

# Framework for health care facility preparedness for pandemic response

## Introduction

In view of the current global evolution of the influenza A(H1N1) outbreaks, health facility preparedness<sup>1</sup> is crucial for countries to meet the potentially excessive clinical demand when faced with an epidemic wave. This document aims to provide a practical framework to facilitate the pandemic preparedness of health care facilities.

As health facilities vary in type, function, size and, most importantly, the context in which they operate, it is impractical to provide a set of universally applicable recommendations for the essential components of health facility pandemic preparedness plans. A tailored preparedness plan should be developed by consultative discussions involving all key players inside and outside the facility. The preparedness plan should also be relevant to the overall national health structure and consistent with the national preparedness plan.

## Framework

The following framework presents nine key components, each with several sub-topics that require thorough consideration during the preparedness planning process. The statements that appear in each sub-topic should be read as policy options, rather than uniformly recommended actions. References are given for more detailed explanation and concrete recommendations for each component.

## Target audience

The framework is primarily targeted at hospital managers to facilitate the pandemic response preparation of their facilities. However, a stand-alone facility preparedness plan cannot be fully functional unless it is well coordinated and supported by the relevant health authorities.

Central or local health authorities may utilize this document as a basis from which to develop more specific guidance tailored to their local context. Such guidance is vital for the systematic preparedness of multiple facilities to standardized levels. An additional implementation guide is attached to suggest basic steps for such implementation.

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<sup>1</sup> Different approaches and methodologies have been developed and promoted in different countries for hospital management in critical situations in general. Some have originated from the 'Incident Command System', while others have stemmed from disaster management and mitigation initiatives. Simple pandemic plans have also been prepared. The presented framework is not based on any specific platform. Rather, it has been developed to capture essential elements common to different systems. If a country has developed its national framework for health facility preparedness based on a specific system, then it is highly recommended that the national pandemic preparedness plan should be based on the same specific system, with particular emphasis on infection control components.

## **Implementation guide for central and local health authorities**

The following steps are suggested as an example for the systematic introduction of health care facility preparedness planning for pandemic influenza. To respond to the current influenza A(H1N1) situation and to prepare for future outbreak or pandemic scenarios, central and local health authorities are required to take the necessary steps to improve the response capacities of their health care facilities as soon as possible.

### **1. Situation assessment**

- Map health care facilities by level and function.
- Assess existing health care facility response plans (hospital emergency plan, disaster response plan, pandemic response plan, etc.).

### **2. Clarification of national policies, guidance and referral system**

Policies and guidance in the following areas will facilitate effective local-level preparedness planning:

- Clarify national guidance on hospital emergency preparedness and response.
- Clarify pandemic-specific referral network for health facilities (if different from the regular referral network).
- Facilitate establishing a coordination mechanism involving all relevant partners and stakeholders.
- Share supply distribution plan for infection control and clinical management.
- Provide guidance on triage procedure and protocol.
- Develop and disseminate clinical management guidelines.
- Explore bed expansion strategies both in private and public sectors.
- Promote mobilization of second-line human resources for hospital surge capacity (e.g. memorandum of understanding with Red Cross Society).
- Consider providing social support to hospital staff (e.g. child day care, monetary compensation, insurance).
- Ensure hospital security by coordinating with relevant authority (e.g. police).

### **3. Local adaptation of the preparedness framework**

- Incorporate all available national policies and guidance, and contextualize the preparedness framework with concrete recommendations for health care facilities.

#### **4. Establish support teams for information dissemination and facilitation**

- Establish support teams with appropriate knowledge and familiarity of health care facility preparedness.
- Dispatch support teams to health care facilities to discuss and facilitate preparedness planning (consultation for individual facility and/or facilitation of workshops for multiple facilities).

#### **5. Planning at individual facilities**

- Advise health care facility managers on the option to establish preparedness planning committee or task force.
- Organize preparedness planning workshop involving all relevant stakeholders and ensuring community participation.

#### **6. Compilation of the preparedness plans and quality check**

- Compile preparedness plans at local and central levels for technical and operational review and for overall assessment of preparedness level.
- Integrate health facility preparedness plans as part of overall pandemic preparedness plan for local and central health authorities.
- Identify capacity development needs through a review process, and feed them into a human resource development plan.

#### **7. Monitoring and supervision by the support teams**

- Conduct supervisory visits to provide feedback on the plan and support necessary revisions on site.

