meter or 3 feet) with others might occur, or any other close contact with potentially infectious persons.

Staff who are identified to perform on-site critical functions should not come to work under any of the following circumstances:

• They are feeling unwell, or have any cold/flu type symptoms (headache, fever, sore throat, cough, body aches, running nose, nasal congestion, abdominal pain, cramps or diarrhea). Staff will be advised to acquire a thermometer, and to check their body temperature each morning and evening. No staff member should go to work if the measured temperature is higher than 38°C (100.4°F);

• One of their family members has suspected or confirmed infection with influenza;

• They are aware that they have had recent contact (<48 hours) with someone who is now known to have contracted influenza.

Transport to the Workplace

Public transport should be avoided at all times. Options for transport to the workplace, in order of preference from a risk perspective, are:

• Travel alone in own vehicle.
  – Under such circumstances, no special protective measures are required.

• Travel alone in a rented vehicle.
  – On first acquisition of the vehicle, commonly touched surfaces (door handles, driving controls, surfaces in immediate vicinity of seating) should be wiped down with a recommended disinfectant solution 15.
  – Hands should be washed after any wipe down procedure.

• Shared travel where passengers come < 1 meter or 3 feet of one another.
  – Vehicle occupants are advised to wear a surgical mask while in the vehicle. Commonly touched surfaces (door handles, driving controls, surfaces in

15 There is not sufficient evidence in the medical literature to support a view that dry surfaces constitute a significant risk of infection. This “disinfection” procedure is simply recommended as a precaution. Recommendations for suitable disinfectants can be found in Annex 2.
immediate vicinity of seating) should be wiped down with a recommended disinfectant solution before each use of the vehicle.¹⁶

- All occupants should wash their hands soon after leaving the vehicle, and avoid touching their faces during transport.

- Hands should be washed after any wipe down procedure.

Any staff member who becomes ill should be asked to stay at home for 7-10 days from the onset of symptoms (or longer if still symptomatic). In addition, he/she should, as soon as possible, start a treatment course of oseltamivir and wear a simple surgical mask when meeting other people.

Persons who have been exposed to a known case of pandemic influenza (i.e. “contacts”) should also be asked to stay home for 7-10 days after last exposure to the virus, to cover the incubation period.

If a staff member has a relative or someone else at home suspected of being affected by pandemic influenza, he/she should be monitored at least daily for fever and respiratory symptoms and not come to work for 10 days after the resolution of fever of the infected household member.

¹⁶ All vehicle occupants should be asymptomatic, with no known history of recent contact with infected persons. The risk of droplet transmission from an asymptomatic carrier under such circumstances is extremely low. The use of a surgical mask under such circumstances is simply recommended as a precaution.
List of Six-Weeks Supplies To Be Stocked

**Water**

Stock bottled water or store water in plastic containers such as soft drink bottles. Plan to store 4 litres of water per person per day (2 litres for drinking and 2 litres for household use). Water requirements will also depend on other factors such as temperature. In hot climates an individual’s water requirement may double and children, nursing mothers and those who are ill often require additional supplies. You should store enough water for at least a six-week period. Water purification kits or filters are readily available and should be purchased as a backup.

**Food**

- Store a six-week supply of non-perishable foods. You may wish to consider if you can start a vegetable garden and what you could grow yourself during the winter season, in order to supplement your provisions.
- Select foods that require no refrigeration as electricity supplies may not be available. Consider how you will cook the food, if you need to stock up on gas bottles, for example. As clean water may be limited, choose foods that require little or no water to prepare. Foods that you may consider are:
  - Ready-to-eat canned meats and soups, fruits and vegetables
  - Dry goods such as noodles (remember that you will need to allow for enough water to cook these items). Dry cereal, granola, dried fruits and crackers
  - Canned juices
  - Peanut butter or nuts
  - Staples (salt, sugar, pepper, spices, etc.)
  - High energy foods such as protein or fruit bars
  - Food for infants – canned or jarred baby food and formula
  - Comfort/stress foods
  - Pet food

**Food Storage Advice**

- Keep food in the driest and coolest spot in the house – a dark area if possible. Make sure that it is sealed off from possible vermin.
- Keep food covered at all times.
- Open food boxes or cans carefully so that you can close them tightly after each use.
- Wrap cookies and crackers in plastic bags and keep them in tight containers. This will stop them from going stale and prolong shelf life.
- Empty opened packages of sugar, dried fruits and nuts into screw-top jars or airtight cans to protect them from pests.
• Inspect all food containers for signs of spoilage before use.
• If you lose power, minimize waste by using the food in your fridge first, then the freezer and then finally your non-perishable items.

**Guidelines on the Storage Shelf Life of Common Emergency Foods**

**Use within six months:**
Powdered milk (boxed), dried fruit (in metal container), dry, crisp crackers (in metal container), and potatoes.

**Use within one year:**
Canned condensed meat and vegetable soups: canned fruits, fruit juices and vegetables; ready-to-eat cereals and uncooked instant cereals (in metal containers); peanut butter, jams; hard candy, chocolate bars and canned nuts.

**May be stored indefinitely (in proper containers and conditions):**
Wheat: vegetable oils; corn; backing powder, soybeans, instant coffee, tea, vitamin C and cocoa, salt, non-carbonated soft drinks, white rice, bouillon products, dry pasta, powdered milk (in nitrogen-packed cans).

**Fuels**

• Purchase an emergency supply of petrol/diesel for your car.
• Buy extra provisions of candles, paraffin lamps, batteries, etc. as electricity supplies may not be available.
• Consider how you will prepare foods and consider non-electrical alternatives.

**Medical Kits**

Emergency services may be limited during a time of crisis. Therefore, make sure your home emergency medical kit is not out-of-date, check all supplies for expiry dates and replace any items that are out-of-date or nearing the expiration date.

You may wish to consider stockpiling the following items:

• Glucose and blood pressure monitoring kit
• Adhesive bandages, various sizes
• Sterile dressings, small and large
• Conforming roller gauze bandage
• Triangular bandages
• Packs of sterile gauze pads, large and small
• Adhesive tape, 2” width
• Pairs of medical grade non-latex gloves, medium and large
• Waterless alcohol-based hand sanitizer
• Antiseptic wipes
• Anti-bacterial ointment
• Cold pack
• Scissors (small, personal)
• Tweezers
• Thermometers – remember to have a spare
• CPR breathing barrier, such as a face shield
• Face masks, 3-ply simple surgical masks
• Pain and fever reliever – remember to include both children and adult supplies
• Anti-diarrhea medication
• Antacid (for stomach upset)
• Vitamins
• Fluids with electrolytes (an oral rehydration solution (ORS))
• Stock up on prescription medications that you might need. For example, if one of your family members is diabetic, ensure that you have enough supplies for at least 6 weeks, or if someone has a heart condition, ask your doctor for an extra prescription so that you can have an emergency supply of all the medications your family members need.
• You may need extra bedding if a family member becomes sick, such as sheets, towels, plastic mattress covers, etc. Consider where you could make up a sick bay which could be isolated from the rest of the house, how would you ventilate this room? It is important that air from the room is expelled to the outside of the house and not back into the house. Consider how this might be done.

Other Supplies

• Soap and water or alcohol-based hand wash
• Garbage bags and cleaning supplies; influenza viruses are easily cleaned away with formalin and iodine-based disinfectants. For bathing, soap and water is sufficient.
• Spare contact lenses
• Denture and personal hygiene needs (tissues, toilet paper, disposable diapers)
• Hearing aid batteries
• Fire extinguisher (make sure you all know how to use it)
• A clock that runs off batteries (include spare batteries)
• Flashlight
• Extra batteries
• Portable radio
• Manuel can opener

Disposal of Wastes

Remember that if there is movement restrictions imposed in an area, the collection of waste may not be possible. It is important that you consider alternative arrangements such as composting food wastes, worm farms, etc. If you live in a multiple storey building, ask the building manager if there are emergency plans in place to deal with not only waste disposal but also possible disruption to water and electrical supplies.
ANNEX 2: INFECTION CONTROL RECOMMENDATIONS FOR AVIAN/ PANDEMIC INFLUENZA PATIENTS

This annex provides interim guidance for protection of health-care workers involved in the care of known or suspect avian or pandemic influenza patients. It should be used in conjunction with the two WHO guidelines referenced, “Avian Influenza, Including Influenza A (H5N1), in Humans: WHO Interim Infection Control Guideline for Health Care Facilities” (10 May 2007) and “Infection Prevention and Control of Epidemic- and Pandemic-Prone Acute Respiratory Diseases in Health Care” (June 2007).

Of note, the latest WHO infection control guidelines have changed its recommendations from the use of particulate respirators (e.g. NIOSH-certified N95, EU FFP2 or equivalent masks) for routine care of patients (old guidance) to using particulate respirators only if aerosol-generating procedures are performed (updated guidance).

The infection control guidance provided here is based on current knowledge of routes of influenza transmission, the pathogenesis of influenza, and the effects of influenza control measures used during past pandemics. Given some uncertainty about the characteristics of a new pandemic strain, all aspects of preparedness planning for pandemic influenza must allow for flexibility and real-time decision-making that takes new information into account as the situation unfolds. The specific characteristics of a new pandemic virus—virulence, transmissibility, initial geographic distribution, clinical manifestation, risk to different age groups and subpopulations, and drug susceptibility—will remain unknown until a pandemic is underway. If the new virus is unusual in any of these respects, the UN Medical Service will provide updated infection control guidance.

19 Examples of aerosol-generating procedures include: endotracheal intubation, administration of aerosolized or nebulized medication, bronchoscopy, airway suctioning, tracheostomy care; chest physiotherapy, nasopharyngeal aspiration, positive pressure ventilation via face mask (e.g. BiPAP, CPAP).
The following table summarizes the infection control precautions that health care workers and caregivers should adhere to, depending on the pathogen.

