DRAFT

Action Plan

Pandemic Preparedness and Response

for Managing Novel Influenza A H1N1
(earlier called Swine flu)

(or that arising from any other novel strain of Influenza)

Directorate General of Health Services
Ministry of Health and Family Welfare
Nirman Bhawan
New Delhi

For obtaining hard copies of this Action Plan or to provide feed back please write or E-Mail to:

Director, Emergency Medical Relief
Directorate General of Health Services
Ministry of Health and Family Welfare
Room No 555-A Wing
Nirman Bhawan
New Delhi
diremr@nic.in

Soft copy is available at www://mohfw.nic.in

Contents

	Annexures	
I	Work Allocation in MOHFW	
II	Guidance to Airlines.	
III	Standard Operating Procedure for Entry Screening/ Exit Screening.	
IV	Role of District Collector in Pandemic Preparedness and Response	
V	Role of Chief Medical Officer	
VI	Emergency Support Function Plan of MOHFW	
VII	Contact numbers of the MOHFW and other Ministries	
VIII	Role and responsibilities of Central Rapid Response Team	
IX	Contact numbers of State Nodal Officers	
X	Operating procedure for Cluster Containment	
XI	Model Micro Plan for Managing Human Cluster	
XII	Case Definition	
XIII	Data Collection Tools for cluster management	
XIV	Guidelines for contact tracing	
XV	Data Collection tools for passive surveillance	
XVI	Bio Safety Laboratories identified for testing	
XVII	Guidelines for specimen collection, storage, transportation and laboratory diagnosis of Influenza A H1N1(or any other novel influenza virus)	
XVIII	The CRB screening tool for the community health workers	
XIX	Guidelines for providing home care	
XX	Clinical management protocol	
XXI	Guidelines on infection control practices	
XXII	Standard Operating Procedures on Use of PPE	
XXIII	Do's and Don'ts for Community	
XXIV	Frequently Asked Questions (FAQ)	

ACRONYMS

AIIMS	All India Institute of Medical Sciences
AIMC	Avian Influenza Monitoring Cell
APHO	Air Port Health Organization
BDO	Block Development Officer
BSL	Bio Safety Laboratory
CDC	Centre for Disease Control
CHC	Community Health Centre
CISF	Central Industrial Security Force
CMO	Chief Medical Officer (of the District)
CRB	Consciousness, Respiration and Blood Pressure
CRI	Central Research Institute, Kasuali
DDMA	District Disaster Management Authority
DGHS	Director General of Health Services
Dte GHS	Directorate General of Health Services
DHS	Director of Health Services (State)
DM	District Magistrate
ADM	Additional District Megistrate
EMR	Emergency Medical Relief Division
EOC	Emergency Operating Centre
ESF	Emergency Support Function (plan of MOHFW)
ESI	Employees State Insurance Corporation
JMG	Joint Monitoring Group.
I&B	Information and Broadcasting
ICMR	Indian Council of Medical Research
IDSP	Integrated Disease Surveillance Project
IEC	Information, Education, Communication
IHR	International Health Regulation
ILI	Influenza Like Illness
IMA	Indian Medical Association
IMTF	Inter Ministerial Task Force
MOHFW	Ministry of Health and Family Welfare
MHA	Ministry of Home Affairs
NCMC	National Crisis Management Committee
NCC	National Cadet Corps
NDMA	National Disaster Management Authority

NGO	Non Governmental Organization
NIC	National Influenza Centre
NICD	National Institute of Communicable Diseases
NICED	National Institute of Cholera and Enteric Diseases
NIV	National Institute of Virology
NRHM	National Rural Health Mission
NSS	National Social Service
PHC	Primary Health Centre
PPE	Personal Protective Equipment
PRI	Panchayati Raj Institutions
PWD	Public Work Department
RMRC	Regional Medical Research Centre
ROHFW	Regional Office of Health and Family Welfare
RRT	Rapid Response Team
SARI	Severe Acute Respiratory Disease.
SDMA	State Disaster Management Authority
SOP	Standard Operating Procedure
SP	Superintendent of Police
UN	United Nations
UNICEF	United Nations Children Fund
WHO	World Health Organization

1. Introduction

1.1 Influenza

Influenza virus can infect both human beings and animals notably pigs, birds, horses etc. Three types of influenza viruses are known, namely A, B and C. While humans may be affected by all the three influenza viruses, in lower animals and birds, influenza A viruses are of primary concern. Influenza A virus causes infection in humans all round the year and is responsible for most of the seasonal epidemics and pandemics. Influenza B causes sporadic and less severe outbreaks whereas the type C causes mild respiratory illness.

Influenza A viruses are divided into subtypes based on two glycoproteins (haemagglutinin and neuraminidase antigens) present on the surface of the virus. There are 16 haemagglutinin (H) antigens (1 to 16) and 9 neuraminidase (N) antigens (1 to 9). The viruses can have different combinations of H and N antigens. While all 16 haemagglutinin subtypes of influenza A viruses readily infect the birds, viruses having any of the H1, H2 or H3 haemagglutinin antigens and any of the N1 or N2 neuraminidase antigens only affect the humans usually. In fact, H1N1, H2N2, and H3N2 subtypes of influenza A virus have been associated with most of the widespread epidemics and all the pandemics of the past.

1.2 Influenza A H1N1

Influenza A H1N1 is a circulating seasonal influenza virus that caused pandemic in 1918-1919. The present pandemic is being caused by a new sub type of Influenza A H1N1 which has re-assorted with antigenic segments from American swine, Eurasian Swine, avian and human influenza virus. The majority of these cases have occurred in otherwise healthy young adults. The incubation period is from 1-7 days. The virus is spreading from human to human through droplet infection. The period of communicability is from 1 day before to 7 days after the onset of symptoms. It may be longer in children (up to 3 weeks) The virus is currently sensitive to Oseltamivir.

1.3 Global Scenario

This sub type of Influenza A [H1N1], was first reported in Mexico on 18th March, 2009 and then spread to neighbouring United States and Canada. As on 8th June, 2009, World Health Organization has reported 25,288 laboratory confirmed cases of influenza A/H1N1 infection with 139 deaths from 73 countries spread over America, Europe, Asia and Australian continent.

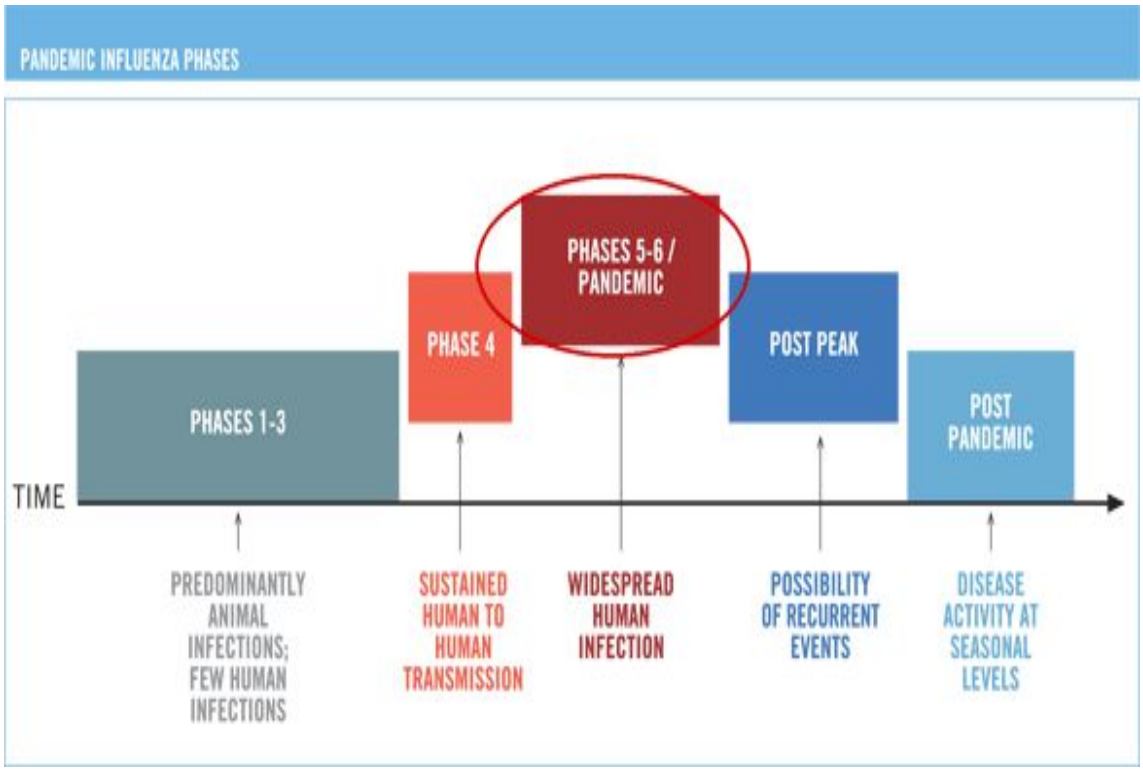
1.4 Situation in India

As on 29.052009 there is one imported case that came from U.S.A. There has been no secondary spread from that index case. However, with efficient human to human

transmission established and more than 48 countries involved, it is a matter of time that this pandemic strain would come to India. The behavior of this mutant virus among the Asian population cannot be predicted. The virus has the potential to mutate further and become a lethal virus .