## Framework for Health Facility Management Preparedness Plan

1. Organization and Coordination	
<u>command body</u>	Establish emergency management body (Hospital Emergency Committee, Hospital Incident Command System, etc) with clear organization structure and reporting line, according to the hospital emergency plan (if exists) or relevant national guidance/ directives.
<u>emergency plan</u>	Develop and update the Health Facility Emergency Plan (including operational, human resources, financial and supply plans) and its activation process (triggers and authority)
<u>essential services</u>	Ensure the preservation of essential services (electricity, water supply, communications, medical and non-medical waste collections, funerary, etc) by discussing with providers and local authorities
<u>functional teams</u>	Establishing functional teams with clear terms of references. Areas to be covered include: - Infection control - Triage - Care provision (clinical management) - Logistics and general services - Administration / security - Psychological support - Community coordination
<u>communication</u>	Assign and train a focal person/team to handle public/media relations who will be a single external communication channel. Develop effective information sharing mechanisms among core management members, line managers and all facility staff. Maintain effective communication with local and health authorities.
<u>referral network</u>	Clarify the referral network of health facilities at the national and sub-national levels (referral, counter-referral, consultation) including medical emergency services. Those hospitals serving as a regional hub may consider pro-active support to sub-ordinate hospitals under the coordination with local health authority
<u>external coordination</u>	Establish/ participate in the community level coordination mechanism on pandemic preparedness and response ( <u>preferably led by local government or health authority</u> , participated by relevant public sector representatives, community leaders, NGOs, local Red Cross Societies, community care providers and religious leaders)
Key actions	<input type="checkbox"/> Health Facility Emergency Plan or similar exists <input type="checkbox"/> Emergency hospital management body defined <input type="checkbox"/> Activation process (triggers and authority) clarified in the plan <input type="checkbox"/> Critical/core functional teams assigned (e.g. Infection control, Triage)
2. Infection Control	
<u>infection control team</u>	Establish/activate Infection Control Team/ Committee and consider incorporating peer monitoring system for the effective implementation and improved compliance to the infection control protocols.
<u>precautions compliance</u>	Intensify compliance with standard and droplet precautions and provide training on the basic infection control principles, bio-safety, respiratory & hand hygiene and the use of PPE.
	<b>(following the activation of the plan)</b> Strictly monitor the compliance with standard and droplet precautions and the proper use of PPE. Identify and mark isolation areas, routes and zones where care is being provided to cases.
<u>infection control supplies</u>	Estimate the needs for infection control supplies (PPE, hand hygiene supplies, disinfectant) and plan necessary pre-positioning. Establish and disseminate criteria for use and distribution of PPE.
<u>patient/ visitor awareness</u>	Prepare and post visual education materials in appropriate languages to promote respiratory and hand hygiene practices among staff, patients and visitors.
<u>specimen handling</u>	Define protocols for safe collection, handling and transport of clinical specimens according to the relevant national guidance/directives or internationally accept standards.
<u>risky procedures</u>	Establish internal rules and regulation on the use of aerosols producing procedures in case management and medical/laboratory examinations.
<u>cleaning and disinfection</u>	Define protocols for cleaning and disinfection of rooms/facilities according to the relevant national guidance/directives or internationally accept standards.
<u>waste management</u>	Ensure procedure for the disposal of medical and non-medical solid waste according to the relevant national guidance/directives or internationally accept standards.
Key actions	<input type="checkbox"/> Hospital Infection Control Team/Committee functional <input type="checkbox"/> Standard and droplet precautions well understood and practiced by hospital staff <input type="checkbox"/> Criteria for PPE dissemination defined <input type="checkbox"/> Regulations on the use of aerosols producing procedures prepared