**Table 2. Infection control Precautions for Health Care Workers (HCWs) and Caregivers Providing Care for Patients According to Pathogen**

<table>
<thead>
<tr>
<th>Precaution</th>
<th>Influenza virus with sustained human-to-human transmission (e.g. seasonal influenza, pandemic influenza)</th>
<th>New influenza virus with no sustained human-to-human transmission (e.g. avian influenza)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand hygiene</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Gloves</td>
<td>Risk assessment</td>
<td>Yes</td>
</tr>
<tr>
<td>Gown</td>
<td>Risk assessment</td>
<td>Yes</td>
</tr>
<tr>
<td>Eye Protection</td>
<td>Risk assessment</td>
<td>Yes</td>
</tr>
<tr>
<td>Surgical mask</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Particulate respirator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For room entry</td>
<td>No</td>
<td>Not routinely</td>
</tr>
<tr>
<td>Within 1 m of patient</td>
<td>No</td>
<td>Not routinely</td>
</tr>
<tr>
<td>For aerosol-generating procedures</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Surgical mask on patient when outside isolation areas</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Single room</td>
<td>Yes, if available</td>
<td>Yes</td>
</tr>
<tr>
<td>Airborne Precaution room</td>
<td>No</td>
<td>Not routinely</td>
</tr>
<tr>
<td>Summary of infection control precautions for routine patient care, excluding aerosol-generating procedures</td>
<td>Standard plus Droplet Precautions</td>
<td>Standard plus Droplet plus Contact Precautions</td>
</tr>
</tbody>
</table>

a. Perform hand hygiene in accordance with Standard Precautions.
b. Gloves and gowns should be worn in accordance with Standard Precautions. If glove demand is likely to exceed supply, glove use should always be prioritized for contact with blood and body fluids (nonsterile gloves), and contact with sterile sites (sterile gloves).
c. If splashing with blood or other body fluids is anticipated and gowns are not fluid-resistant, a waterproof apron should be worn over the gown.
d. Facial protection (surgical masks and eye protection) should be used in accordance with Standard Precautions by HCWs if activities are likely to generate splashes or sprays of blood, body fluids, secretions and excretions on to mucosa of eyes, nose or mouth; or if in close contact with a patient with respiratory symptoms (e.g. coughing/sneezing) and sprays of secretions may reach the mucosa of eyes, nose or mouth.
e. As of the date of this document, no sustained efficient human-to-human transmission of avian influenza A is known to have occurred, and the available evidence does not suggest airborne transmission from humans to humans. Therefore a surgical mask is adequate for routine care.
f. Examples of aerosol-generating procedures include: endotracheal intubation, administration of aerosolized or nebulized medication, bronchoscopy, airway suctioning, tracheostomy care; chest
physiotherapy, nasopharyngeal aspiration, positive pressure ventilation via face mask (e.g. BiPAP, CPAP).

g. If surgical masks are not available, use other methods for source control (e.g. handkerchiefs, tissues or hands) when coughing and sneezing.

h. Cohort patients with the same diagnosis. If this is not possible, place patient beds at least 1 m apart.

i. Airborne precaution rooms can be naturally or mechanically ventilated, with adequate air change rate of at least 12 ACH and controlled direction of air flow.

j. Airborne precaution rooms, if available, should be prioritized for patients with airborne infections

---

**Transmission-Based Precautions**

Available evidence suggests that transmission of human influenza viruses occurs through multiple routes including large droplets, direct and indirect contact, and droplet nuclei. However, observational studies conducted in health-care facilities suggest that droplet transmission is the major mode of transmission in that setting.

According to WHO, **Standard plus Contact plus Droplet Precautions** should be applied for routine patient care of suspected or confirmed AI-infected patients; whereas **Standard plus Droplet Precautions** should be applied for suspected or confirmed Pandemic Influenza patients. In either case, if aerosol-generating procedures are performed, PPE should include particulate respirator (e.g. NIOSH-certified N95, EU FFP2 or equivalent masks) instead of medical/surgical mask.

Details of each of these transmission-based precautions are as follows:

**Standard Precautions**

Standard precautions should be used when dealing with all patients receiving care, regardless of their diagnosis or presumed infection status. **Standard precautions** apply to (1) blood; (2) all body fluids, secretions, and excretions except sweat, regardless of whether or not they contain visible blood; (3) non-intact skin; and (4) mucous membranes.

Standard precautions include:

- The use of gloves and facial (nose, mouth, and eye) protection by health care workers when providing care to coughing/sneezing patients.

- Hand hygiene before and after patient contact, and after removing gloves or other PPE. Routine hand hygiene is performed either by using an alcohol-based hand rub or by washing hands with soap and water and using a single-use towel for drying hands. If hands are visibly dirty or soiled with blood or other body fluids, or if broken skin might have been exposed to infectious material, health care workers should wash their hands thoroughly with soap and water.

- Standard operating procedures to handle and disinfect patient care equipment, patient rooms, and soiled linen; prevent needlestick/sharp injuries; and address environmental cleaning, spills-management, and handling of waste.
**Contact Precautions**

In addition to standard precautions, contact precautions are indicated when dealing with patients known or suspected to have serious illnesses easily transmitted by direct patient contact or by contact with items in the patient’s environment. In addition to standard precautions, contact precautions include:

- Putting on PPE (such as gowns) prior to entry into a patient room and taking off PPE prior to exit.

- When possible, dedicate the use of patient-care equipment to a single patient (or cohort of patients with the same infection) to avoid sharing between patients. If use of common equipment or items is unavoidable, then adequately clean and disinfect them before use for another patient.

- Limiting patient movement.

- Placing the patient in a private room or with patients who have active infection with the same microorganism or who are suspected to have active infection with the same microorganism but with no other infection (cohorting).

**Droplet Precautions**

In addition to standard precautions, droplet precautions include the use of a surgical mask when working within 1 meter or 3 feet of the patient and the placement of the patient in a private room or with patients who have an active infection with the same microorganism but with no other infection (cohorting).
Isolation Room Recommendations

General Principles of an Isolation Unit

![Diagram of isolation unit]

A. Disinfection station
B. Storage for general ward clothes, new PPE.
C. Biohazard bag for used PPE disposal.
D. Wall-mounted alcohol hand-wash dispensers.
E. Windows...external only. Keep clear of public.

Suggested Checklist for Isolation Room/Area Trolley/Table

The following items should be kept on this trolley at all times so that personal protective equipment is always available for staff.

- Face shield/visor/goggles
- Single use gloves for clinical use (sizes: small, medium, and large)
- Gloves (reusable for environmental cleaning)
- Hair covers (optional for high-risk procedures, but should be available)
- Particulate respirators (NIOSH-certified N95, EU FFP2 or equivalent masks)
- Surgical masks
- Single-use long-sleeved fluid-resistant gowns
- Single-use plastic aprons (optional; for use if splashing is anticipated)
- Alcohol-based hand rub
- Plain soap (liquid if possible, for washing hands in clean water)
- Clean single-use towels
- Sharps containers
- Appropriate disinfectant for environmental cleaning
- Large plastic bags
- Appropriate clinical waste bags
- Linen bags
- Collection container for used equipment

For more information on isolation precautions, see:
Family Member/Visitor Recommendations

Visitors should be strictly limited to those necessary for the patient’s well-being and care. They should be advised about the possible risk of avian or pandemic influenza transmission.

- Visitors should be provided with PPE, and be instructed in its use and in hand hygiene practices prior to entry into the patient isolation room/area.
- Parents/legal guardians of paediatric patients should be strongly supported to accompany the patient throughout the hospitalization.
- Parents/relatives/legal guardians may assist in providing care to infected patients in special situations (e.g. lack of resources, paediatric patients, etc.) if adequate training and supervision of PPE use and hand hygiene is ensured.
- Because family members may have been exposed to the influenza virus via the patient or similar environmental exposures, all family members and visitors should be screened for symptoms of respiratory illness at entry to the facility.
- Family members and visitors with symptoms should be considered as possible infected cases and should be evaluated for avian or pandemic influenza infection.

Recommendations on Pre-hospital Care and Transport Outside Health Care Facilities

- If tolerated by the patients, place a surgical mask on all patients with respiratory illness to contain droplets expelled during coughing. If this is not possible (i.e. would further compromise respiratory status, difficult for the patient to wear), have the patient cover the mouth/nose with tissue when coughing, or use the most practical alternative to contain respiratory secretions.
- Screen patients with severe acute febrile respiratory illness for avian influenza risk factors.
- Health care workers should use Standard plus Contact plus Droplet Precautions if pre-hospital care is being provided for a suspected or confirmed avian influenza-infected patient or during transport of the patient in a vehicle.
- Unless medically necessary to support life, aerosol-generating procedures (e.g. mechanical ventilation) should be avoided during pre-hospital care or during transport.
- During transport, optimize the vehicle’s ventilation to increase the volume of air exchange. When possible, use vehicles that have separate driver and patient compartments that can provide separate ventilation to each area. In this situation, drivers do not require particulate respirators (e.g. N-95 masks).
- Notify the receiving facility as soon as possible prior to arrival that a patient with suspected avian or pandemic influenza infection is being transported to the facility and of the precautions that are indicated.
- Follow recommended procedures for disposal of waste and cleaning and disinfecting the emergency vehicle and reusable patient-care equipment after pre-hospital care or...
transport has been provided. Use a gown and gloves followed by hand hygiene for these procedures.

### Environmental Management Strategies Recommended for Health Care Facilities

#### Environmental Cleaning and Disinfection

Please note that cleaning must precede disinfection. Influenza virus is inactivated by a range of disinfectants, including phenolic disinfectants, quaternary ammonia compounds, peroxygen compounds, sodium hypochlorite (household bleach), alcohol and other germicides with a tuberculocidal claim on the label. Follow the manufacturers’ recommendations for use/dilution, contact time, and handling of disinfectants.

Use of bleach and alcohol are as follows:

<table>
<thead>
<tr>
<th>Disinfectants</th>
<th>Recommended use</th>
<th>Precautions</th>
</tr>
</thead>
</table>
| Sodium hypochlorite (“bleach”) | Disinfection of material contaminated with blood and body fluids | Should be used in well-ventilated areas 
Protective clothing required while handling and using undiluted 
Do not mix with strong acids to avoid release of chlorine gas 
Corrosive to metals |
| For 5% solutions (initial concentration), mix with clean water in the ratio 1:100 to achieve final use concentration of 0.05%. | | |
| Bleaching powder | For toilets / bathrooms – and may be used in place of liquid bleach if this is unavailable | Same as above |
| 7g/litre with 70% available chorine. (Available chlorine is the proportion of chlorine remaining in chlorinated water that has not reacted with contaminants) | | |
| Alcohol (70%) | Smooth metal surfaces, tabletops and other surfaces on which bleach cannot be used. | Flammable, toxic, to be used in well-ventilated area, avoid inhalation. 
Keep away from heat sources, electrical equipment, flames, and hot surfaces. 
Allow it to dry completely, particularly when using diathermy as this can cause diathermy burns. |
| Isopropyl, ethyl alcohol, methylated spirit. | | |

- Medical equipment should be cleaned and disinfected between use.
- Patient rooms/areas should be cleaned at least daily and terminally at discharge. In addition to daily cleaning of floors and other horizontal surfaces, special attention should be given to cleaning and disinfecting frequently touched surfaces (e.g. medical equipment, bedside and over-bed tables, television controls, call buttons, safety/pull-up bars, doorknobs, commodes, ventilator surfaces).

- To avoid possible aerosolization of the virus; damp, rather than dry dusting or sweeping should be performed whenever possible; dust horizontal surfaces by moistening a cloth with a small amount of disinfectant.
• During wet cleaning, cleaning solutions and equipment soon become contaminated; clean less heavily contaminated areas first and change cleaning solutions, cleaning cloths, and mop heads frequently.

• The double bucket method (i.e. one bucket for cleaning solution, one for rinsing) is recommended.

• Equipment used for cleaning and disinfection must be cleaned and dried after each use. Mop heads should be laundered daily and dried thoroughly before storage or reuse.

• Paper sheeting that is changed between patients is appropriate for patient examination tables in outpatient areas; use disinfectant to wipe down table between patients.