1.5 Current WHO phase of Pandemic Alert

World Health Organization has officially designated the present outbreak as public health emergency of international concern and has raised the pandemic alert phase to level -5 implying widespread human transmission. WHO has stated that containment may not be possible at this stage and is advocating mitigation measures. It has recommended against closing borders and restricting or banning air travel from affected countries.



1.7 Purpose of document

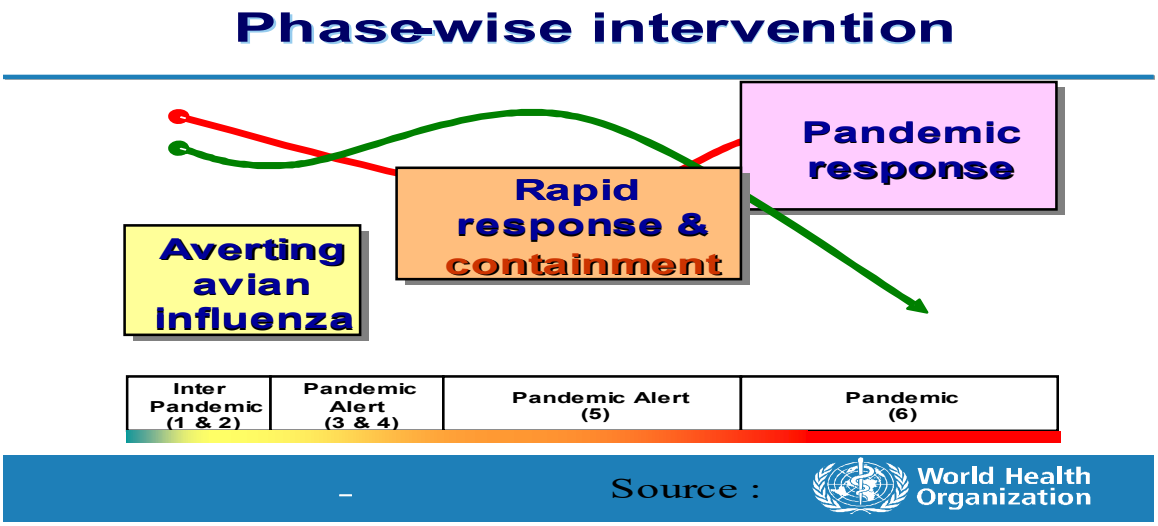
A series of actions need to be put in place to contain the outbreak. The strategy would depend upon the efficiency with which the virus is transmitting. The purpose of this document is to provide action plan for early detection of human cluster of influenza, appropriate case management and to institute public health measures that would ensure containment / control of the outbreak.

This action plan is intended to be used in Phase 5 and 6 of the pandemic phase.

2. Strategic Approach

2.1 Phase-wise approach

India had been following a phase-wise approach advocated by World Health Organization for averting avian influenza and for containment of a novel virus that could emerge and eventually get adapted for efficient human to human transmission.



For the present pandemic with re-assorted influenza A H1N1, as of now, WHO is not advocating a containment strategy. It is also not known how this virus or a further mutated strain would behave in Indian population.

2.2 Strategy

The phase 5 requires substantial action from sectors other than health that would be coordinated by NDMA. These actions will culminate in weaving the entire set of actions into the national disaster management framework for phase -6.

The strategic approach for health sector revolves around five broad areas of (i) surveillance and early detection (ii) pharmaceutical intervention and (iii) non-Pharmaceutical intervention (iv) clinical management (v) risk communication.

2.2.1. Surveillance

Existing surveillance mechanism at community level, ports and airports and border crossings would be strengthened to detect early clusters of influenza like illness or severe acute respiratory illness. The laboratory (virological) surveillance need to detect the

circulating strains and should have the capability to detect any new strain that enters the country or that gets established within the country.

India would network with WHO and the global influenza networks to monitor the global situation and to understand the containment/ mitigation measures adopted by the affected countries.

Integrated Disease Surveillance Project (IDSP) would be strengthened to report clusters of influenza like illness (ILI) in real time. The medical practitioners, both in Government and non governmental sector would also be appealed to report ILI.

When India gets affected with a small cluster and transmission not efficient, cluster containment strategy could be enforced provided it is supported by the requisite legal, administrative, technical and resource support. The defined population in a geographic area would be subjected to active house to house surveillance, contact tracing and chemoprophylaxis.

If wide spread infection is inevitable, then the health care institutions would be reporting the morbidity and mortality.

2.2.2. Pharmaceutical intervention

As of now, India has a stock of 10 million capsules of oseltamivir. Some stocks are also committed by pharmaceutical companies for exclusive use by the Government. This drug is only available through the public health system and its retail sale is banned as indiscriminate use may lead to development of resistance. If there is widespread infection, MOHFW would review this decision.

2.2.2.1 Oseltamivir

2.2.2.1.1. Treatment

- At the individual level, Oseltamivir would be used to treat cases.
- Initially oseltamivir is recommended to be given to all suspect cases and to provide chemoprophylaxis to immediate family and social contacts. Once the infection gets widespread but with less severity, then oseltamivir need to be provided only to those developing lower respiratory tract infection

2.2.2..1.2. Chemo prophylaxis

- Chemoprophylaxis for health care workers at high risk
    - The treating physicians and other paramedical personnel at the isolation facility would be put on chemoprophylaxis.
- Chemoprophylaxis for contacts

- Chemoprophylaxis is advised for those contacts with high risk (with under lying systemic diseases; extremes of age [< 5 years and > 65 Years].

- In phase -5, if the clusters are reported for the first time, and given that those exposed are known and can be traced easily, then family, social and community contacts should be given chemoprophylaxis.

- Mass Chemoprophylaxis:

  - The strategy of containment by geographic approach by giving oseltamivir to every individual in a prescribed geographic limit of 5 km from the epicenter (The village / city where the cluster is reported) would be applied :

    - If the virus is lethal and causing severe morbidity and high mortality and
    - Though effecting humans, is not efficiently transmitting in our population and
    - If the cluster is limited by natural geographic boundaries

  A direct inference to this effect can be drawn from the time line with in which number of secondary cases emerges from the primary case. One such indicator is the reproductive number; if one person infects two persons in 3 days (15 cases in 10 days) containment may be difficult but yet possible. If the spread is more than this, containment is less likely. Widely dispersed multiple clusters would indicate that the clusters cannot be contained through the geographic approach. District Collector would be informed of this by the Central / State RRT. This strategic decision would be taken by the RRT in consultation with State Health Department/ MOHFW, Government of India.

2.2.2.2. Influenza H1N1 Vaccine

The currently available information suggests that seasonal influenza vaccine is found not effective against the re-assorted virus. It takes about six months to manufacture a vaccine against a novel virus. Hence, a vaccine may not be available during the first wave of the pandemic. If the candidate vaccine strains are made available by WHO or synthesized in our labs, the vaccine would be manufactured. Depending upon the availability, the at-risk population would be prioritized for vaccination.

2.2.3. Non-pharmaceutical interventions

The non pharmaceutical interventions would include measures that need to be instituted at individual, community and national level.

At individual level there would be isolation of the patient and quarantine of those exposed. Individuals should follow simple public health measures for infection control such as hand washing, respiratory etiquettes, staying away from those having respiratory

symptoms and by using masks. At individual level, self recognition of illness and self reporting to identified health facility would be encouraged.

At the community level, during phase 5, community wide quarantine (restricting entry/ exit of population from a defined geographic area) is only advocated if the virus is not efficiently transmitting, mass chemoprophylaxis could be achieved and resources are available to implement and maintain quarantine. Essential services also need to be ensured with in the quarantined community.

For phase 5/6, social distancing measures need to be imposed such as closure of school, college, business, cinemas, theatres and markets. School closure is especially useful if high morbidity among children is seen and should be implemented early. Mass gatherings such as festivals, weekly markets, sporting events, religious and social congregations, funerals etc need to be discouraged or cancelled. Public transportation need to be restricted and should also be achieved by voluntary or involuntary work holidays.

At the national level, Indian citizens would be advised to defer non essential travel. Information would be provided to travelers regarding the disease. Entry screening would be imposed at all international airports, ports and international checkpoints. If India got affected with community outbreaks, then exit screening would be considered.

2.2.4 Medical care

Till such time India is not having any clusters, the entry screening would be complimented by dedicated isolation facilities where the suspect cases could be kept. The preparedness measures to be put in place for phase 6 would see health workers trained on triage and referral and providing domestic care. The CRB-65 clinical assessment tool would be adopted. Hospital disaster manual would have provisions for surge capacity. It should address emergency staffing needs and increased demand for isolation wards, ICUs, ventilatory management and the logistic support required for these. If need be, patients could be accommodated in temporary hospitals.

Defence (especially for Cantonment Board area), Railways and Employees State Insurance Corporation (ESI) have a number of hospitals. These organizations would contribute towards the surge capacity.