3. Triage	
<u>triage team</u>	Assign medical, administration, logistics and security staff for triage planning and implementation.
<u>spatial planning</u>	Spatial planning for patient flow and dedicated areas for triage, emergency care, isolation and a separate waiting room for patients with respiratory symptoms. Closely coordinate with security officer to design robust spatial plan.
	<b>(following the activation of the plan)</b> Post clear wall signs and instructions for smoothening patient flow and promoting risk reducing behaviors among patients and visitors
<u>triage protocol</u>	Draft triage protocols considering the key objectives of <u>early detection of acute respiratory illnesses for isolation/cohorting</u> and <u>prioritization of severe cases for immediate care</u> . Maintaining proper management of serious medical conditions other than pandemic infection. Consider employing non-conventional approaches: phone triage to reduce unnecessary visits, dedicated febrile illness consultation room, etc. Define the activation and deactivation processes (triggers and authority) of triage system.
	<b>(following the activation of the plan)</b> Regularly monitor the patient flow and triage performance. Review and revise the triage protocol considering changes in epidemiological situation and resource availability.
<u>supplies for triage</u>	Estimate the supply need for the triage operation (PPE, hand hygiene supplies, registration inputs, triage tag, tent, furniture, etc) and prepare stand-by arrangement if needed.
<u>training and drills</u>	Disseminate information on triage procedure. Conduct triage drills preferably with local authority, medical emergency system, community care providers and volunteers.
Key actions	<input type="checkbox"/> Triage team/ responsible staff appointed <input type="checkbox"/> Clear spatial planning documented and agreed by the hospital management <input type="checkbox"/> Basic supplies for the triage operation quantified and procurement plan drafted (or already secured) <input type="checkbox"/> Triage procedure disseminated and a test drill conducted
4. Care provision (Clinical Management)	
<u>clinical protocols</u>	Ensure health care personnel are updated on the clinical protocols consistent with national guidelines and directives
<u>standards of care</u>	Consider preparing/adopting altered standards of care in critical situation, especially by setting minimum standards for common conditions and expanding the authority for different job categories e.g. nurses, junior doctors, medical/nursing students and health volunteers.
<u>home care</u>	Prepare for promoting home care with sufficient back-up by the community network (GPs, community nurses, social workers, community volunteers) and clear message on when and how to seek additional medical care. Home care package (information leaflet and necessary materials) may be developed and prepared.
<u>populations require special attention</u>	Identify the strategies to minimize the risk of infection among vulnerable groups (patients with diabetes, chronic lung diseases, pregnant women and young children)
<u>Care continuity</u>	Develop care continuity plan (business continuity plan) to maintain essential services including cares for diabetes patients, patients on dialysis, TB patients on DOTS and HIV infected persons on ARV. Prepare maternity services (antenatal care, delivery services, newborn and postnatal care) in pandemic situation according to the relevant national guidance.
<u>psychosocial support</u>	Prepare psychosocial support to patients and families. Where appropriate, consider actively engaging local resources such as religious leaders/ services and Faith-Based Organizations in patient and family support, especially facing with epidemics with excessive mortality and high social impact.
Key actions	<input type="checkbox"/> System in place to inform staff of up-to-date clinical protocols <input type="checkbox"/> Home care strategy discussed and developed preferably with the community involvement <input type="checkbox"/> Potential strategies to protect vulnerable groups identified <input type="checkbox"/> Guidance in place to prepare maternity services in pandemic situation (national level guidance essential)
5. Bed management	
<u>hospitalization strategies</u>	Develop hospitalization strategies when the bed capacity is seriously limited: ARD rooms (stabilization of acute respiratory diseases), day-care/over-night beds (for short-term observations), early discharge protocols for ARD and other common acute illness
<u>bed management within hospital</u>	Prepare protocols for reconversion of beds and expansion of bed capacity within the hospital for surge capacity (chronic care unit, bed for elective surgery, palliative care unit, makeshift ward by tent/portable beds etc)
<u>bed expansion outside hospital</u>	Explore the strategies for additional inpatient units in the community (hotels, schools, field hospitals, etc). Private hospitals and care facilities may accommodate chronically ill stable patients, even may not be capable of managing pandemic patients.
Key actions	<input type="checkbox"/> Hospitalization strategies / options thoroughly discussed and drafted <input type="checkbox"/> Bed management strategies / options within hospital identified and drafted. <input type="checkbox"/> Bed expansion strategies explored preferably jointly with local authorities, leaders and business community.