• Do not spray (i.e. fog) occupied or unoccupied rooms with disinfectant. This is a potentially dangerous practice that has no proven disease control benefit.

**Dishes and Eating Utensils**

• Use standard precautions for handling dishes and eating utensils used by suspected or confirmed avian or pandemic influenza-infected patients outside of the isolation room/area.

• When possible, wash reusable items in a dishwasher with detergent at the recommended water temperature. If dishwashers are not available, detergent and water should be used to wash items. Rubber gloves should be used if washing items by hand.

• Disposable items should be discarded with other general waste.

**Linen and Laundry**

The use of standard precautions is recommended for handling linen and other laundry that may be contaminated with blood, body fluids, secretions, or excretions from suspected or confirmed avian or pandemic influenza-infected patients.

• Place soiled linen directly into a laundry bag in the isolation room/area. Contain linen in a manner that prevents the linen bag from opening or bursting during transport and while in the soiled linen holding area. Heavily soiled linen should be rolled or folded to contain the heaviest soil in the centre of the bundle. Large amounts of solid material (e.g. faeces) should be removed from linen with a gloved hand and toilet tissue and then placed into a toilet for disposal (close toilet lid when flushing), before linen is placed into the laundry bag.

• When transporting soiled linen and laundry outside the isolation room/area, use gloves followed by hand hygiene.

• Soiled linen and laundry should not be shaken or otherwise handled in a manner that might create an opportunity for contamination of the environment or aerosolization of virus.

• Laundry personnel should use standard precautions and perform hand hygiene after removing PPE that has been in contact with soiled linen and laundry.

• Wash and dry linen according to routine facility standards and procedures.
Waste Disposal

Use standard precautions when working with solid waste that may be contaminated with the influenza virus outside of the isolation room/area. Clinical (infectious) waste includes waste directly associated with blood, body fluids, secretions and excretions; laboratory waste that is directly associated with specimen processing, human tissues, including material or solutions containing blood, and animal tissue or carcasses used for research; and also includes discarded sharps.

- All waste generated in the isolation room/area should be removed from the room/area in suitable containers or bags that do not allow for spillage or leakage of contents.
- Waste should be classified as directed by the national laws or regulations and disposed of as per facility policy and in accordance with national regulations pertaining to such waste.
- One layer of packing is adequate providing the used equipment and soiled linen and waste can be placed in the bag without contaminating the outside of the bag. Double bagging is unnecessary.
- When transporting waste outside the isolation room/area, use gloves followed by hand hygiene.
- Although the risk of transmission of infection via human faeces is unknown, faeces of infected patients should be handled with caution and possible aerosolization of faeces (e.g. removal of faeces from bedpan, commode, clothing, or reusable incontinence pads by spraying with water) should be avoided.
- Liquid waste such as urine or faeces can be flushed into the sewerage system if there is an adequate system in place. Close toilet cover when flushing faeces.

Duration of infection Control Precautions and Patient Discharge

The duration of infection precautions for avian and pandemic influenza should be implemented according to the patient’s age:

- Adults and adolescents > 12 years of age – implement precautions at time of admission and continue for 7 days after resolution of symptoms.
- Infants and children ≤ 12 years of age – implement precautions at time of admission and continue for 21 days after symptom onset (young children can shed seasonal influenza viruses for up to 21 days).

Note that for immuno-compromised patients, pathogen shedding may be protected and there are no data to define the duration of infectiousness at the moment. Microbiologic monitoring to determine lack of pathogen delectability is advised whenever possible.
Infection Control Recommendations for the Home Setting

During a pandemic, it may not be possible to provide acute or ambulatory-care services for all persons who might need them. It is possible that health care facilities will triage patients and may only be able to provide care for the most severely ill patients who are considered to have a chance of survival. It is also possible that ambulatory-care facilities may be unable to meet the demand for health-care services. As such, patients with pandemic influenza may require care in the home setting. Such patients may be quite ill and will be infectious to others for a period of time and could transmit secondary infection or disease to their household contacts.

Pandemic influenza can spread easily within a household. Everyone in contact with an ill person who has not already been infected is at risk for infection. Household members should observe the following recommendations:

- Limit contact with the ill person as much as possible. Stay in a different room or if that is not possible, stay as far away from the ill person as possible, e.g. sleep in a separate bed and bedroom, if possible.
- Shared spaces (restrooms, kitchen, bathroom, etc) should be well ventilated (e.g. natural ventilation, keeping windows open).
- Cleaning of the environment is important to prevent indirect transmission, particularly in shared spaces.
- If close contact care must be provided to the ill person, the ill person should cover their mouth/nose with hands or other materials (e.g. tissues, handkerchiefs, or if available, a cloth or surgical mask). If available, the caregiver also should wear a surgical mask or the best available protection against respiratory droplets when in close contact with the ill person.
- Materials used to cover the mouth/nose should be discarded or cleaned appropriately.
- Avoid direct contact with body fluids. If contact occurs, perform hand hygiene immediately afterwards.
- Hand hygiene can be performed by means of hand washing with soap and water or an alcohol-based hand rub. There are safety concerns (i.e. accidental ingestion, fire hazards) that must be addressed before alcohol-based hand rubs can be recommended for household use.
ANNEX 3: RECOMMENDATIONS ON PERSONAL PROTECTIVE EQUIPMENT\textsuperscript{20,21}

The following types of PPE are recommended for health care workers providing care to avian or pandemic influenza-infected patients

- The use of PPE is mandatory if direct close contact with the patient is anticipated and when entering the room where aerosol-producing procedures\textsuperscript{3} in avian or pandemic influenza-infected patients are being performed.
- The PPE recommended when providing care to avian influenza-infected patients are:
  - **Surgical mask**
  - **Particulate respirators** that are at least as protective as NIOSH-certified N95, EU FFP2, or equivalent should be used when performing aerosol-generating procedures.
    - Appropriate procedures should be used to select a particulate respirator that fits well and a “user seal check” (see below) should be performed each time a disposable particulate respirator is worn.
    - Surgical masks do not provide protection against small-particle aerosols (droplet nuclei) and aerosol-generating procedures should not be avoided as much as possible performed if a particulate respirator is not available.
  - **Eye protection** (face shield, visor, or goggles) if sprays/splashes of secretions are anticipated and for all aerosol-generating procedures. When providing care, in close contact with a patient with respiratory symptoms (e.g. coughing/sneezing), sprays of secretions may occur and eye protection should be used.
  - **Clean, non-sterile ambidextrous gloves**, which should cover the cuffs of the gown.
  - **Clean, non-sterile long-sleeved gowns** (fluid-resistant, if available); If cloth gowns are used, a waterproof apron should also be used if splashing of blood, body fluids, excretions, or secretions is anticipated.

Putting On and Removing PPE

Suggested Sequence for Putting on PPE (when all PPE items are needed)

1. Identify hazards & manage risk. Gather the necessary PPE. Plan where to put on & take off PPE. Do you have a buddy? Mirror? Do you know how you will deal with waste?

2. Put on a gown

3. Put on particulate respirator or medical mask; perform user seal check if using a respirator

4. Put on eye protection e.g. face shield/goggles (consider anti-fog drops or fog-resistant goggles) Caps are optional: if worn, put on after eye protection

5. Put on gloves (over cuff)
**Suggested Sequence for Removal of PPE**

1. Avoid contamination of self, others & the environment  
   - Remove the most heavily contaminated items first
   
   Remove gloves & gown:  
   - peel off gown & gloves and roll inside, out  
   - dispose gloves and gown safely

2. Perform hand hygiene

3. Remove cap (if worn)  
   - Remove goggles from behind  
   - Put goggles in a separate container for reprocessing

4. Remove respirator from behind

5. Perform hand hygiene
Particulate Respirator User Seal Check

1. Cup the respirator in your hand with the nosepiece at your fingertips allowing the headbands to hang freely below your hand

2. Position the respirator under your chin with the nosepiece up

3. Pull the top strap over your head resting it high at the back of your head. Pull the bottom strap over your head and position it around the neck below the ears

4. Place fingertips of both hands at the top of the metal nosepiece. Mould the nosepiece (USING TWO FINGERS OF EACH HAND) to the shape of your nose. Pinching the nosepiece using one hand may result in less effective respirator performance

5. Cover the front of the respirator with both hands, being careful not to disturb the position of respirator

5A Positive seal check
- Exhale sharply. A positive pressure inside the respirator = no leakage. If leakage, adjust position and/or tension straps. Retest the seal.
- Repeat the steps until respirator is sealed properly

5B Negative seal check
- Inhale deeply. If no leakage, negative pressure will make respirator cling to your face.
- Leakage will result in loss of negative pressure in the respirator due to air entering through gaps in the seal
Table 3. PPE To Be Provided to Staff According To Risk Categories

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Characteristic of Exposure of Staff</th>
<th>Examples of Staff</th>
<th>Surgical Masks</th>
<th>Gloves</th>
<th>Gown</th>
<th>Particulate Respirators (e.g. N95 masks)</th>
<th>Eye Protection (e.g. Goggles/ Face Shield)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Health care workers who manage patients clinically and have close contact (&lt;1 meter) with known/suspected pandemic patients or their infectious material</td>
<td>E.g. Doctors, nurses who work in the fever clinic</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2</td>
<td>Non-health care worker staff who have close contact (&lt;1 meter) with known/suspected pandemic patients or their infectious material</td>
<td>E.g. Security personnel, receptionist, cleaning staff who work in the fever clinic</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>3</td>
<td>Staff with close contact (&lt;1 meter) with persons of &quot;unknown&quot; pandemic status</td>
<td>E.g., Essential duty travelers</td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>4</td>
<td>Staff infected with pandemic influenza</td>
<td>E.g. Patients in the fever clinic</td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5</td>
<td>Staff with no known close contact (&lt;1 meter) with known/ suspected pandemic patients or their infectious material</td>
<td>E.g. Critical staff &quot;quarantined&quot; in work space, and not working in the fever clinic</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
ANNEX 4: CLINICAL ALGORITHMS FOR THE MANAGEMENT OF INFECTED PERSONS

Algorithm for the Clinical Management of Persons with Acute Febrile Respiratory Illness Suspected of Being Avian Influenza

Screening
As soon as the patient mentions a febrile respiratory illness and travel to an area of the world affected by H5N1 and contact with sick, dying or dead poultry and/or wild birds or infected humans, the following precautions would be taken before continuing with the assessment.

Home/ Non-Health Care Setting
Strict Hand Hygiene
Location: At patient’s home in separate room if possible; if not, away from communal areas
Patient: to wear mask (surgical)
Health care staff: to wear N95 mask, gown/coverall and gloves

Health Care Facility
Strict Hand Hygiene
Location: Separate room
Patient: to wear mask (surgical)
Health Care staff: to wear N95 mask, goggles, gown/coverall and gloves

Assessment
A person presenting with unexplained acute lower respiratory illness with fever (>38 °C) and cough, shortness of breath/difficulty breathing OR other severe life threatening illness.