The private sector, which caters to over 70 per cent of the medical needs of this country would also be made to contribute to provide health care on an equitable basis.

2.2.5 Risk Communication

Risk Communication would be the most important non-pharmaceutical intervention. The risk and risk reduction strategies/ actions would be communicated in clear consistent messages and widely disseminated through print and visual media.

3 Institutional Framework

Inter-sectoral coordination is essence of managing pandemic. As the pandemic phase changes from phase three to six, substantial role is envisaged for sectors other than health. Ultimately for managing phase 6 of the pandemic, the activities have to be dovetailed into the disaster management frame work. The foregoing paragraphs identifies mechanism for the sectoral co-ordination, the institutional mechanism at national, state and district level and defines their roles and responsibilities.

3.1. **National level**

3.1.1 The National Disaster Management Authority and National Crisis Management Committee would review the preparedness and response and issue strategic directions for the containment operations / mitigation measures.

3.1.2 Inter Ministerial Task force

Policy decisions and inter sectoral issues would be decided in the Inter Ministerial Task Force. The constitution of the Task Force is as under;

Secretary (Health & FW)	*--- Chairman*
Secretary (Animal Husbandry)	*--- Member*
Secretary (Information and Broad casting)	*--- Member*
Secretary (Civil aviation)	*--- Member*
Secretary (Home)	*--- Member*
Secretary (Chemicals and Fertilisers)	*--- Member*
Secretary (Defence)	*--- Member*
Secretary (NDMA)	*--- Member*
Secretary and DG, ICMR	*--- Member*
Director General of Health Services	*--- Member*
Special DGHS (Public Health)	*--- Member*
Mission Director, NRHM	*--- Member*
Additional Secretary (H&FW)	*--- Member Secretary*

The Task Force would co-opt members from other sectors as required.

3.1.3 Joint Monitoring Group

The Joint Monitoring Group would recommend on technical matters and monitor outbreak situation. The constitution of the Joint Monitoring Group is:

Director General of Health Services	*--- Chairman*
DG, ICMR	*--- Member*
Special DGHS	*--- Member*

Animal Husbandry Commissioner	*--- Member*
Representative of M/o Home Ministry	*--- Member*
Representative of M/o I&B	*--- Member*
Representative of M/o Environment and Forest	*--- Member*
Sr DDG, ICMR	*--- Member*
Representative NDMA	*--- Member*
HoD, Respiratory Medicine, AIIMS	*--- Member*
HoD, Microbiology, AIIMS	*--- Member*
HoD, Epidemiology, NICD	*--- Member*
HoD, Microbiology, NICD	*--- Member*
WR,WHO	*--- Member*
Director (EMR)	*--- Member Secretary*

The institutions as well as their individual role and responsibilities are;

3.1.4 **Ministry of Health and Family Welfare**

Ministry of Health and Family Welfare (MOHFW) would be the nodal ministry. It would support States in managing human cases caused by a novel influenza virus. The participating units would be:

- Public Health Division, MOHFW.
- Emergency Medical Relief (EMR) Division of Directorate General of Health Services (Dte GHS), MOHFW.
- International Health Division, Dte GHS, MOHFW.
- National Institute of Communicable Diseases (NICD) and Integrated Disease Surveillance Project.
- Central Government Hospitals and
- Institutions under Indian Council of Medical Research (ICMR).

The specific work allocated to these units is at **Annexure-I**

MOHFW will be supported by other ministries such as Home Affairs, Agriculture, Civil Aviation, Defense, External Affairs, Information and Broadcasting, Chemicals and Fertilizers and other ministries as deemed relevant for the management operations.

MOHFW will also liaison with the international agencies namely WHO (technical and logistic support) and UNICEF (IEC etc).

3.1.5 **Ministry of Home Affairs (MHA)**

MHA would facilitate:

- Border control to prevent cross border spread.
- Augmenting state security forces for facilitating perimeter control of containment zone for restricting movement of human population.

- Support the state in maintaining law and order
- Provide support for restriction of movement in and from the affected area.
- Enforcing social distancing measures.
- Provide support for airlift of RRTs / logistics/ samples to and from inaccessible areas.

3.1.6. Ministry of External Affairs

- Liaison with affected countries, arranging bi-lateral or multi lateral meetings.
- Raising issues in international and regional forums.
- Visa restriction, if required.
- Providing information on foreign nationals traveling to India.

3.1.7. Ministry of Defence

- Training faculty of its medical colleges and cantonment hospitals and Station Health Officers on pandemic preparedness and response.
- Extend hospital services, especially in cantonment areas to civilians.
- Provide research support to ICMR.

3.1.8. Ministry of Railways

- Train doctors in railway hospitals on pandemic preparedness and response.
- Extend hospital services to civilians.
- Transportation of medical supplies

3.1.9 Ministry of Civil Aviation

- Provide support for airlift of RRT/ logistics/ samples.
- Facilitate exit screening / entry screening.
- Provide the screening proforma to the airlines.
- Provide space for screening, clinical examination and quarantine.
- Provide space for setting up of Airport Health Organization.

3.1.10. Ministry of Shipping, Surface Transport and Highways

- Facilitate exit screening / entry screening
- Port Quarantine
- Restriction of public transport.

3.1.11. Ministry of Consumer Affairs, Food and Public Distribution

- Maintain essential food supply to the Quarantine area
- Maintain essential food supply during pandemic phase.

3.1.12. **Ministry of Information and Broadcasting**

- Develop Media strategy
- Role out appropriate communication materials for National and State campaign.
- Facilitate availability of slots for media communication in print / visual media.
- Utilize the field publicity units for social mobilization.

3.1.11. **Ministry of Agriculture (Department of Animal Husbandry)**

- Provide information on unusual poultry deaths to MOHFW at the earliest but not later than 24 hours (if concurrent outbreaks is taking place among poultry).
- Convey the laboratory test results of the poultry deaths at the earliest.
- Keep close liaison with MOHFW, especially if the human cluster has happened an area where poultry outbreak is ongoing/ has been reported/ post operation surveillance activities are continuing.

3.3 National Disaster Management Authority (NDMA).

NDMA would co-ordinate integration of Pandemic influenza prevention, preparedness and response with existing disaster management frame work at all levels. This would include a co-ordinated mechanism for health and sectors beyond health for maintaining essential services and continuity of operations. Also such co-ordination mechanism would be established between Government and non-government entities. The plans of all critical sectors would be approved by NDMA and implementation monitored.

NDMA would monitor the progress of the pandemic and the impact of the mitigation measures in health and sectors other than health.

3.4 State level

Chief Secretary would ensure co-ordination between health, home and other relevant departments. The State would sensitize administrators on pandemic and actions to be taken in health and sectors beyond health.

The Principal Secretary / Secretary of the State Health Department will take administrative and financial decisions with regard to prevention, preparedness and response activities pertaining to the health sector. A Technical Committee under DHS would provide the technical support.

The State Health Department would draw up its pandemic plan and test it. The plan would provide for surveillance for detecting cases early, institute preparedness measures, provide training to State and District RRTs, stock personal protective equipments and provide necessary infrastructure for clinical management of cases. Health workers would be trained on triage and clinical management. The Central Government's efforts in

creating awareness among the community on mitigating the risks would be further facilitated by the State's own initiatives through both print and visual media.

3.5 State Disaster Management Authority (SDMA).

SDMA would co-ordinate integration of Pandemic Influenza prevention, preparedness and response with existing disaster management frame work at State level. This would include a co-ordinated mechanism of health and sectors beyond health for maintaining essential services and continuity of operations in States and districts. Such co-ordination mechanism would be established between Government and Non-Government entities. The District plans of all would be approved by SDMA and implementation monitored.

3.6 District level

District Collector would assume charge of overall co-ordination. The Chief Medical Officer would support in implementing all actions pertaining to health sector. The District IDSP would be responsible for surveillance for ILI and pneumonia cases. The District Rapid Response Team would investigate the outbreak and provide support in instituting public health measures. In phase -6, the District Disaster Management Authority would be responsible for all actions for sectors other than health. The institution of the containment/ mitigation measures and maintaining essential services would be done by the district machinery through the grass root level functionaries.

4 Preparedness and Response- India not affected

If India remains unaffected, there is a small window of opportunity to review and test the plans. The strategy appropriate to this phase would be enhanced surveillance, implementing border, port, and airport control and communicating risk to the community. There is evidence from the past pandemics that implementing these strategies may delay the arrival of the pandemic and the time earned would be crucial for putting in place preparedness measures.

4.1 Planning and Coordination

The NDMA, NCMC and the Crisis Management Groups of individual ministries would review the preparedness to fill critical gaps if any. The Inter Ministerial Task Force in MOHFW would decide on sectoral issues and lay down policy pertaining to pandemic preparedness. It would also evaluate the components of the plan including procurement of medical stockpiles of antiviral drugs and personal protection equipments. The SDMA and DDMA would review the preparedness of their respective states and districts. Subsequent review meetings would ensure implementation of the decisions.

The technical inputs / recommendations would be provided by the Joint Monitoring Group at the Central level and similar technical advisory groups / committees at the State level.