6. Human resource management	
<u>staff database and competency mapping</u>	Update the lists of all hospital staff, essential professionals and map of competencies. Consider immediate re-allocation of human resources according to the priority and expected workload on the activation of the preparedness plan.
<u>assign key responsibilities</u>	Key designations should be made and updated as a part of hospital emergency plan such as core members of management body and functional teams
<u>second line human resources</u>	Identify the second line of human resources especially those in the local communities (community volunteers, NGOs, local Red Cross Societies, retired professionals, medical/nursing school teachers and students). Potential partners should be engaged in the community level coordination mechanism. Define the functions and protocols for additional human resources and prepare a stand-by agreement with major partners. Prepare for the additional capacity needs in second-line human resources management.
<u>capacity building</u>	Identify the capacity gaps and plan/provide trainings for the effective preparedness and implementation of hospital emergency plan
Key actions	<input type="checkbox"/> Database for all hospital staff and essential professionals (core staff) prepared and updated <input type="checkbox"/> Competency mapping conducted <input type="checkbox"/> Second line human resources thoroughly explored and the database developed <input type="checkbox"/> Community coordination mechanism exist / established
7. Supply management	
<u>store inventory system</u>	Existing store inventory system should incorporate necessary supplies for hospital emergency management including pre-positioned stockpiles. Regular stock monitoring and timely requisition of infection control supplies
<u>needs assessment</u>	Define and update the potential needs of infection control supplies and essential medicines according to the most probable scenarios (may need guidance from national level: estimated attack rate, medical needs, etc)
<u>antiviral and vaccines</u>	Clarify the logistics arrangement and policy for the antiviral medicines and vaccines (assess the cold-chain capacity for vaccines)
Key actions	<input type="checkbox"/> Medical store inventory system in place and well functioning <input type="checkbox"/> Stock assessment for PPE and other infection control supplies (disinfectant, soaps) conducted <input type="checkbox"/> Stock assessment for essential medicines and consumables conducted <input type="checkbox"/> Identified supply gaps are addressed (government indent, stand-by agreement with providers, etc.)
8. Protecting and supporting staff	
<u>staff health monitoring</u>	Prepare health monitoring system for all health care staff (temperature surveillance, etc) and define the protocols for sick staff. It is more effective and appropriate if conducted everyday before hospital staff physically present to the facility.
<u>infection control</u>	Refer to infection control above
<u>prophylaxis and vaccines</u>	Adopt protocols for prophylaxis and vaccine administration according to the national guidance
<u>social support</u>	Prepare for the support needs of staff when certain public measures put in place. For example, if nurseries are closed, a hospital may need to arrange child day care for essential hospital staff by its own, or a local authority should maintain the service
<u>psychological support</u>	Prepare for the psychological support to health care staff
	(following the activation of the plan) Psychological services in place involving experts and/or trained volunteers. Consider engaging local resources (refer above Care provision section).
Key actions	<input type="checkbox"/> Staff health monitoring system designed and drafted (ideally tested) <input type="checkbox"/> Explore the strategies to enable hospital staff in crisis situation, preferably with local authorities and community <input type="checkbox"/> Psychological support is included in the preparedness plan and responsible person designated (and pre-trained).
9. Miscellaneous issues	
<u>hospital security</u>	Hospital may require additional security due to the overwhelming demand from the community and potential social instability. Develop hospital security plan for crisis situation, preferably jointly with local authorities (administration, police, other relevant sectors) including access control protocol for visitors.
<u>mortuary services</u>	Prepare for the potential excessive mortality (space for accommodating corpses, mortuary services, necessary supplies - groves, mortuary bags, etc), considering cultural sensitivity and acceptability. Coordinate with local community and religious leaders where appropriate.
Key actions	<input type="checkbox"/> Hospital security plan for crisis situation developed and included in the hospital emergency plan <input type="checkbox"/> Hospital emergency plan includes the considerations on potential excessive mortality and mortuary services

## Online resources

### Overall

Technical Document 3: General recommendations for the organization of health care facilities for the care of A(H1N1) influenza cases

[http://new.paho.org/hq/index.php?option=com\\_docman&task=doc\\_download&gid=1533&Itemid](http://new.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=1533&Itemid)  
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A practical tool for the preparation of a hospital crisis preparedness plan, with special focus on pandemic influenza

<http://www.euro.who.int/document/e89763.pdf>

Pandemic influenza: guidance on preparing maternity services

[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_091737](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_091737)

HHS Pandemic Influenza Plan – Supplement 3 Healthcare Planning

<http://www.hhs.gov/pandemicflu/plan/sup3.html>

### Organization and Coordination

Technical Document 3: General recommendations for the organization of health care facilities for the care of A(H1N1) influenza cases

[http://new.paho.org/hq/index.php?option=com\\_docman&task=doc\\_download&gid=1533&Itemid](http://new.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=1533&Itemid)  
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(p2, Section 1. Organization and coordination)

(p11, Section 1. Organization and management)