AND
One or more of the following exposures in the 7 days prior to symptom onset:

a. Close contact (<1 metre or 3 feet) with a person (e.g. caring for, speaking with, or touching) who is a suspected, probable, or confirmed H5N1 case;

b. Exposure (e.g. handling, slaughtering, defeathering, butchering, preparation for consumption) to poultry or wild birds or their remains or to environments contaminated by their faeces in an area where H5N1 infections in animals or humans have been suspected or confirmed in the last month;

c. Consumption of raw or undercooked poultry products in an area where H5N1 infections in animals or humans have been suspected or confirmed in the last month;

d. Close contact with a confirmed H5N1 infected animal other than poultry or wild birds (e.g. cat or pig);

e. Handling samples (animal or human) suspected of containing H5N1 virus in a laboratory or other setting.

No
Unlikely to be influenza A (H5N1)
Treat as indicated

Yes
Refer to Hospital for treatment and investigation
Notify hospital infection control and occupational health
Notify Ministry of Health (MOH)

Hospital Investigations and Treatment
Consider treatment with Oseltamivir (UN Physician to provide antivirals if unavailable in the hospital)

---22 WHO “Case Definition of Suspected Case of Human Infections with Influenza A (H5N1) Virus”, 29 August 2006. Please note that this case definition applies to the current WHO phase of pandemic alert (phase 3) and may change as new information about the disease or its epidemiology becomes available. In clinical situations requiring decisions concerning treatment, care or triage of persons who may have H5N1 infection, those decisions should be based on clinical judgment and epidemiological reasoning, and not on adherence to the case definitions. While most patients with H5N1 infection have presented with fever and lower respiratory complaints, the clinical spectrum is broad. For updated lists of counties and regions affected by avian influenza A/H5N1 confirmed by WHO (human cases) or OIE (animal cases), please see http://www.who.int/csr/disease/avian_influenza/en/ and http://www.oie.int/eng/en_index.htm
Pandemic Influenza Self Care Algorithm for Adults

Is your temperature 38°C or higher? No

Do you have a sore throat, stuffy or runny nose? No

Possible cause: Uncomplicated cold

Do you have a dry cough and any of the following?
- Aching muscles or joints
- Headache
- Extreme tiredness
- Sore throat
- Runny/stuffy nose

Yes

Home Care
Call your health care provider/fever clinic. Oseltamivir (Tamiflu) will be prescribed and provided when indicated.

Are you:
- Short of breath while resting or doing very little
- Finding breathing difficult or painful
- Wheezing
- Coughing up lots of phlegm or blood-tinged sputum
- Feeling very drowsy and others have difficulty waking you up or note you seem confused/disoriented

And/Or

Do you have:
- Chronic heart or lung disease requiring regular medical attention
- A chronic condition such as diabetes, cancer, for which you are receiving treatment, diseases or treatments that affect the immune system e.g. HIV/AIDS, kidney disease?
- Difficulty getting around/doing daily activities because of weakness
- Are you pregnant

Seek medical attention now
What You Can Do For Yourself

- Rest – you will probably feel very weak until your temperature returns to normal
- Fluids – extra fluids are needed to replace those lost in sweating and respirations. If your urine is dark, you need more to drink. Warm fluids help loosen mucus.
- Take paracetamol as recommended on the package for fever and muscle pain.
- Children less than 18 years of age should NOT take acetylsalicylic acid (Aspirin, ASA) or any products containing acetylsalicylic acid (ASA) or other salicylates.
- Antibiotics will not help, except for bacterial complications.
- Treat your symptoms, e.g. cough suppressant
- Stay home – adults for 7-10 days from the onset of fever and children for 21 days after the initial onset of symptoms
- Ask for help from family/friends if you live alone, are a single parent with small children, or are having a hard time taking care of your own/your family’s needs.

Oseltamivir (Tamiflu)

- Oseltamivir (Tamiflu) is a prescription medication and should be taken according to medical advice. To obtain oseltamivir (Tamiflu) – first contact your health care provider – if possible by phone.
- Oseltamivir (Tamiflu) needs to be taken as soon as possible.
- Adult treatment dose – 75mg capsules twice a day for 5 days. Weight-adjusted doses in children.
- If supplies are unavailable, contact your UN health care facility/fever clinic. Other antiviral drugs may be recommended under some circumstances.

Medical Attention

If any of the following happen during the flu, SEEK MEDICAL ATTENTION when:

- you are short of breath especially while resting
- you have pain in your chest when you breathe
- you are coughing up bloody sputum
- you are wheezing
- you still have a fever and are not feeling better after 5 days
- you are feeling better and then you develop a new fever or worsening cough with sputum
- you or others note that you are extremely drowsy or are confused/disorientated or develop a severe headache.
What You Can Do For Your Child

- Allow your child to rest. He/she will probably feel very weak until their temperature returns to normal.
- Offer fluids frequently while awake; extra fluids are needed to replace those lost in sweating. If your child’s urine is dark, they need more to drink.
- Give your child paracetamol as recommended on the package for fever and muscle pain.
- Children less than 18 years of age should NOT take acetylsalicylic acid (Aspirin, ASA) or any products containing acetylsalicylic acid (ASA) or other salicylates.
- Antibiotics will not help, except for bacterial complications.
• Treat your child’s symptoms, e.g. cough suppressant, salt water nose drops. Teach your child to cover their mouth when they cough and then throw the tissue away. Wash your hands often and teach your child to do the same.
• Keep your child at home for 21 days after the initial onset of symptoms.

Oseltamivir (Tamiflu)

• If your child is over the age of one and is taking oseltamivir/Tamiflu for treatment, the dose will be prescribed according to the child’s weight. Please follow the weight dose regime prescribed, this information can be found on the information sheet given with the medication.
• Oseltamivir/Tamiflu is a prescription medication and should be taken according to medical advice. To obtain oseltamivir/Tamiflu – first contact your health care provider.
• If supplies are unavailable, contact your UN health care facility/fever clinic.

Medical Attention

If any of the following happen during the flu -- TAKE YOUR CHILD TO SEE A DOCTOR

Your child:
• is short of breath even while resting
• has pain in their chest when you breathe
• is coughing up bloody sputum
• is wheezing
• still have a fever and are not feeling better after 5 days
• is feeling better and suddenly develops a fever
• is hard to wake up, unusually sleepy or unresponsive
Pandemic Influenza Self Care Algorithm For Young Children (Age birth to 6 years)

Is your child’s temperature 38°C or higher?  

**Yes**

Does your child have/is your child:
- severe trouble breathing
- blue lips
- limp or unable to move
- hard to wake up or unusually quiet or unresponsive
- a stiff neck
- seem confused
- seizures (fit)
- Less than 1 wet diaper in 12 hours

**Yes**

Go to the hospital emergency department or call emergency services

**No**

Does your child have:
- a temperature over 39°C rectal or 38°C armpit if 6 months to 3 years old
- a temperature over 39.4°C rectal or 38.8°C ear or 38.4°C armpit if older than 3 years
- constant irritability and is not calming down
- extreme lethargy – they are never interested in playing with toys
- a fever lasting more than 5 days
- takes in less that ½ the usual amount of fluids or does not urinate at least every 6 hours while awake (or wet fewer than 4 diapers in 24 hours)
- vomiting for more than 4 hours
- severe diarrhoea

**Yes**

Take your child to see a doctor

**No**

Does your child have:
- chronic heart or lung disease requiring regular medical attention
- a chronic conditions such as diabetes, cancer, which is receiving treatment
- diseases or treatments that affect the immune system e.g. HIV/AIDS, kidney disease
- a condition requiring regular use of ASA (acetylsalicylic acid)
- is your child under six months of age?

**Yes**

Contact your healthcare provider/fever clinic

**No**

Does your child have any of: Irritability, eating poorly, has a hoarse cry, barking cough, diarrhoea or vomiting, stomach pain

**Yes**

Home Care
Call your healthcare provider/fever clinic. Oseltamivir (Tamiflu) will be provided when indicated.
What You Can Do For Your Child

- Give your child paracetamol as recommended on the package for fever and muscle pain. Children less than 18 years of age should NOT take acetylsalicylic acid (Aspirin, ASA) or any products containing acetylsalicylic acid (ASA) or other salicylates.
- Antibiotics will not help, except for bacterial complications.
- Dress in light-weight clothing and keep room cool, if possible around 20°C.
- Offer cool fluids frequently while awake.
- Allow your child to rest. Keep home for 21 days from the onset of symptoms so that the virus does not spread.
- Use salt water nose drops to treat a stuffy nose. Teach your child to cover their mouth when they cough and then throw the tissue away. Wash your hands often and teach your child to do the same.
- Avoid cool baths.

Oseltamivir (Tamiflu)

- If your child is over the age of one and is taking oseltamivir (Tamiflu) for treatment, the dose will be prescribed according to the child’s weight. Please follow the weight dose regime prescribed.
- Oseltamivir (Tamiflu) is a prescription medication and should be taken according to medical advice. To obtain oseltamivir/Tamiflu – first contact your health care provider.
- If supplies are unavailable, contact your UN health care facility/fever clinic.
ANNEX 5: MANAGEMENT OF CLOSE CONTACTS

The management of close contacts is an important strategy in preventing the spread of infectious diseases that transmit from person-to-person. During Level 3 Emergency Mode (with potentially high case load), it is likely that it will not be possible to trace and quarantine close contacts of all suspected or confirmed cases within 48 hours. However, in certain situations, particularly during Level 2 Crisis Response Mode, efforts to identify exposed individuals or groups might be recommended.

Specific recommendations on the management of close contacts will be provided to duty stations as the situation changes. However, the general principles of how contacts may be managed are as follows.

Tracing and Monitoring of Contacts

A patient’s close contacts may include household and social contacts, family members, workplace or school contacts, and/or health care providers who had unprotected close contact (1 meter or 3 feet) starting 24 hours prior to the patient’s symptom onset. Contacts may be managed either by the use of passive or active monitoring for at 7-10 days after their last contact with the infected person. Passive monitoring relies on the affected person to contact a health care provider if symptoms develop. Active monitoring involves direct assessment (by phone or in person) of each contact at least once a day by a designee of the health care provider. Regardless of the type of monitoring recommended, all contacts of confirmed cases should be advised to:

- Be vigilant for fever (i.e. measure temperature twice a day), respiratory symptoms and other symptoms of pandemic influenza for at least 7-10 days after last exposure to the virus or until the diagnosis of avian/pandemic influenza has been excluded.
- If symptoms develop, contact a health care provider so that clinical evaluation can be performed without delay.

An important category of staff to be monitored are all health care workers who are in contact with suspected or confirmed cases.

Quarantine of Contacts

Quarantine is the separation and restriction of movement or activities combined with the monitoring of contacts to prevent further transmission of disease. Depending on the situation, quarantine can be conducted in the home, in designated facilities or at the workplace (e.g. for health care workers). The recommended duration of quarantine for H5N1 is generally 7-10 days from the last exposure to the virus. During that period, contacts should be monitored at least daily for fever and respiratory symptoms. If feasible, necessary support (e.g. psychosocial support, food, household and medical supplies and care for family members) may be required to enable contacts to comply with quarantine appropriately.