MOHFW would issue guidance to States on the steps to be taken in the event of pandemic.

4.2 Components of Pandemic Preparedness Plan

4.2.1 Surveillance

In short term, the surveillance of influenza would be strengthened as one network pooling in the resources form NICD and ICMR. The structure of Integrated Disease Surveillance Project would be used for enhancing the influenza surveillance. The existing sentinel sites and laboratories would continue routinely testing samples to keep track of the current strain and to detect variance.

India would continue to monitor the emerging global situation. It would network with the global influenza networks to share information. WHO could assist in getting information to understand the containment/ mitigation measures adopted by the affected countries.

As an interim measure, the health departments of the States would issue directions to all health facilities including private practitioners, nursing homes, and private hospitals to report clusters of influenza like illness and severe acute respiratory illness. The services

of professional bodies in the state such as Indian Medical Association and Indian Academy of Paediatrics etc would be ensured. The 24x7 Call Centre of the IDSP would be strengthened for reporting of clusters of ILI.

The trained Rapid Response Teams of the States and the Districts would be on alert to investigate the outbreak. Public health measures need to be instituted as per the district plan and micro planning done for the affected area.

In long term, National Influenza Surveillance Network would be set up integrating the NICD, IDSP and identified sentinel sites and the laboratories of medical colleges etc. There would be at least four National Influenza Centres (NIC) representing the country on regional basis. The capacity development would ensure the country in generating appropriate data to define the morbidity and mortality due to seasonal influenza and that caused by novel strains. Further, animal health surveillance would be integrated with human health surveillance to move towards 'one health concept'.

4.2.2. Laboratory Support

National Institute of Virology, Pune is an existing WHO reference laboratory for avian influenza H5. This laboratory along with NICD would be the apex laboratories testing influenza A H1N1 or any other novel influenza virus. There would be two other BSL-3 laboratories namely the NICED, Kolkata and RMRC, Dibrugarh that would be used if the sample load requires additional laboratories. NICD and NIV, Pune would ensure availability of diagnostic kits and viral transport media. Protocols would be drawn up for sample collection, transportation and testing. The transportation of samples in particular would get due attention. NICD would employ courier services to ensure correct and timely delivery of samples.

As a long term strategy both NICD and NIV, Pune would acquire Bio-Safety level- 4 laboratories to test novel viruses that require this capability. The Bio Safety level -3 laboratories would also be enhanced both in human and animal health sector.

4.2.3. Hospital facilities.

During pandemic phase 5 and 6 the hospital preparedness is crucial. Small clusters to widespread infection can be anticipated. All health facilities in the community (PHC, CHC), District and Sub-District Hospitals, medical colleges, private nursing homes and hospitals need to be prepared.

For clinical management, isolation and critical care facilities would be set up in identified hospitals that would be attached to the International airports. Cases, as and when they emerge in the community, need to be managed in hospitals with an isolation facility, the objective being to contain the spread. Hence the states would identify isolation facilities in medical colleges and district hospitals and strengthen them.

Sustained and wide spread infection would imply the need for surge capacity by using every available space, discharging routine cases and only entertaining emergencies in generic and super specialties. The services of private hospitals may have to be taken by an executive order. The hospitals under the administrative control of Ministry of Defence, Labour and Railways need to contribute to case management and surge capacity. For a worst case scenario, sites such as school buildings, Panchayat offices / community spaces need to be identified to set up temporary hospitals. Facilities available with alternate system of medicine would also be put to use. Infection control practices and waste management protocols need to be ensured at all health facilities to protect the health personnel. All hospitals would have hospital disaster manual which would enlist action as brought out above.

The health care providers are at increased risk. There could be large scale absenteeism especially if the virus is lethal. The hospital disaster manual would have a sub plan drawn up for continuity of operations anticipating large scale work absenteeism.

In long term, states would work towards strengthening existing state and district hospitals to treat cases of emerging and remerging disease that require isolation and critical care.

4.2.4. Domiciliary Treatment

A large number of cases could be managed in domestic settings if the health workers or volunteers are trained for triage. The CRB-65 clinical tool would be used to assess the severity of cases. The health workers, volunteers from Red Cross and Civil Defence would be trained on domestic triage and management.

The clinical judgment should be used by practicing physicians to assess severity of disease. Mild cases should be encouraged to stay at home.

4.2.5. Pharmaceutical Interventions

4.2.5.1. Drugs

Oseltamivir is the WHO recommended drug and the only one available with the Government for treating Influenza H1N1. The drug would have application in three scenarios:

- For individual treatment :
    - The recommended dose is 75 mg twice daily for adults. For adolescents and paediatric age group, the dosage is based on body weight and recommended schedule is:
        - For weight <15kg 30 mg twice daily for 5 days
        - 15-23kg 45 mg twice daily for 5 days
        - 24-<40kg 60 mg twice daily for 5 days
        - >40kg 75 mg twice daily for 5 days

- For children below one year and for pregnant women, the administration of oseltamivir would be based on risk –benefit analysis. The recommended dose for children less than one year is:

    - Age <3 months — 12 mg twice daily
    - Age 3 to 5 months — 20 mg twice daily
    - Age 6 to 11 months — 25 mg twice daily

- Supportive therapy : For secondary complications including bacterial infections, appropriate treatment may be provided as indicated.

❋ For chemoprophylaxis :

- Chemoprophylaxis for health care workers at high risk

- The treating physicians and other paramedical personnel at the isolation facility would be put on chemoprophylaxis.

- Chemoprophylaxis for contacts

    - Chemoprophylaxis is advised for those contacts with high risk (with under lying systemic diseases; extremes of age [< 5 years and > 65 Years].

    - In phase -5, if the clusters are reported for the first time, and given that those exposed are known and can be traced easily, then family, social and community contacts should be given chemoprophylaxis.

- Mass Chemoprophylaxis:

- The strategy of containment by geographic approach by giving oseltamivir to every individual in a prescribed geographic limit of 5 km from the epicenter (The village / city where the cluster is reported) would be applied :

    - If the virus is lethal and causing severe morbidity and high mortality.

    - Though effecting humans, is not efficiently transmitting in our population.
    - If the cluster is limited by natural geographic boundaries

    This strategic decision would be taken by the RRT in consultation with State Health Department/ MOHFW, Government of India.

- Modelling studies suggest that antivirals would need to reach a sizeable proportion of affected persons (80%-90%) to be supported by non pharmaceutical interventions.

MOHFW would work out the requirement of oseltamivir and stock pile the required drug. Efforts would be for ICMR and ICIR to develop technology to synthesize the base drug and other potential anti virals.

4.2.5.2 Vaccines

If available, the vaccine is the best preventive strategy to combat a pandemic. However, the lead time required to prepare a candidate vaccine and further putting it for commercial production would take at least six months. Hence the vaccine may not be available to combat the first wave of the pandemic. However, it may just be available to mitigate the second wave.

WHO has identified a global network of manufacturers that includes Serum Institute of India (Pune, Maharashtra). As seasonal Influenza is not considered a public health problem in this country, there is no policy for seasonal influenza vaccine. Such a policy can only be evolved, if the morbidity and mortality due to seasonal influenza is known. This needs to be done through an effective influenza surveillance network. Uptake for seasonal influenza vaccine would see vaccine manufacturers pitching for seasonal influenza vaccine. This only would facilitate switching over to vaccine for the pandemic strain. Public private partnership could be established to meet this objective.

The Drug Controller General and the ICMR would facilitate in establishing this capacity at the earliest.

4.2.6 Non-pharmaceutical interventions

4.2.6.1 Entry screening / exit screening

Border, port and airport screening would facilitate detection of a symptomatic case entering the country from an affected area. The surveillance through entry screening would be enhanced at these places.

The health screening desks would be put ahead of the immigration check points. The Ministry of Civil Aviation and the Airport Authority would facilitate the health screening. A proforma [health screening card] would be used to screen all persons disembarking in India for symptoms of suspected pandemic influenza with novel virus. This proforma would be printed and widely distributed to all airlines with instructions by Ministry of Civil Aviation to make these forms available at the point of embarkation. It

would have an advisory for the passengers informing them about the entry screening and the point of contact if they develop symptoms subsequently.

Under Indian Aircraft (Public Health) Rules 1954, the Captain of the aircraft is required to submit the details of sick passengers on board in the general declaration form to the APHO. The airline crew needs to be sensitized to make announcement / personal enquiry of the fever cases and to certify the same on the general declaration. Guidelines to be issued to airlines are at **Annexure-II**.

The airport health organization infrastructure at International airports and ports would be strengthened by deploying additional doctors, nurses and paramedics. Central Government Health Scheme or the State Government would provide additional doctors and staff nurses for the international airports and ports. All medical personnel, immigration staff and the ground staff would follow standard infection control practices.

A standard operating protocol (**Annexure-III**) would be followed for screening passengers. The screening would require an enquiry into the travel history, signs and symptoms and recording of body temperature manually using digital thermometers or thermal scanners to ascertain whether the case conform to the case definition.