Hospital pandemic planning checklist

<http://www.pandemicflu.gov/plan/healthcare/hospitalchecklist.pdf>

### Infection Control

Infection prevention and control in health care in providing care for confirmed or suspected A(H1N1) swine influenza patients

[http://www.who.int/csr/resources/publications/SwineInfluenza\\_infectioncontrol.pdf](http://www.who.int/csr/resources/publications/SwineInfluenza_infectioncontrol.pdf)

Infection prevention and control of epidemic- and pandemic-prone acute respiratory diseases in health care

[http://www.who.int/csr/resources/publications/WHO\\_CDS\\_EPR\\_2007\\_6c.pdf](http://www.who.int/csr/resources/publications/WHO_CDS_EPR_2007_6c.pdf)

Collecting, preserving and shipping specimens for the diagnosis of avian influenza A(H5N1) virus infection: guide for field operations

[http://www.who.int/csr/resources/publications/surveillance/WHO\\_CDS\\_EPR\\_ARO\\_2006\\_1/en/](http://www.who.int/csr/resources/publications/surveillance/WHO_CDS_EPR_ARO_2006_1/en/)

### Triage

Technical Document 3: General recommendations for the organization of health care facilities for the care of A(H1N1) influenza cases

[http://new.paho.org/hq/index.php?option=com\\_docman&task=doc\\_download&gid=1533&Itemid](http://new.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=1533&Itemid)  
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(p4, Section 4 Triage)

HSS Pandemic Influenza Plan – Supplement 3 Healthcare Planning

(Section: Triage, clinical evaluation, and admission procedures, Facility access)

<http://www.hhs.gov/pandemicflu/plan/sup3.html#triage>

### Care provision (clinical management)

Reducing excess mortality from common illnesses during an influenza pandemic  
[http://www.who.int/diseasecontrol\\_emergencies/common\\_illnesses2008\\_6.pdf](http://www.who.int/diseasecontrol_emergencies/common_illnesses2008_6.pdf)

Interim guidance for swine influenza A(H1N1): taking care of a sick person in your home  
[http://www.cdc.gov/h1n1flu/guidance\\_homecare.htm](http://www.cdc.gov/h1n1flu/guidance_homecare.htm)

Pandemic influenza: guidance on preparing maternity services  
[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_091737](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_091737)

Altered Standards of Care in Mass Casualty Events  
<http://www.ahrq.gov/research/altstand/>

### **Bed management**

Technical Document 3: General recommendations for the organization of health care facilities for the care of A(H1N1) influenza cases  
[http://new.paho.org/hq/index.php?option=com\\_docman&task=doc\\_download&gid=1533&Itemid](http://new.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=1533&Itemid)  
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(p5, Section 5, Bed management)

### **Human resource management**

Technical Document 3: General recommendations for the organization of health care facilities for the care of A(H1N1) influenza cases  
[http://new.paho.org/hq/index.php?option=com\\_docman&task=doc\\_download&gid=1533&Itemid](http://new.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=1533&Itemid)  
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(p6, Section 6, Resource management)  
(p17, Section 2, Human Resources)

### **Supply management**

Technical Document 3: General recommendations for the organization of health care facilities for the care of A(H1N1) influenza cases  
[http://new.paho.org/hq/index.php?option=com\\_docman&task=doc\\_download&gid=1533&Itemid](http://new.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=1533&Itemid)  
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(p6, Section 6, Resource management)

Altered Standards of Care in Mass Casualty Events  
(Section: Ensuring an Adequate Supply of Health Care Providers)  
<http://www.ahrq.gov/research/altstand/altstand4.htm>

### **Protecting and supporting staff**

Technical Document 3: General recommendations for the organization of health care facilities for the care of A(H1N1) influenza cases  
[http://new.paho.org/hq/index.php?option=com\\_docman&task=doc\\_download&gid=1533&Itemid](http://new.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=1533&Itemid)  
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(p7, Section 7, Protecting the health and safety of health care workers (HCW))

Guidance on preparing workplaces for an influenza pandemic (OSHA 3327-02N 2007)  
[http://www.osha.gov/Publications/influenza\\_pandemic.html#spread\\_between\\_people](http://www.osha.gov/Publications/influenza_pandemic.html#spread_between_people)

Psychological support for essential workers during a pandemic  
[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_080771](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_080771)

### **Miscellaneous issues**

Management of dead bodies after disasters: a field manual for first responders  
<http://www.helid.desastres.net/gsd12/collect/who/pdf/s13491e/s13491e.pdf>