ANNEX 6: ESTABLISHMENT OF A FEVER CLINIC

Fever clinics are facilities where patients with symptoms of pandemic influenza can be assessed and managed to minimize influenza transmission in the community. They are a significant part of an organized response to an influenza pandemic within the UN system and will be activated during Level 3 Emergency Mode. While the role played by fever clinics may be different for various duty stations, the level of resources necessary to operate them will depend on the stage of the pandemic and the demand by staff. Where fever clinics are not foreseen in national plans, UN Country Teams should develop plans to establish these facilities.

When large localized clusters of influenza are occurring in the community, fever clinics will be vital to the rapid identification of suspected and confirmed cases, thus allowing the spread of the disease to be delayed through case isolation, rapid treatment and the provisions of antivirals to those at risk, education and information, and infection control practices. When widespread transmission is occurring in the community, fever clinics will provide standardized assessment, triage and management of patients with suspect influenza in accordance with UNCT plans. Cases will be streamed for care in home, or for admission to hospital.

Objectives

The objectives of fever clinics are as follows:

- To provide standardized assessment and triage of suspected cases of pandemic influenza
- To direct cases to the home for self-care or inpatient healthcare facilities
- To decrease patient presentations to the normal healthcare facilities thereby allowing those facilities to continue their core business and reducing the risk of transmission within those settings
- To minimize the number of healthcare workers and other patients exposed to patients with influenza
- To maintain optimal infection control practices

Planning assumptions

As a guide to operational planning, the United Nations System Influenza Coordinator’s estimates of illness rate, outpatient visits and hospitalizations (Table 1) may be utilized. It should be noted, however, that a range of estimates exists, depending on the local circumstances and health seeking behavior of staff in individual duty stations. For example, WHO states that in refugee and displaced population, all symptomatic patients will seek health care and that an additional 15% of the population will present to outpatient services as the “worried well”. As such, duty

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25 For example, in WHO, Pandemic Influenza Preparedness and Mitigation in Refugee and Displaced Populations, WHO guidelines for Humanitarian Agencies, (May 2006), available at [http://www.who.int/csr/disease/avian_influenza/guidelines/humanitariandoc2006_04_07/en/index.html](http://www.who.int/csr/disease/avian_influenza/guidelines/humanitariandoc2006_04_07/en/index.html). WHO assumes that 100% of symptomatic patients will seek health care and that an additional 15% of the population will present to outpatient services as the “worried well”.

stations should always consider their individual situation and use the higher planning figures/estimates for operations planning and management of their fever clinic.

**Activation**

Fever clinics will be activated in Level 3 Emergency Mode. Once activated, fever clinics should be fully operational within 24 hours.

**Site Selection**

When assessing potential sites for a fever clinic, considerations should be given to the following:

- **Location:** Close proximity, preferably within walking distance, to medical care facilities designated for inpatient care of influenza patients. The site should be accessible directly from outside and should not require patients to transit through a UN medical care facility or building in order to reach the fever clinic. It should be accessible by staff, with vehicular access with clearly designated areas for asymptomatic staff and suspected cases. Areas for secure storage of pharmaceuticals and equipment should be available.

- **Layout:** The layout should ensure a unidirectional flow of patients from entry to exit. A one metre distance between patients should be ensured using adequate signage and proper layout. Separate waiting and assessment areas for patients who meet the case definition of pandemic influenza and those who do not should be designated. Designated staff rest areas, changing rooms, and toilet facilities should be out of public view and in line with infection control practices.

- **Infection control:** The main principles are to limit contact between infected and non-infected patients, protect people caring for influenza patients and contain infectious respiratory secretions. Strict adherence to the infection control guidelines recommended in Annexes 2 and 3 is necessary. Infection control training and routine briefing and practice is essential for all non-clinical and clinical staff prior to and ongoing during operation of clinics. Adequate signage to remind staff of correct infection control practices should be positioned in all relevant areas. Areas that are considered clean and contaminated should be clearly designated. Hand washing facilities and surgical masks for patients should be made available at the entry to the fever clinic as well as throughout all areas. Large quantities of medical and regular waste will be generated, therefore secure waste collection bins and frequent waste disposal should be arranged and be in line with national guidance (e.g. incineration).

- **Utilities:** A reliable water and electricity supply, adequate hand washing facilities, storage space and access to hospital telephone and computer networks are required.

- **Ventilation:** There is no evidence to link air conditioning systems with transmission of influenza. Therefore, for planning purposes, separate air conditioning systems for fever clinics are not necessary. Rooms within the fever clinic should be ventilated to the outside.
Operation

- Following triaging and primary assessment, patients will be streamed for further care at home or an inpatient healthcare facility.
- When homecare is indicated, the physician may have to dispense antiviral medication, provide instruction on its use, educate the patient on the need for home isolation (for those who are ill) or quarantine (for contacts).
- Telephone or other follow-up of some patients who are streamed for care at home is needed. The collection and recording of the information required to facilitate this follow-up will be an important function of fever clinics.

Human Resources

The numbers and mix of staff will be dependent on the stage of the pandemic and the demand in each situation. However, each fever clinic will require the following at all stages of the pandemic:

- At least one medical officer to provide overall clinical coordination, advice and expertise specifically where complex patients require assessment and management.
- Nurses who are trained in public health triaging and application of case definitions.
- Clerical support staff to manage administrative functions
- Security staff to maintain order, ensure staff safety and issues with inappropriate demand for antiviral medication.
- Adequate cleaning and maintenance staff

Additionally, note the following:

- Working in PPE is hot and tiring. Staff need frequent breaks when they can remove their PPE, and short shifts.
- Role delineation of staff is important. This may need to be done with color-coded markings or disposable theatre caps, as use of name badges or color-coded uniforms may not be possible with PPE
- All staff require orientation to their role and appropriate training. They also required briefings at the beginning of each shift as case definitions and clinical protocols are likely to change rapidly.
- Additional staff may be required depending on patient case loads.

Material Resources

Minimum requirements for fever clinics include:

- Adequate supplies of PPE according to function and risk of exposure (Annex 3, Table 3).
- Adequate supplies of consumables to perform an assessment and an adequate supply of drugs, including antibiotics and antivirals, for management in accordance with clinical protocols. Other equipment needed include oxygen and oxygen masks, thermometers, sphygmanometers, examination tables and privacy curtains, wheelchairs and patient trolleys, specimen containers, hand hygiene products, cleaning products to clean surfaces (1 in 5
dilution of hospital grade bleach, granular chlorine, 70% Isopropyl, ethyl alcohol 60%), clinical waste and linen bags. Some of the equipment may need to be improvised according to local availability.

- Toilet facilities for patients.
- Telephones, at least one facsimile machine and computer workstations.

The following is a suggested checklist for supplies

<table>
<thead>
<tr>
<th>Medicines</th>
<th>Medical Supplies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antivirals</td>
<td>Needles</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>Syringes</td>
</tr>
<tr>
<td>Antipyretics</td>
<td>Simple Surgical masks</td>
</tr>
<tr>
<td>Antidiarrhoea medication</td>
<td>PPE supplies according to risk of exposure</td>
</tr>
<tr>
<td>Antiemetics</td>
<td>Mortuary Bags</td>
</tr>
<tr>
<td>IV fluid kits for adults and infants (cannulas, lines, IV Fluids: Normal saline, Dextrose Saline, Hartmans, 5% dextrose)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Examination Room Supplies</th>
<th>ICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three chairs</td>
<td>Reception Desk/Counter</td>
</tr>
<tr>
<td>Desk</td>
<td>Computer (Network)</td>
</tr>
<tr>
<td>Examination Trolley</td>
<td>Telephone lines</td>
</tr>
<tr>
<td>Examination Table</td>
<td>Telephones</td>
</tr>
<tr>
<td>Disposable paper sheeting</td>
<td>Fax Machine</td>
</tr>
<tr>
<td>Linen (curtains, pillows, blankets, sheets, pillow slips, towels, linen bags etc)</td>
<td>Pagers</td>
</tr>
<tr>
<td>Thermometers</td>
<td>Designated Mobile Phones</td>
</tr>
<tr>
<td>Tongue depressors</td>
<td>VHF Radios</td>
</tr>
<tr>
<td>Stethoscope</td>
<td>A4 Paper</td>
</tr>
<tr>
<td>Syphgmanometer</td>
<td>Prescription pad</td>
</tr>
<tr>
<td>Specium Containers and Swabs</td>
<td>Patient Notes Folder (manual records)</td>
</tr>
<tr>
<td>Alcohol</td>
<td>Headed note paper</td>
</tr>
<tr>
<td>Swabs</td>
<td>Stationary Supplies : Pens, Pencils, Post-it Notes, etc</td>
</tr>
<tr>
<td>Torch (neurological testing equipment kit is possible)</td>
<td></td>
</tr>
<tr>
<td>Orascope</td>
<td></td>
</tr>
<tr>
<td>Oxygen equipment including spare O2 cylinders</td>
<td></td>
</tr>
<tr>
<td>Oxygen Masks and nasal prongs</td>
<td></td>
</tr>
<tr>
<td>Suction equipment including yanker suckers, suction tubing and receptacles</td>
<td></td>
</tr>
<tr>
<td>Wheelchairs</td>
<td></td>
</tr>
<tr>
<td>ECG Machine</td>
<td></td>
</tr>
<tr>
<td>Waste disposal</td>
<td></td>
</tr>
<tr>
<td>Hand washing facilities with hand wash solution or soap, water, paper towel etc.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cleaning Supplies</th>
<th>Sundries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refuse Bags (plain and clinical waste)</td>
<td>Hand Soap</td>
</tr>
<tr>
<td>Detergent</td>
<td>Toilet Paper</td>
</tr>
<tr>
<td>Hospital Grade Bleach, granular chlorine</td>
<td>Paper Towels</td>
</tr>
<tr>
<td>Alcohol for Cleaning (70% Isopropyl or 60% ethyl alcohol)</td>
<td></td>
</tr>
<tr>
<td>Mops</td>
<td></td>
</tr>
<tr>
<td>Buckets (2 sided, one side for clean water, one for dirty)</td>
<td></td>
</tr>
<tr>
<td>Cleaning clothes, dusters etc</td>
<td></td>
</tr>
<tr>
<td>Toilet sanitizer</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>---</td>
</tr>
<tr>
<td>Air freshener</td>
<td></td>
</tr>
<tr>
<td>Secure Rubbish Bins</td>
<td></td>
</tr>
</tbody>
</table>
ANNEX 7: INFORMATION ON OSELTAMIVIR (TAMIFLU)\textsuperscript{26}

Oseltamivir (Tamiflu) is a prescription medication and should be taken according to medical advice. It is indicated for the treatment of uncomplicated acute illness due to influenza infection in patients 1 year and older who have been symptomatic for no more than 2 days. It is also indicated for prophylaxis of influenza in patients 1 year and older. Oseltamivir (Tamiflu) is not recommended for children up to 1 year of age.