4.2.6.2 Quarantine and isolation

4.2.6.2.1. Airport / Port Quarantine

The quarantine facilities at ports and airports should be strengthened. Quarantine would be used as a disease containment measure during the early stages of an outbreak. This involves possible restrictions on movement, and cohorting a group of exposed passengers to makeshift quarantine facility such as earmarked hotels in the proximity of the airports or to military airbases that could accommodate full flight load of passengers. Such decision would also depend upon the transmissibility and lethality of the virus.

4.2.6.2.2. Community wide quarantine

Community wide quarantine as a strategy could be used to stamp out clusters appearing for the first time. The prerequisites as stated in strategic approach are that the virus is not yet fully adapted and is not transmitting efficiently and the natural geographic boundaries support containment operations. The procedure involves putting physical barriers restricting entry / exit of the population from a defined geographic area of 0-5 km. This could only be attempted, if legal instruments support it, law and order and perimeter control could be enforced, essential services are maintained and are sustained by other pharmaceutical and non-pharmaceutical interventions. Central to enforcing community wide quarantine would be a well drilled micro planning at the operational level. Every district authority would develop the micro plan and test it through mock drill.

4.2.6.2.3 Home quarantine

In the initial phase of the outbreak, all those known to be exposed in closed space environment such as aircraft, bus, train coach, theatre, school, office etc need to be requested to remain on home quarantine for a period of seven days. In phase 5&6, the family and social contacts of a suspect case also need to be under home quarantine. They would be self monitoring their health and reporting to the identified health authorities. Public would be made aware of the need to self quarantine through well managed risk communication strategy using print and visual media. Help lines need to be established and widely circulated and made available on the web site. The IDSP toll free number 1075 can be identified.

4.2.6.2.4. Isolation

During the initial part of the pandemic when India has few clusters, cases would be isolated in identified health facilities. With widespread infection, when containment is not possible, cases would be triaged and those who could be managed at home would be dealt accordingly.

4.2.6.3 Social distancing measures

Inter personal interactions and thereby transmission risks can be reduced by social distancing measures. Historical data from previous pandemics suggest that these measures applied early during the phase 5 and 6 of the pandemic would reduce the impact. School closure should be immediate and a priority if there is high morbidity among children. Mass gatherings such as festivals; sporting, religious, political events need to be discouraged and cancelled. Funeral gatherings, in particular, needs to be discouraged. General public entry to airports and railway stations etc would be restricted. Public transportation may have to be restricted.

Business work place, market closure and 'weekend market' closure need to be considered in a worst case scenario. But before taking such decision it should be ensured that essential commodities are available and families are maintaining essential ration for two weeks.

Enforcing social distancing measures also necessitates maintaining law and order. The micro plan at the operational level would specify the responsible officer and the framework for enforcing and monitoring social distancing measures. All the administrative orders required for enforcing such non-pharmaceutical interventions would be prepared in advance and kept ready to be executed during response phase.

4.2.6.4. Infection control practices

4.2.6.4.1 Infection control practices at individual and community level

There should be a culture among the community to adopt certain simple public health measures that would restrict transmission in the community and safeguard their health. These include hand washing especially after touching nose or mouth, staying at least arms length away from those having cough and sneeze, and applying a handkerchief or tissue paper over mouth while you cough. The attitude needs to be changed through sustained behavioral change communication to be achieved through mass media campaigns and social mobilization.

This would be an integral part of both short term and long term media strategy to be dealt under communication.

4.2.6.4.2 Infection Control Practices in Health Care Settings

All health care facilities need to review their infection control practices. This should be important part in all planning documents. The planning for infection control practices should consider all points of human to human contact. Appropriate PPE should be decided and the personnel trained. A generic principle would be to stratify the personnel according to the risk profile. The risk stratification may change according to the environmental contamination and clustering of human cases. This would be decided by RRT on case to case basis. The table below is only indicative of risk profiles (assuming that the virus is not highly lethal) and levels of PPE to be used by various types of personnel/close household contacts of cases.

Identified Human Resource	**Risk Profile**	**Nature of PPE**
Paramedical staff involved in public health screening at the airports.	Medium Risk	Three layered surgical mask
Medical and nursing staff involved in clinical examination at airport and quarantine centre	High risk	Full complement of PPE
Immigration and other ground staff	Low risk	Three layered surgical mask
Passengers in the same row, three rows in front and tree layers behind a suspect case	Medium risk	Three layered surgical mask.
Medical personnel involved in sample collection	High Risk	Full complement of PPE and N 95
Health workers involved in surveillance	Low Risk	Three layered surgical mask
RRT during supervisory field operations	Low risk	Three layered surgical mask
RRT while attending suspect case in the community	Medium risk	Full complement of PPE
RRT while transporting suspect case in the ambulance	High risk	Full complement of PPE Driver to be provided three layered surgical mask.
Health staff involved in managing a suspect case at the health facility	High Risk	Full complement of PPE including N95 Respirator

Staff handling dead body of a suspect/ probable/ confirmed case	Medium Risk	Full complement of PPE/ Three layered surgical mask / N95 Respirator and gloves
Security personnel involved in quarantine, social distancing measures, law and order maintenance	Low risk	Three layered surgical mask
Personnel providing essential servies	Low risk	Three layered surgical mask.
Close household contacts of a suspect/ probable/confirmed cases	Low Risk	Three layered surgical mask
Note: Suspect / Probable / Confirmed cases should also be offered three layered surgical masks		

Isolation facility need to have negative pressure, air control (10-12 air changes per hour), double door entry and dedicated staff. If dedicated isolation room is not available, then patients can be cohorted in a well ventilated isolation ward with beds kept (at least) one metre apart. Such facilities need to be identified in state capitals. The districts need to plan for the scaled down version of isolation facility. All health care personnel should follow frequent hand wash and standard infection control practices as stipulated in the guidelines. All such facilities should adhere to strict waste management protocols with in the ambit of the Waste Management Rules.

The requirement of PPE, disinfectants (soap, alcoholic rubs, sodium hypochlorite and quaternary ammonium compounds or other locally available substitutes) would be worked out and procured.

4.2.6.5 Travel advisory

During this phase, India would issue travel advisory to its nationals to defer non-essential travel to the affected country.

4.2.7 Logistic support

MOHFW would enhance the stockpile of Oseltamivir for phase 5/6 from the existing one million to at least 10 million. This amount may need to be further enhanced if it decides for a containment strategy. For worst case scenario, the stockpile held by WHO would also be tapped. To prevent microbial resistance by indiscriminate use, it would continue to be made available through the public health system. For rapid access by the state governments, some stock would be decentralized to regional offices. State RRT teams would also have a deterrent stock to be taken along with them when proceeding to investigate a cluster.

Existing central stockpile of PPE sets, N-95 masks, three layered surgical masks would be reviewed and necessary procurement affected. The stock would be sufficient to manage at least 10,000 cases.

The State Government would also review their requirement of PPE sets, N-95 masks, three layered surgical masks and maintain appropriate stock.

4.2.8 Risk communication

The risk and actions required for risk reduction need to be conveyed to the community in clear and consistent terms. For adoption of the non pharmaceutical interventions at individual and community level, an attitudinal change is required, to be brought out through behavior change communication. There need to be short term and long term communication strategy to address this issue.

In short term the objective of the communication would be to create wide scale public awareness and sensitize communities to appropriate behaviors before pandemic. This will help in building public trust and will lead to community and societal compliance of these safe practices (this includes respiratory etiquettes, hygiene practices and treatment seeking behavior).

The aim of the long term strategy will be to instill safe practices, increase availability and access of essential services, timely reporting of cases and high level of compliance with regard to self care taking behaviors/ home based care.

The technical content of the messages would be vetted by the Joint Monitoring Group and Task Force in the I&B Ministry. The task force in I&B Ministry would facilitate operation of this strategy. UNICEF would assist in developing the strategy and the campaign. The material prepared by MOHFW in collaboration with WHO and UNICEF would be translated into vernacular languages and given to the State Governments.

4.2.9. Capacity Development

State Plans have been reviewed through Table Top Exercises. A critical gap identified was lack of planning for the pandemic phase 5/6. Most of the states had state plans for managing the human cases of avian influenza only. Those States that have revised the plans need to conduct mock drills to test the plans.

Capacity in human resources needs to be enhanced for investigating the outbreak, instituting public health measures and for clinical, respiratory and ventilatory management of the cases. MOHFW has already undertaken training of trainers of the RRTs of the states. The physicians have been trained in clinical management protocols. Some states have taken this training to the district level. This need to be replicated in all the states. To facilitate this, standardized training materials could be provided.

Phase 6 would require large number of volunteers for triaging and domiciliary care. The IMA, CISF, Civil Defence, NSS/NCC and Red Cross Volunteers would be trained in addition to the existing cadre of health workers.

To provide correct information and mobilizing communities, interpersonal communication training module and aids on pandemic influenza will be developed for all grass root health workers with partners/ UNICEF/WHO.