\begin{tabular}{|l|l|l|}
\hline
\textbf{Dosage, Administration, Storage, and Shelf Life} & \\
\hline
Oseltamivir (Tamiflu) is available in capsules – in 30 mg, 45 mg, and 75 mg doses – and a liquid form for pediatric and mature patients who may have difficulty swallowing a capsule. & \\
\hline
\textit{Adult Dosing} & \\

The recommended adult (13 years or older) doses are as follows: & \\

<table>
<thead>
<tr>
<th>Use</th>
<th>Body Weight in lbs (kg)</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment:</td>
<td>≤33 lbs (≤15 kg)</td>
<td>30 mg/twice daily/5 days</td>
</tr>
<tr>
<td></td>
<td>&gt;33 lbs to 51 lbs (&gt;15 kg to 23 kg)</td>
<td>45 mg/twice daily/5 days</td>
</tr>
<tr>
<td></td>
<td>&gt;51 lbs to 88 lbs (&gt;23 kg to 40 kg)</td>
<td>60 mg/twice daily/5 days</td>
</tr>
<tr>
<td></td>
<td>&gt;88 lbs (&gt;40 kg)</td>
<td>75 mg/twice daily/5 days</td>
</tr>
<tr>
<td>Post-exposure Prophylaxis:</td>
<td>≤33 lbs (≤15 kg)</td>
<td>30 mg/once daily/10 days</td>
</tr>
<tr>
<td></td>
<td>&gt;33 lbs to 51 lbs (&gt;15 kg to 23 kg)</td>
<td>45 mg/once daily/10 days</td>
</tr>
<tr>
<td></td>
<td>&gt;51 lbs to 88 lbs (&gt;23 kg to 40 kg)</td>
<td>60 mg/once daily/10 days</td>
</tr>
</tbody>
</table>
| Renal Impairment Dosing* & \\

(for patients with creatinine clearance between 10 mL/min and 30 mL/min) & \\

<table>
<thead>
<tr>
<th>Use</th>
<th>Body Weight in lbs (kg)</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment:</td>
<td>75 mg once daily for 5 days</td>
<td></td>
</tr>
<tr>
<td>Prophylaxis:</td>
<td>75 mg every other day or 30 mg oral suspension once daily \textsuperscript{1}</td>
<td></td>
</tr>
</tbody>
</table>
| Pediatric Dosing & \\

The recommended pediatric (1-12 years) weight adjusted doses are as follows: & \\

<table>
<thead>
<tr>
<th>Use</th>
<th>Body Weight in lbs (kg)</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment:</td>
<td>≤33 lbs (≤15 kg)</td>
<td>30 mg/twice daily/5 days</td>
</tr>
<tr>
<td></td>
<td>&gt;33 lbs to 51 lbs (&gt;15 kg to 23 kg)</td>
<td>45 mg/twice daily/5 days</td>
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<td></td>
<td>&gt;51 lbs to 88 lbs (&gt;23 kg to 40 kg)</td>
<td>60 mg/twice daily/5 days</td>
</tr>
<tr>
<td></td>
<td>&gt;88 lbs (&gt;40 kg)</td>
<td>75 mg/twice daily/5 days</td>
</tr>
<tr>
<td>Post-exposure Prophylaxis:</td>
<td>≤33 lbs (≤15 kg)</td>
<td>30 mg/once daily/10 days</td>
</tr>
<tr>
<td></td>
<td>&gt;33 lbs to 51 lbs (&gt;15 kg to 23 kg)</td>
<td>45 mg/once daily/10 days</td>
</tr>
<tr>
<td></td>
<td>&gt;51 lbs to 88 lbs (&gt;23 kg to 40 kg)</td>
<td>60 mg/once daily/10 days</td>
</tr>
</tbody>
</table>

\*No recommended dosing regimens are available for patients undergoing routine hemodialysis and continuous peritoneal dialysis treatment with end-stage renal disease.

\textsuperscript{26} Based on prescribing information from Roche, the manufacturer of Tamiflu. Available at http://www.rocheusa.com/products/tamiflu/pi.pdf and www.tamiflu.com
<table>
<thead>
<tr>
<th>Use</th>
<th>Body Weight in lbs (kg)</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;88 lbs (&gt;40 kg)</td>
<td>75 mg/once daily/10 days</td>
<td></td>
</tr>
</tbody>
</table>

An oral dosing dispenser with 30 mg, 45 mg, and 60 mg graduations is provided with the oral suspension; the 75 mg dose can be measured using a combination of 30 mg and 45 mg. It is recommended that patients use this dispenser. In the event that the dispenser provided is lost or damaged, another dosing syringe or other device may be used to deliver the following volumes: 2.5 mL (½ tsp) for children ≤15kg, 3.8 mL (¾ tsp) for >15 to 23 kg, 5.0 mL (1 tsp) for >23 to 40 kg, and 6.2 mL (1¼ tsp) for >40 kg.

**Prophylactic Use**

The evidence of effectiveness of oseltamivir (Tamiflu) for prophylaxis of H5N1 disease is based on the results of trials of preventing ordinary influenza in healthy and elderly patients and children.

In general, when used as prophylaxis, oseltamivir (Tamiflu) may either be given to persons who have had close contact (<1 meter or 3 feet) to an infected individual. For people with repeated or prolonged exposure such as health care workers or personnel involved in bird culls, a continuous course of up to 6 weeks is generally well-tolerated. Ideally, the prophylaxis dose should be started immediately or as soon as possible (< 48 hours), after exposure to the AI A (H5N1) infected patient.

Specific recommendations on the antiviral prophylaxis policy will be provided to duty stations as the pandemic situation evolves.

**Storage and shelf life**

Prescription medications, such as oseltamivir (Tamiflu), should always be kept in a secure facility and this should be taken into consideration by the UN administration at each duty station and, where applicable, by the UN physicians.

For optimal effectiveness it is advised that Tamiflu (both capsules and dry powder for paediatric suspension), should be stored in a dry place, out of direct sunlight, and at temperatures below 25°C (allowing for excursions up to 30°C). In conditions where the temperature may exceed 25°C, Tamiflu may also be stored in a refrigerator at 2°C–8°C. Do not allow the medications to freeze, and keep packets in a sealed container to avoid moisture damage.

The powder, when reconstituted into an oral suspension for children, should be refrigerated between 2°C–8°C and should also not be frozen. Reconstituted suspension can be stored for 10 days after which the unused portion should be discarded.

Note that the Tamiflu Paediatric Dry Suspension has a manufacturer designated shelf-life of two years from the time of manufacture. Tamiflu capsules normally have a shelf-life of 5 years.
Extensive recent testing done on national stockpiles in the USA by the Food and Drug Administration (FDA), have shown that oseltamivir is a relatively stable medication when stored in the correct conditions as above, and decisions have already been taken to extend the shelf-life of initial US government stocks by a further two years.

The UN Medical Directors have closely evaluated the procedures followed by the FDA, and have decided that the expiry date of UN held stockpiles of oseltamivir may also be extended by two years, provided that the storage conditions of the stockpile are known to have met the manufacturers recommendations as described above.

If storage conditions have not met the above conditions, the manufacturer is able to perform tests to determine the efficacy of the medication, and if results are satisfactory, shelf life could also be extended. If this process is followed, the manufacturer recommends that 6 packets per batch should be tested (at an approximate cost of $2,400 at time of writing). All testing enquiries should be directed to:

International Product Manager (at time of writing, Ms Isabel Burckhardt, isabel.burckhardt@roche.com)
F. Hoffmann-La Roche Ltd
PBH – Bld 74/30 107
4070 Basel
Switzerland

Each stockpile holder will need to evaluate their own stockpile conditions, and financial situation, and determine whether shelf-life renewal may be more cost beneficial than simple stock replacement. At current prices, stockpile holders with more than 96 packets of oseltamivir in stock may find it economical to conduct testing, and extend shelf life if results are satisfactory.

### Precautions

Efficacy of treatment in patients with chronic cardiac and/or respiratory disease and in immuno-compromised patients has not been established.

For patients with kidney disease and creatinine clearance between 10 mL/min and 30 mL/min, the renal impairment dosing is required.

Rare but serious skin reactions and allergic reactions have been reported. Patients should stop taking Tamiflu if they experience any of these reactions

Some instances of self–injury and delirium with the use of Tamiflu in patients with the flu have been reported

- The reports were primarily among children (mostly in Japan)
- The relationship of these reported events to Tamiflu is not known.

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Further information regarding precautions can be obtained from the product information sheet at [http://www.rocheusa.com/products/tamiflu/pi.pdf](http://www.rocheusa.com/products/tamiflu/pi.pdf)
• Pediatric patients with the flu should be closely monitored for signs of abnormal behavior throughout the treatment period

The most common side effects of Tamiflu are mild to moderate nausea and vomiting. Tamiflu is generally well tolerated.

## Contraindications

Tamiflu is contraindicated in patients who are allergic to oseltamivir phosphate or any other ingredients in Tamiflu.

### Pregnancy

Tamiflu is normally not recommended for use during pregnancy or nursing, as the effects on the unborn child or nursing infant are unknown.

### Drug Interactions

The concurrent use of Tamiflu and live attenuated influenza vaccine (LAIV) intranasal has not been evaluated. However, due to the possibility for interference between these products, LAIV should not be given within 2 weeks before or 48 hours after taking Tamiflu, unless it is deemed appropriate by your health care provider. Trivalent inactivated influenza vaccine can be administered at any time relative to use of TAMIFLU.

## Dosing Instructions for Patients

Please follow instructions carefully to ensure proper dosing of the oral suspension.

1. Shake closed bottle well for about 5 seconds before each use.
2. Remove child-resistant cap.
3. Before inserting the tip of the oral dispenser into bottle adapter, push the plunger completely down toward the tip of the oral dispenser. Insert tip firmly into opening of the bottle adapter.
4. Turn the entire unit (bottle and oral dispenser) upside down.
5. Pull the plunger out slowly until the desired amount of medication is withdrawn into the oral dispenser. The 75 mg dose is obtained by filling the dispenser twice, once to the 30 mg graduation, and a second fill to the 45 mg graduation.
6. Turn the entire unit right side up and remove the oral dispenser slowly from the bottle.
7. Dispense directly into mouth. Do not mix with any liquid prior to dispensing.
8. Close bottle with child-resistant cap after each use.
9. Disassemble oral dispenser, rinse under running tap water and air dry prior to next use.

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28 Roche, Patient Information Tamiflu (Oseltamivir phosphate), Roche Pharmaceuticals, New Jersey, USA, December 2005.
In November 2006, the FDA approved the addition of directions for the emergency compounding of a Tamiflu oral suspension from Tamiflu Capsules (15 mg/mL) to the label. These directions are provided for use only during emergency situations. They are not intended to be used if the FDA-approved, commercially manufactured Tamiflu Oral Suspension is readily available from wholesalers or the manufacturer.