4.2.10 Psycho social issues

If the virus is lethal resulting in large number of morbidity and mortality, socio economic disruption would ensue with associated psycho social issues. The existing community based interventions planned for disaster settings would be used. Further, the response to an influenza pandemic will pose substantial physical, personal, social, and emotional challenges to health care providers, other emergency and essential service providers. Special programmes need to be planned to ensure that such category of workers are prepared to cope with, and recover from the social and psychological challenges of emergency work. National Institute of Mental Health and Neuro Sciences, Bangalore would be the nodal agency to plan and implement community based interventions and those specific for the emergency responders. Other institutions will also be identified for wider coverage.

4.2.11. Research

Department of Health Research (DHR) would be the nodal agency for basic, applied and translational research. Focus areas would be surveillance, drugs and vaccines. DHR would collaborate with research institutions for answering key research questions that is expected due to the unknown nature of the virus.

4.2.12. Public Private Partnership

MOHFW would explore areas in private sector that can contribute substantially to the programme delivery. Those concerning production and stockpiling of drugs, PPE, vaccines and diagnostic reagents would be of interest.

4.2.13. Non-Governmental Organizations

The community level actions such as triage, treatment, non-pharmaceutical intervention, risk communication and social mobilization could be implemented with support from non governmental organizations. The District Collector, based on the NGO resources available, could involve NGOs such as Red Cross, professional bodies like district units of Indian Medical Association, Indian Academy of Paediatrics etc. As for private voluntary Organizations, those already working in the district in social sectors can work synergistically with the district authorities.

4.2.14. Monitoring and Documentation

The situation would be monitored by the Joint Monitoring Group. Daily data generated would include the exit screening at various air ports, details of passengers quarantined, surveillance data on cluster identification, and laboratory report on those tested. Best practices and constraints need to be identified and documented.

4.2.15 International agencies

Basic strategic framework for action is based on WHO framework. MOHFW would continue to pursue the WHO advisories and seek co-operation for garnering information on situation in neighboring countries. UN agencies namely WHO and UNICEF have been contributing to the capacity development and continue to do so. Under the Indo-US agreement, our laboratories would continue to collaborate with CDC, Atlanta. In a worst case scenario, India may seek technical and logistic support from WHO.

4.3. Preparedness at State Level.

The Chief Secretary convenes a meeting of Secretaries of Health, Revenue, Home, Finance, Panchayati Raj, Local Self Governance, Public Works, Transport and Education Departments where the Health Secretary will apprise everybody of the Government of India Guidelines / Treatment Protocols and the State Control and Containment Plans. The role of each department would be outlined for communication to field level officers. The state level preparedness and response would thereafter be reviewed on a fortnightly or as and when required basis by the Chief Secretary. The reviews would go into setting up and training RRTs and physicians, stock of medicines, PPEs and other critical care equipment, public awareness, movement control/ restriction orders, etc.

Chief Secretary will call a state level meeting of District Collectors/ District Magistrates to outline the control and containment plan and ask them to prepare district action plans and micro plan. The meeting will be attended by concerned Secretaries, DHS and other technical officers.

State Level Officers of Department of Health, Revenue, Police, Home, PWD, Education and Panchayati Raj will ensure familiarization of their ground level staff in all aspects of preparedness, control and containment in accordance with the Action Plan and Guidelines.

Each State would develop a State Plan with the components listed from point no 4.2.1 to 4.2.14. as above. The plan would specify the Institutional mechanism envisaged under section-2. It would sensitize administrators on pandemic and actions to be taken in health

and beyond health. Liaison would be maintained with the Central Government and the neighboring States.

The surveillance for Influenza like illness would be done through the State IDSP. The medical colleges and other health institutions beyond IDSP would be involved to detect influenza like illness and that of severe acute respiratory illness. State Government would review the hospital preparedness especially in the context of isolation facility and critical care facility and they would be strengthened. State Government would ensure that all hospitals would have hospital disaster manual with sub sections on the pandemic preparedness, modalities for surge capacity and for continuity of operations.

The State would ensure that the teams trained by the MOHFW would train the district RRTs and physicians of the district and sub-district hospital, CHCs and PHCs on clinical management. Oseltamivir would be from the central stockpile whereas the State would factor in its own stock of PPE, N-95 mask and three layered surgical masks. State would plan large scale IEC campaign through print and visual media. The behavioral change for adopting hand wash and respiratory etiquettes and community based non pharmaceutical interventions would be popularized through social mobilization.

4.4. The District Level

The experience of organizing the control in disease outbreak / epidemic / pandemic situations has shown that it is necessary for the District Collector/ District Magistrate to assume over all coordination of the operations at the District level. Inherent to the success of the containment / pandemic mitigation operations are the activity planning and its execution at the grass root level. Familiarization of the key aspects and the preparedness measures would enable the district machinery to respond promptly and efficiently to the emerging situation. This requires that the important functionaries in the district, particularly the Chief Medical Officer, Superintendent of the Police, Chief Executive of the Panchayat Raj and Urban Local bodies and the Rapid Response teams are aware of their roles and responsibilities.

Every District will have an action plan that should have all the components from point 4.2.1 to 4.2.14 appropriate to the District level and the operational aspects from the forgoing sections.

District collectors will hold meetings in their districts with SP, CMO, Revenue, PWD, Forest, Education and Panchayati Raj/ Local Self Governance Departments where the District Action Plan on preparedness and response (in case of an outbreak)will be presented.

The role of District Collector is at **Annexure-IV.**

District Level Officers of Department of Health, Revenue, Police, Home, Environment and Forest, PWD, Education and Panchayati Raj will ensure familiarization of their ground level staff in all aspects of preparedness, control and containment in accordance with the Action Plan and Guidelines.

The Chief Medical Officer (CMO) of the District would be responsible for the health sector actions. The role of the CMO is at **Annexure-V.**

5. India affected: Operational Framework for Response

The response would be centered on the strategic approach discussed in section-2. Containment of small geographic clustering would only be attempted if the virus is found not transmitting efficiently in our population. Otherwise, mitigation measures would be followed that includes (i) Early detection of cases and their management, (ii) Implementing pharmaceutical (individual case management / vaccination) and non pharmaceutical interventions and (iii) risk communication campaign.

If the infection becomes rampant, non pharmaceutical interventions at individual and community level (especially social distancing measures) would be centre stage , large number of cases need to be triaged and managed at home or hospital and continuity of hospital services ensured.

5.1 Central Government

The NDMA and NCMC would review the situation and give directions for the line ministries to role out the action plan. The Inter Ministerial Task Force would review the policy related issues and Joint Monitoring Group, the technical issues. The JMG would review the situation on daily basis. EMR division would be the central coordinating unit in MOHFW. The control room in EMR division (011-23061469) would work on 24x7 basis. The Regional Offices of Health and Family Welfare would liaison with the State Governments for all related matters.

The Emergency Support Function (ESF) plan of the Ministry of Health and Family Welfare would be activated **(Annexure-VI).**

MOHFW would provide the updated guidelines to the states which would also be posted on its website (www. mohfw.nic.in). The surveillance would be enhanced to detect clusters through the IDSP. The clinical samples would be tested in identified central laboratories. Medical Practitioners and general public would be encouraged to report cases to the toll free number 1075 or to the outbreak Monitoring Cell of NICD at 011-23093401.

Important contact numbers of the MOHFW are given at **Annexure-VII**

MOHFW would conduct exit screening in all international airports, port and border check points. NICD would be the nodal agency for outbreak investigations. It would depute Central Rapid Response Team to investigate outbreak and assist the State for institution of public health measures. The role and responsibility of the Central RRT is at **Annexure- VIII.**

The point at which entry screening needs to be stopped depends on extent of spread in India. Extensive spread (multiple clusters, containment ruled out and mitigation measures opted) is an indication for stopping entry screening and to consider the exit screening option.

MOHFW would evaluate the stockpile of drugs and consumables and provide the necessary logistic support to the States. The risk communication material would be rolled out for print and visual media and would also be made available to the State in vernacular languages. The outbreak monitoring cell of NICD would monitor the outbreak situation.

IHR focal point would notify the case(s) to WHO under the International Health Regulations. ICMR would begin the work on developing candidate vaccine strain. MOHFW would monitor the situation and review the policy and strategy based on WHO advisory and country's own assessment.

5.2 The State Government

The Chief Minister would convene a meeting of the State Disaster Management Authority to review the response for the pandemic in health sector and sectors other than health. The action plan would be reviewed, gaps identified and filled.

The Chief Secretary would convene a meeting of Secretaries of health, revenue, home, finance, panchayat raj / local self governance, public works transport and review the requirements in each sector. The State would identify the extent of cluster formation, the morbidity and mortality. The capacity of the district(s) to contain/ control the outbreak would be assessed and additional support provided. If required, the centre would be requested for assistance. The State RRTs would be deployed. If the disease gets widespread, then mitigation measures including social distancing measures would be enforced. IEC campaign would focus on simple public health measures to prevent the disease (hand washing, cough etiquettes, staying away at least arms length from an affected person) and flu wise campaign (report to authorities about illness and seek treatment).

If the infection becomes overwhelming with severe morbidity / mortality, Chief Secretary would review the situation for continuity of essential services in the State. The crisis

management plan of NDMA would be activated. The individual sectors would be monitored for continuity of operations.