Compounding an oral suspension with this procedure will provide one patient with enough medication for a 5-day course of treatment (twice-daily administration) or a 10-day course of prophylaxis (once-daily administration).

Commercially manufactured Tamiflu Oral Suspension (12 mg/mL) is the preferred product for pediatric and adult patients who have difficulty swallowing capsules or where lower doses are needed. In the event that the commercially manufactured Tamiflu Oral Suspension is not available, the pharmacist may compound a suspension (15 mg/mL) from Tamiflu (oseltamivir phosphate) Capsules 75 mg using either of two vehicles: Cherry Syrup (Humco®)* or Ora-Sweet® SF (sugar-free) (Paddock Laboratories). † Other vehicles have not been studied. This compounded suspension should not be used for convenience or when the FDA-approved Tamiflu Oral Suspension is commercially available.

**Compounding Procedure**

First, calculate the Total Volume of oral suspension needed to be compounded and dispensed for each patient. The Total Volume required is determined by the weight of each patient. Refer to Table 7.

**Table 7: Volume of Oral Suspension (15 mg/mL) Needed to be Compounded Based Upon the Patient’s Weight**

<table>
<thead>
<tr>
<th>Body Weight (kg)</th>
<th>Body Weight (lbs)</th>
<th>Total Volume to Compound per patient (mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 kg or less</td>
<td>33 lbs or less</td>
<td>30 mL</td>
</tr>
<tr>
<td>16 to 23 kg</td>
<td>34 to 51 lbs</td>
<td>40 mL</td>
</tr>
<tr>
<td>24 to 40 kg</td>
<td>52 to 88 lbs</td>
<td>50 mL</td>
</tr>
<tr>
<td>41 kg or more</td>
<td>89 lbs or more</td>
<td>60 mL</td>
</tr>
</tbody>
</table>

Next, determine the number of capsules and the amount of vehicle (Cherry Syrup or Ora-Sweet SF) that are needed to prepare the Total Volume (calculated from Table 7: 30 mL, 40 mL, 50 mL, or 60 mL) of compounded oral suspension (15 mg/mL). Refer to Table 8.

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29 Roche, “Directions for the Emergency Compounding of an Oral Suspension from TAMIFLU Capsules (Final Concentration = 15 mg/mL)”. Available at http://www.tamiflu.com/hcp/dosing/extprep.aspx
Table 8: Number of Tamiflu 75 mg Capsules and Amount of Vehicle (Cherry Syrup OR Ora-Sweet SF) Needed to Prepare the Total Volume of a Compounded Oral Suspension (15 mg/mL)

<table>
<thead>
<tr>
<th>Total Volume of Compounded Oral Suspension needed to be Prepared</th>
<th>30 mL</th>
<th>40 mL</th>
<th>50 mL</th>
<th>60 mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required number of Tamiflu 75 mg Capsules</td>
<td>6 capsules (450 mg oseltamivir)</td>
<td>8 capsules (600 mg oseltamivir)</td>
<td>10 capsules (750 mg oseltamivir)</td>
<td>12 capsules (900 mg oseltamivir)</td>
</tr>
<tr>
<td>Required volume of vehicle</td>
<td>29 mL</td>
<td>38.5 mL</td>
<td>48 mL</td>
<td>57 mL</td>
</tr>
</tbody>
</table>

Then, follow the procedure below for compounding the oral suspension (15 mg/mL) from Tamiflu Capsules 75 mg:

1. Carefully separate the capsule body and cap and transfer the contents of the required number of Tamiflu75 mg Capsules into a clean mortar.
2. Triturate the granules to a fine powder.
3. Add one-third (1/3) of the specified amount of vehicle to the mortar and triturate the powder until a uniform suspension is achieved.
4. Transfer the suspension to an amber glass or amber polyethyleneterephthalate (PET) bottle. A funnel may be used to eliminate any spillage.
5. Add another one-third (1/3) of the vehicle to the mortar, rinse the pestle and mortar by a triturating motion and transfer the contents into the bottle.
6. Repeat the rinsing (Step 5) with the remainder of the vehicle.
7. Close the bottle using a child-resistant cap.
8. Shake well to completely dissolve the active drug and to insure homogeneous distribution of the dissolved drug in the resulting suspension. (Note: The active compound, oseltamivir phosphate, readily dissolves in the specified vehicles. The suspension is caused by some of the inert ingredients of Tamiflu Capsules which are insoluble in these vehicles.)
9. Put an ancillary label on the bottle indicating "Shake Gently Before Use". This compounded suspension should be gently shaken prior to administration to minimize the tendency for air entrapment, particularly with the Ora-Sweet SF preparation. The need to shake the compounded oral suspension gently prior to administration should be reviewed with the parent or guardian when the suspension is dispensed.
10. Instruct the parent or guardian that any remaining material following completion of therapy must be discarded by either affixing an ancillary label to the bottle or adding a statement to the pharmacy label instructions.
11. Place an appropriate expiration date label according to storage condition (see below).
STORAGE OF THE PHARMACY-COMPOUNDED SUSPENSION:

| Refrigeration: Stable for 5 weeks (35 days) when stored in a refrigerator at 2°C to 8°C (36°F to 46°F). Room Temperature: Stable for five days (5 days) when stored at room temperature, 25°C (77°F). |

12. Place a pharmacy label on the bottle that includes the patient’s name, dosing instructions, and drug name and any other required information to be in compliance with all State and Federal Pharmacy Regulations. Refer to Table 9 for the proper dosing instructions.

Note: This compounding procedure results in a 15 mg/mL suspension, which is different from the commercially available Tamiflu for Oral Suspension, which has a concentration of 12 mg/mL.

Table 9: Dosing Chart for Pharmacy-Compounded Suspension from Tamiflu Capsules 75 mg

<table>
<thead>
<tr>
<th>Body Weight (kg)</th>
<th>Body Weight (lbs)</th>
<th>Dose (mg)</th>
<th>Volume per Dose 15 mg/mL</th>
<th>Treatment Dose (for 5 days)</th>
<th>Prophylaxis Dose (for 10 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 kg or less</td>
<td>33 lbs or less</td>
<td>30 mg</td>
<td>2 mL</td>
<td>2 mL two times a day</td>
<td>2 mL once daily</td>
</tr>
<tr>
<td>16 to 23 kg</td>
<td>34 to 51 lbs</td>
<td>45 mg</td>
<td>3 mL</td>
<td>3 mL two times a day</td>
<td>3 mL once daily</td>
</tr>
<tr>
<td>24 to 40 kg</td>
<td>52 to 88 lbs</td>
<td>60 mg</td>
<td>4 mL</td>
<td>4 mL two times a day</td>
<td>4 mL once daily</td>
</tr>
<tr>
<td>41 kg or more</td>
<td>89 lbs or more</td>
<td>75 mg</td>
<td>5 mL</td>
<td>5 mL two times a day</td>
<td>5 mL once daily</td>
</tr>
</tbody>
</table>

Note: 1 teaspoon = 5 mL

Consider dispensing the suspension with a graduated oral syringe for measuring small amounts of suspension. If possible, mark or highlight the graduation corresponding to the appropriate dose (2 mL, 3 mL, 4 mL, or 5 mL) on the oral syringe for each patient. The dosing device dispensed with the commercially available Tamiflu for Oral Suspension should NOT be used with the compounded suspension since they have different concentrations.
ANNEX 8: PROCUREMENT AND STORAGE OF MEDICAL SUPPLIES

It is envisaged that the procurement of supplies will be done as part of each UNCT’s preparedness plan, with a designated organisation taking the lead to ensure that adequate supplies are procured and stored according to current guidance. The cost of procurement should be apportioned amongst all participating organisations accordingly.

If an agency is unable to participate in the joint procurement process, it is still envisaged, where possible, that their supplies would be stored and placed under the same responsibility as the rest of the UNCT supplies.

Stock control procedures should be put in place and carried out on a regular basis, for example, each month. Any loss due to damage etc needs to be accounted for on the stock control form and be witnessed by two persons. This process will also assist in identifying in good time, supplies that are due to expire within the coming months and allow for them to be donated prior to expiration date. Replacement of supplies should be carried out as part of the UNCT process and the costs of doing so apportioned to the agencies accordingly.

In cases where it has not been possible to donate supplies prior to expiry, and where an extension of shelf life has not been implemented, WHO’s guidelines\(^{30}\) on the safe disposal of unusable pharmaceuticals should be strictly followed.

**Table 4. Medical Supplies To Be Procured for a Pandemic**

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaccines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seasonal human flu vaccines(^{31})</td>
<td>For staff and dependants who are at high risk for complications from influenza or who will be traveling internationally. If supplies allow, it can also be made available to all other UN personnel and their dependents.</td>
<td>Single dose pre-filled syringes should be procured rather than use of multi-dose vials</td>
</tr>
<tr>
<td>Pandemic strain vaccines</td>
<td>For Proposed Priority Groups for Pandemic Vaccine (Para. 75)</td>
<td>Not expected to be available for at least 6 months after the pandemic virus has been isolated</td>
</tr>
<tr>
<td>Antivirals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment course:</td>
<td>A 5-day treatment course (75 mg capsules twice a day(^{32}) for adults)</td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oseltamivir (Tamiflu)</td>
<td>5 day treatment course for 25% of staff and their dependents. For purposes of treatment and prophylaxis, “staff and their dependants” denotes all staff members and their recognized dependents and all other individuals who have a direct contractual relationship with the organization and their recognized dependents.</td>
<td>For treatment purposes.</td>
</tr>
<tr>
<td>Prophylactic Course: Oseltamivir (Tamiflu)</td>
<td>A 6-week course (75 mg once a day for adults) primarily for staff in Risk Categories 1, 2 and 3 of Table 3 of Annex 3. Specific recommendations on the use of antivirals as prophylaxis will be provided as the pandemic situation changes.</td>
<td></td>
</tr>
</tbody>
</table>

### Antibiotics for Secondary Bacterial Pneumonia

<table>
<thead>
<tr>
<th>Antibiotics</th>
<th>Quantity</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amoxicillin (500 mg) + Clavulanic Acid (125 mg)</td>
<td>1 course of 30 tablets for 7.5% of staff and their dependents. Effective against S. pneumonia</td>
<td></td>
</tr>
<tr>
<td>Ciprofloxacin (500 mg)</td>
<td>1 course of 20 tablets for 2.5% of staff and their dependents. Effective against secondary bacterial pneumonia not responding to Augmentin – good for H. Influenza but may not be good for S. pneumonia</td>
<td></td>
</tr>
<tr>
<td>Azithromycin (500 mg)</td>
<td>1 course of 5 tablets for 2.5% of staff and their dependents. Effective against Staph and S. pneumonia. Useful for those allergic to or not responding to amoxicillin.</td>
<td></td>
</tr>
</tbody>
</table>

### Personal Protective Equipment

| PPE (Items in Table 5) for Staff in Risk Category 1 | Quantities for a 6-week supply per person should be procured. | Offices should identify and quantify the number of staff who may fall into Risk Category 1 (Annex 3, Table 3) |