Daily updates / press releases would be issued. The identified spokesperson would brief the media.

The contact numbers of State Nodal Officers are at **Annexure-IX.**

5.3 District Administration

District Collector will hold meeting (s) in their respective districts with SP, CMO, Revenue, PWD, Forest, Education and Panchayati Raj/ Local Self Governance Departments where the District Action Plan would be reviewed and activated. The support required from the State Government would be listed out.

District Collector will also convene a meeting of Zilla Parishads and who in turn would organize meeting of Panchayat Samitis and Gram Panchayats to spread awareness and involve the PRIs in control and containment operations, especially in enforcing the social distancing measures and if required, enforcing quarantine and restricting the movement of population.

On receipt of information of a cluster, District CMO/ District Hospital would be alerted. The district RRT would be deployed. The district RRT would be reinforced with State RRT and if required the Central RRT. The RRT would be responsible for the outbreak investigations and instituting public health measures.

The strategy to be adopted depends on a number of technical parameters (such as epidemiological, Virological and clinical) and administrative parameters (availability of oseltamivir, geographic terrain, supply chain, human resource etc). The feasibility would be high if there is a single cluster within defined natural boundaries. Another indicator is the reproductive number; if one person infects two persons in 3 days (15 cases in 10 days) containment may be possible. If the spread is more than this, containment is less likely. District Collector would be informed of this by the Central / State RRT.

If the decision of the RRT is to contain the cluster, then cluster containment plan would be put into action. The operating procedure for the cluster containment is at **Annexure-X.** District Collector would need to identify key issues (logistics, legal, technical and resources) and address them for implementing containment operations.

If containment is not feasible due to efficient human to human transmission resulting in rapid spread and multiple clusters, social distancing measures (closure of schools, colleges, markets, cinemas and other places of public congregation) need to be enforced on a wider scale and movement of population restricted.

District Collector would roll out a district media plan for ensuring risk communication to the community to allay fears; disseminating public health messages through local channels, miking, distribution of the fliers / leaflets etc. This includes messages on cough etiquettes, hand washing, keeping arms length from others, self reporting of illness and seek treatment if complaining of influenza like illness.

At the grass root level, a micro-plan would be conceived specific to the actions listed above that would have the approval of District Collector. A model micro plan is at **Annexure-XI**.

If the outbreak is severe enough to affect the functioning of the district, the plan of NDMA would be enforced for maintaining essential services and continuity of operations.

District Collector would review situation on daily basis by meeting with all stake holders. The monitoring would reflect preparing and disseminate daily summary report on the operations. Finally he/she would monitor the expenditure and seek financial support, if required from the State/ Centre.

5.4 Components of response plan

5.4.1 Entry Screening

The entry screening would be done at the international airports, ports and border check points. Guidelines would be issued to the airlines **(Annexure-II)** through Ministry of Civil Aviation. A standard operating procedure would be followed for entry screening (**Annexure-III**). A person conforming to the case definition (**Annexure-XII**) would be isolated at the airport quarantine centre and then transferred to the identified isolation facility. It would be ensured that standard infection control practices would be followed.

5.4.2 Exit Screening

If India get affected and if there are large number of countries not yet having secondary spread of Influenza A H1N1, then Government of India could consider exit screening of its passengers. Standard operating procedure would remain as per Annexure-III, the only difference being the health screening counters would be placed before the check-in counters.

5.4.3 Surveillance

5.4.3.1. Event based surveillance

IDSP would be reporting cluster of ILI/SARI through its existing routine reporting system. The medical professionals will be encouraged, through press advertisements by MOHFW, to report such clusters seen during their practice to IDSP. The district and state units will inform the events to central unit. Even nil events would be reported.

5.4.3.3. Outbreak investigation

NICD would be the nodal agency for outbreak investigations. The outbreak monitoring cell of NICD would monitor the situation. If required, Central Rapid Response Teams would be deputed to assist the State in outbreak investigations and containment operations. The laboratories of the Central Government would provide laboratory support. Initially in phase five, a number of samples needed to be tested. As one moves into phase 6, the testing would be limited for the purpose of studying further change in the characteristics of the virus.

5.4.3.2. Active surveillance

If the decision of the health department is for cluster containment, then in the specified geographic region active house to house surveillance would be done as per the standard operating procedure at Annexure-X. A set of data collection tools is at **Annexure-XIII.**

5.4.3.3. Contact tracing

During cluster containment, efforts will be to trace all contact and put them on home quarantine and provide chemoprophylaxis. If the infection is wide spread, contact tracing would not be attempted. The guidelines for contact tracing are at **Annexure-XIV**.

5.4.3.4. Passive surveillance

If the disease spreads fast among the communities, then the hospitals and health units treating cases would report the morbidity and mortality. A set of reporting format is at **Annexure-XV.**

5.4.4 Laboratory Support.

The laboratory support would be provided by NIV, Pune and NICD, Delhi. If required the standby laboratories at NICED, Kolkata and RMRC, Dibrugarh would be put into operation. The contact details of the identified laboratories are at **Annexure XVI.** The samples would be collected, stored and transported as per the guidelines at **Annexure-XVII**.

With widespread disease, samples would be collected only from a few to study further change in the viral characteristics.

5.4.5 Pre Hospital care

If the infection is widespread, the trained volunteers from Government / private / NGO sector would triage the cases. The 'CRB' screening tool would be applied. The CRB screening tool for the community health workers is at **Annexure- XVIII**. The patients requiring hospital care would be referred. Others would be provided home care. The guidelines for providing home care are at **Annexure-XIX**. If the disease is wide spread, the state / district authorities may consider setting up fever clinics at the village / sub centre level where paracetamol / pheneramine maleate etc would be made available.

5.4.6 Hospital care

For all 21 international airports and the checkpoints, the identified isolation facility would be functional. During the initial clustering, if cluster containment is decided, then health facility identified with in or near to the containment zone would be activated. If the infection is widespread, then all health facilities in the community (PHC, CHC), District and Sub-District Hospitals, medical colleges, private nursing homes and hospitals would activate its disaster plan. Hospitals would implement actions for increasing the surge capacity depending upon the prevailing morbidity and mortality and the Central / State Guidelines.

If the rapid assessment indicates that the outbreak would overwhelm the existing facilities, then temporary hospitals identified during preparedness would be set up. Orders will be issued for private hospitals to accept cases. The hospitals under the administrative control of Ministry of Defence, Labour, Railways etc will also be used.

Absenteeism among hospital staff will be monitored. All leave would be cancelled. Reserve personnel could be employed to fill the gap.

The clinical management would be as per the protocol decided by MOHFW. The clinical management protocol is at **Annexure XX.** Patient care checklist is at Annexure **XXI.**

Initially oseltamivir is recommended to be given to all suspect cases and to provide chemoprophylaxis to immediate family and social contacts. Once the infection gets widespread but with less severity, then oseltamivir need to be provided only to those developing lower respiratory tract infection.

5.4.7. Dead body handling & disposal

In the unfortunate event of mass deaths due to influenza, the district administration would issue orders for mass burial / cremation (depending upon the religious sensitivity) especially when hospitals are flooded with unclaimed bodies. Temporary mortuaries would be established by all hospitals having to deal with large number of dead bodies.

Those hospital functionaries handling dead bodies should wear full complement of PPE. The social gathering for funerals and social customs of giving bath to the body etc should be discouraged.

5.4.8 Infection Control Practices

5.4.8.1. Infection control practices at Individual and community level

At the individual level, hand washing (especially after touching nose or mouth), staying at least arms length away from those having cough and sneeze and applying a handkerchief or tissue paper over mouth while you cough, would be followed. Visit especially to crowded places would be restricted.

5.4.8.2. Infection Control Practices in Health Care Settings

All health care facilities would follow strict infection control practices and hospital waste would be disposed of in accordance with the hospital waste management rules. All health care personnel should follow frequent hand wash. The commonly touched surfaces would be cleaned every day with sodium hypochlorite/ house hold bleach or quaternary ammonium compounds.

During initial clustering, the patients would be managed in isolation facilities. With substantial spread, patients may have to be cohorted in general wards, with beds separated at least one metre distance apart.

The use of personal protection equipments would be as per risk profiling. The risk profile would be reviewed depending upon the severity of the disease. PPE would be disposed of either by incineration (major institutions) or be burning or land fills (peripheral institutions).

The infection control guidelines are at **Annexure XXII.** The operating procedure for use of PPE is at Annexure**- XXIII**.

5.4.9 Pharmaceutical interventions

5.4.9.1 Drugs

The dosage schedule for oseltamivir chemoprophylaxis and treatment would be as given in para 4.2.5. If the decision is for cluster containment, oseltamivir would be moved to the affected area for providing mass chemoprophylaxis. The micro plan would specify the modality of distribution. At least 90 per cent of the population in the defined geographical limit of 0-5 km radius needs to be covered.

5.4.9.2 Vaccine

If the vaccine is available, then the priority groups (Health care workers, persons at extremes of age, those with co-morbid conditions, those providing essential services and those providing law and order) would be vaccinated. The existing framework available under National Immunization Programme would be put to use. If vaccines are available in plenty, (unlikely scenario) then the entire population would be vaccinated.