---

32 This is the adult (13 years and older) dosing. For information on pediatric (1-12 years) dosing, please refer to Annex 7.
33 For purposes of treatment and prophylaxis, “staff and their dependants” denotes all staff members and their recognized dependents and all other individuals who have a direct contractual relationship with the organization and their recognized dependents.
34 This is the adult (13 years and older) dosing. For information on pediatric (1-12 years) dosing, please refer to Annex 7.
### PPE (Items in Table 6) for Staff in Risk Category 2

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity for 6-week supply per person should be procured</th>
<th>Offices should identify and quantify the number of staff who may fall into Risk Category 2 (Annex 3, Table 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple Surgical masks</td>
<td>84 masks per staff and dependents (2 mask changes per day x 6 weeks)</td>
<td>3 ply</td>
</tr>
</tbody>
</table>

### Other Supplies

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity for 6-week supply per person should be procured</th>
<th>Offices should identify and quantify the number of staff who may fall into Risk Category 2 (Annex 3, Table 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syringes and needles</td>
<td>One set of syringe and needle per staff and dependent</td>
<td>Procurement of an extra set of syringe and needle is to ensure injection safety, in case injectibles have to be used at the local facilities. This stockpile is not specific for pandemic.</td>
</tr>
<tr>
<td>Mortuary bags</td>
<td>3% of international staff population</td>
<td>For purpose of repatriation of bodies of deceased international staff and family members. Should be procured only if local supplies unavailable or insufficient.</td>
</tr>
</tbody>
</table>

### Table 5. PPE Items To be Procured for Staff in Risk Category 1

This is an average supply that has been worked out for staff in Risk Category 1 (Annex 3, Table 3). Quantities for a 6-week supply per person in this Risk Category should be procured.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Quantity Per day</th>
<th>Quantity for 6 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Protective goggles, polycarbonate, (reusable)</td>
<td>Each</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Face mask grade P2 (or N95), disposable</td>
<td>BX/20</td>
<td>2</td>
<td>84</td>
</tr>
<tr>
<td>3</td>
<td>Surgical masks</td>
<td>EACH</td>
<td>4</td>
<td>168</td>
</tr>
<tr>
<td>4</td>
<td>Single use gloves, small, anatomically shaped, latex, non-sterile</td>
<td>PAIR</td>
<td>10</td>
<td>420</td>
</tr>
<tr>
<td>5</td>
<td>Single use gloves, medium, anatomically shaped, latex, non-sterile</td>
<td>PAIR</td>
<td>10</td>
<td>420</td>
</tr>
</tbody>
</table>

---

This PPE kit is not adequate for veterinarian purposes including for culling.

Health care workers who manage patients clinically and have close contact (<1 meter or 3 feet) with known/suspected pandemic patients or their infectious material.
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Quantity Per day</th>
<th>Quantity for 6 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Single use gloves, large, anatomically shaped, latex, non-sterile,</td>
<td>PAIR</td>
<td>10</td>
<td>420</td>
</tr>
<tr>
<td>7</td>
<td>Single use plastic apron,</td>
<td>EACH</td>
<td>2</td>
<td>84</td>
</tr>
<tr>
<td>8</td>
<td>Rubber Gloves (reusable for environmental cleaning)</td>
<td>PAIR</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>9</td>
<td>Coverall (with integrated hair and shoe covers) or gown, hair cover and shoe covers, disposable, non-sterile</td>
<td>EACH</td>
<td>2</td>
<td>84</td>
</tr>
<tr>
<td>10</td>
<td>Alcohol rub disinfectant – Dangerous goods – UN code 1987, Class 3</td>
<td>bottle/1000ml</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Disposable bag for bio-hazardous waste – 1 bag per day for 6 weeks.</td>
<td>EACH</td>
<td>1</td>
<td>42 bags</td>
</tr>
<tr>
<td>12</td>
<td>Disposable bag for bio hazardous waste, small, with “Bio-Hazard” print, polypropylene – 1 bag per day for 6 weeks</td>
<td>EACH</td>
<td>1</td>
<td>42 bags</td>
</tr>
</tbody>
</table>

**Table 6. PPE Items To Be Procured for Staff in Risk Category 2**

This is an average supply that has been worked out for staff in Risk Category 2 (Annex 3, Table 3). Quantities for a 6-week supply per person in this Risk Category should be procured.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Quantity Per day</th>
<th>Quantity for 6 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Surgical masks</td>
<td>EACH</td>
<td>4</td>
<td>168</td>
</tr>
<tr>
<td>2</td>
<td>Single use gloves, small, anatomically shaped, latex, non-sterile</td>
<td>PAIR</td>
<td>10</td>
<td>420</td>
</tr>
<tr>
<td>3</td>
<td>Single use gloves, medium, anatomically shaped, latex, non-sterile</td>
<td>PAIR</td>
<td>10</td>
<td>420</td>
</tr>
<tr>
<td>4</td>
<td>Single use gloves, large, anatomically shaped, latex, non-sterile,</td>
<td>PAIR</td>
<td>10</td>
<td>420</td>
</tr>
<tr>
<td>5</td>
<td>Single use plastic apron,</td>
<td>EACH</td>
<td>2</td>
<td>84</td>
</tr>
<tr>
<td>6</td>
<td>Rubber Gloves (reusable for environmental cleaning)</td>
<td>PAIR</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

37 This should be procured locally to avoid problems with shipping of dangerous goods. If it cannot be supplied locally, order separately. Alternatively, chlorhexidine gluconate 4% solution in bottles of 250 ml each (that means 4 bottles per kit to equal the liter requirement per kit), could be procured.

38 Non-health care worker staff who have close contact (<1 meter) with known/suspected pandemic patients or their infectious material
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Quantity Per day</th>
<th>Quantity for 6 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Cleaning</td>
<td>EACH</td>
<td>2</td>
<td>84</td>
</tr>
<tr>
<td>8</td>
<td>Coverall (with integrated hair and shoe covers) or gown, hair cover and shoe covers, disposable, non sterile</td>
<td>EACH</td>
<td>2</td>
<td>84</td>
</tr>
<tr>
<td>9</td>
<td>Alcohol rub disinfectant[^39] – Dangerous goods – UN code 1987, Class 3</td>
<td>bottle/1000ml</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Disposable bag for bio-hazardous waste – 1 bag per day for 6 weeks.</td>
<td>EACH</td>
<td>1</td>
<td>42 bags</td>
</tr>
<tr>
<td>11</td>
<td>Disposable bag for bio hazardous waste, small, with “Bio-Hazard” print, polypropylene – 1 bag per day for 6 weeks</td>
<td>EACH</td>
<td>1</td>
<td>42 bags</td>
</tr>
</tbody>
</table>

**Storage of Medical Supplies[^40]**

**Maintenance of Storage Facilities**

Basic points to consider:

- Monitor storage conditions.
- Ensure that aisles are clear.
- Ensure adequate ventilation and cooling.
- Ensure that products are protected from direct sunlight.
- Monitor store security and safety.
- Check the store roof for leaks, especially during the rainy season and during or after a storm.
- Monitor product quality (visually inspect commodities and check expiration dates).
- Ensure that products are stacked correctly (e.g. check that lower cartons are not being crushed).
- Update stock records and maintain files.
- Separate stocks soon to expire and reallocate/donate prior to expiry.
- Check for signs of rodent and insect infestations
- Inspect the storage structure for damage, including the walls, floors, roof, windows, and doors.
- Visually inspect fire extinguishers to ensure that pressures are maintained and extinguishers are ready for use. Inspect and test smoke alarms.

[^39]: This should be procured locally to avoid problems with shipping of dangerous goods. If it cannot be supplied locally, order separately. Alternatively, chlorhexidine gluconate 4% solution in bottles of 250 ml each (that means 4 bottles per kit to equal the liter requirement per kit), could be procured.

When receiving medical supplies:

- Prior to receipt of any supplies, calculate the required storage space and ensure there is sufficient storage space.
- Prepare and clean the areas used for receiving and storing the products.
- Record the new supplies in the inventory system updating the totals.

Storage principles

In order to protect your supplies from moisture and to ensure their safe handling keep supplies:

- Use pallets
- At least 10 cm off the floor
- At least 30 cm away from the walls and other stacks
- Read manufacturer's instructions as the stacking of equipment will depend on the item. In stacks of no more than 1.8m high in general (consider the height of your employees). Avoid crushing products stored in bulk. Heavier or fragile items should be placed in smaller stacks. Bind sharp edges or corners in the store with tape. Most important, ensure that nothing in the store can fall and injure members of the staff.
- Arrange cartons so that identification labels, expiry dates, and manufacturing dates are visible. If this is not possible, write the product name and expiry date clearly on the visible side
- Place items that will expire first in front of others with a longer expiry date to assist stock rotation. Supplies, prior to their expiry dates, should be sent to facilities to be utilised before they expire and then replaced accordingly.

Itemised Stock Lists

Each medical storage facility should maintain a stock list, which includes all of the items stored within that facility including a description of each item such as:

- Product name (including its form e.g. capsule, tablet, liquid suspension, etc. and strength)
- Expiry date
- Batch number
- Stock on hand/beginning stock balance
- Additions to stock
- Issues/losses/adjustments
- Closing balance

Cleaning

Keep the storage facility clean. Sweep and mop or scrub the floors of the storeroom regularly. Wipe down the shelves and products to remove dust and dirt. Regularly inspect and clean the outside premises of the storage facility, especially areas where garbage is stored. Check for any rodent burrows, and be sure that garbage and other waste are stored in covered containers.
Storage Conditions

Medications such as oseltamivir capsules, Ciprofloxacin capsules, Azithromycin tablets and Augmentin tablets should be stored in a dry, cool environment at 25°C or less. Keep out of direct sunlight and away from heat sources.

- Regularly monitor the temperature of the different areas within the storeroom.
- Keep thermometers in various places for monitoring.
- Keep the storeroom well ventilated. For better ventilation, store boxes on pallets and leave room between rows of stacked boxes.
- Keep direct sunlight out of the storeroom.

Some of the medications that are recommended for stockpiling in preparation for a possible pandemic may have stability problems under tropical conditions for example: oseltamivir, amoxicillin tablets, paracetamol liquid and some reconstituted antibiotics, it is important therefore to read the storage instructions supplied by the manufacturers.

Guidelines for the storage of essential medicines and other health commodities can be found at:


Specific details regarding the storage and shelf life of oseltamivir (Tamiflu) can be found in Annex 7.

The following principles will help to protect your medical supplies from loss during storage at the designated facility:

- Limit access to designated staff only.
- Limit the number of keys made for the facility and keep a list of people who have the keys.
- Secure all locks and doors after each entry to the facility; do not leave it unlocked when no one is inside.
- Provide independent stock count/inventory control.

When medications are approaching their expiry dates, and it is clear that they will not be used before that time, attempts should be made to donate the medications to facilities where they may be beneficially used before expiration. Possibilities will vary between duty stations.