5.4.10. Non-pharmaceutical interventions

5.4.10.1. Community wide quarantine

Attempt would be made to stamp out the initial cluster (s) provided they are amenable to containment. In such situation, the micro plan would be operationalized. Law and order and strict perimeter control enforced, essential services are maintained and is sustained by other pharmaceutical and non-pharmaceutical interventions.

5.4.10.2. Home quarantine

Contacts of cases would be placed under home quarantine for a period of seven days. They would be self monitoring their health and reporting to the identified health authorities. Public would be made aware of the need to self quarantine through well managed risk communication strategy.

5.4.10.3. Isolation

Initially, patients would be isolated in identified facilities. With widespread infection, mild cases would be managed at home.

5.4.10.4. Social distancing measures

If the infection is widespread, then schools and colleges would be closed. Mass gatherings such as festivals; sporting, religious and political events would be prohibited. Funerals gatherings, in particular, needs to be discouraged. General public entry to airports and railway stations etc would be restricted. Public transportation would also be restricted.

In a worst case scenario, business work place, market closure and weekly markets would also be closed. Enough security personnel would be posted to maintain law and order.

The duration of such action cannot be pre decided, but may have to be 4-6 weeks.

5.4.11. Risk communication

The communication need to be specific to the situation. Even a few deaths in the initial clusters will create large scale panic. The communication would re-enforce actions to alleviate the fear among public. It would also be direct for the community to report

immediately when they start showing symptoms. The non-pharmaceutical interventions also need to be supported by a media campaign. At the grass root level, there would be social mobilization to sustain positive health seeking behavior.

Effective risk communication, supported by confidence in government authorities and the reliability of their information, may help mitigate some of the social and economic disruption attributed to the pandemic.

5.4.12. Psycho social issues

The guidelines issued by NDMA would be followed. The nodal institution, National Institute of Mental Health and Neuro Sciences, Bangalore along with other Central and State institutions will spear head the nation wide campaign for community based interventions.

5.4.13. Monitoring and Documentation

The situation would be monitored on day to day basis. The EMR division of the MOHFW would put up daily status reports. The recommendations of the Joint Monitoring Group and the decisions of IMTF would be documented. Data collected during the pandemic would be an important tool for decision making during and after the pandemic. At the end of the pandemic, the actions taken by the government and its impact would be reviewed and documented.

5.4.14. Media Briefing

The Press Information Bureau would ensure press releases and arrange for media briefing. the identified authority would only brief the media.

5.4.15. Maintenance of essential services

When the pandemic is at its peak, there would be work absenteeism from all services including health. Even the essential services would be crippled. The crisis management plan of the NDMA would be followed for continuity of operations required to maintain essential services.

Annexures

Work allocation of various divisions / sub ordinate offices of MOHFW

1. EMR Division, Dte GHS / MOHFW will be responsible for:

- Adhoc Programme Management : plan and develop critical elements till regular programme takes over.
- Conducting table Top Exercises to review Central/ State Plan.
- Capacity Development : Training of Rapid Response Teams and Physicians on clinical management.
- Strengthening infrastructure: Bio Safety Labs, critical care
- Stockpile of Oseltamivir and PPE
- Arranging meetings of the Joint Monitoring Group/ Crisis Management Group.
- Response
  - Overall co-ordination.
  - Deployment of the multi-disciplinary Rapid Response Teams (RRTs).
  - On site supervision and review of the containment operations.
  - Coordinating with other Central Ministries/ Departments on operational aspects.
  - Coordinating with the State/ District authorities.
  - Providing logistic support to the state(s) in terms of manpower and material resources (drugs, personal protective equipment, critical care equipments etc).
  - Providing contingency financial support.
  - Monitoring the situation on daily basis and putting up daily status report.
  - Taking scale back decision on the containment operations.
  - Facilitating efforts of Ministry of Information and Broadcasting in risk communication.
  - Media briefing.

2. Public Health Division, MOHFW

- Planning for Preparedness and Response
- Developing and implementing National Pandemic Preparedness Programme.
- Adhoc Budgeting
- Issue of Administrative Approval and Financial Approval.

3. International Health Division / Airport Health Organizations

- Screening at International Airports/ Ports/ Border Crossings

4. National Institute of Communicable Diseases

NICD would be the nodal agency for surveillance, outbreak investigations and monitoring. It will:

- Provide members for RRTs.
- Epidemiological and Virological Surveillance for Influenza Like Illness (ILI) / Severe Acute Respiratory Illness(SARI)
- Provide laboratory support.
- Maintain stockpile of drug and PPE.
- Support training.
- Notify laboratory confirmed human cases of Influenza A H1N1 or that caused by any novel virus to the WHO under International Health Regulations (IHR).
- Develop technical guidelines and documentation of outbreaks including best practices and gaps.

5. ICMR

- Provide members for RRTs.
- Provide laboratory support for confirmatory diagnosis
- Genomic and phylogenic characterization.
- Candidate vaccine strain development
- Share strains with WHO (under MOHFW approved protocol).
- Research

6. **Central Government Hospitals**

- Provide members for RRT
- Support training.
- Provide clinical management.

7. **Regional Offices of Health and Family Welfare**

- As representative of MOHFW, Liaison with State Governments / UTs for prevention, preparedness and response to pandemic influenza.
- Support EMR division, Dte GHS with logistic support
- Provide logistic support for the Central Rapid Response Team.

8. Central Government Health Scheme

- Provide doctors and nurses for airport/ port exit/ entry screening
- Provide doctors for clinical management.

Guidance for Airlines.

1. Enquire about illness details from passengers and crew and enter details in the general declaration of health for submission to Airport Health Officer.
2. In case of an ill traveler on board the flight
    - Place the face mask to the sick traveler and passenger seated on the same row, three rows in front and three rows behind.
    - Give advance intimation to airport manager/APHO for arranging the examination of ill traveler and screening the passengers seated in the same row, 3 rows in front and 3 rows behind.
    - Inform sick traveler and contacts, to contact the airport health staff.
    - The co passengers would be allowed to leave once they fill up the screening proforma. They would be advised to report to the health authorities.

3. Airline ground staff should be deputed to attend to needs (baggage, immigration etc.) of the sick traveler and contacts in case they are referred to medical facility.
4. Inform APHO about sanitization measures undertaken for the aircraft or else ask APHO to assist for sanitization.
5. Inform port of embarkation about the sick traveler for taking measures as required for their contacts in country of origin.

Standard Operating Procedure for Entry Screening and Exit Screening

Entry Screening

Health Screening proforma would be made available to all airlines by MOHFW. The airlines would make this proforma available at embarkation point. The passengers would fill the proforma in flight along with arrival card. The proforma would also be made available at the arrival hall by APHO.

The health desks would be set up before the immigration area. A space of 1sq m would be required for the desk and at least five metre in front of it for maintaining que. The desks would be separated by at least a meter. An approximate bench mark would be one desk per 1000 passenger.

In addition there would be an examination room, a small space for storage of equipments and consumables and a space of 5m x 3m for isolating a suspect case.

All health staff, immigration staff and other ground staff in the arrival area would wear three layered surgical mask. They would be sensitized on Influenza A H1N1, the infection control practices and wearing and disposal of the mask. Frequent hand wash would be encouraged.

1. At the Health Desk

- The doctor would examine the health screening card submitted by the travelers including the crew.
- Ask for any history of travel to affected area/country. Ensure that the passenger has filled up all the items, especially the complete address and contact number.
- The body temperature would be recorded. If a febrile and healthy, the doctor would stamp the card.
- If a passenger coming from an affected country gives history of fever and / or cough in past 10 days , the temperature would be recorded, he/she clinically examined and if need be, IDSP consulted on the requirement for quarantine.
- If already febrile, then duty Nurse would put the face mask on suspect ill traveler. He/she would be subjected to detail clinical examination.
- Query of the passenger, if any, on part B of the proforma (information on reporting if subsequently develop symptoms), would be entertained by the doctor.
- Use alcoholic hand rub / sanitizer / soap an water for frequent hand wash.

2. Examination of suspect case:

- The suspect case would be made to wear three layered surgical mask.
- The examining doctor will use full complement of PPE.

- H/o fever, cough, breathing difficulty etc would be elicited . The travel history would be taken to see whether the passenger conforms to the case definition of a suspect case.
- Perform hand wash before and after clinical examination.
- Perform clinical examination and record the findings.
- Note the seat number of the ill traveler and details of the passengers sitting in the same row, three rows in front and three rows behind.
- Transfer the patient to identified isolation facility/ quarantine centre.
- Disinfect medical equipment/ device used for clinical examination.
- The ambulance driver would use three layered surgical mask and the health worker accompanying the passenger would use full complement of PPE.
- Aerosol generating procedures should be avoided while shifting the passenger.
- Sanitize all belongings of the ill traveler.
- Look for sickness details of traveler submitted in general declaration of health of the airlines concerned.
- Call the airlines staff for assistance and the airlines station manager for desanitizing the affected area.
- Desanitize ambulance and all infected area/articles.
- Dispose the PPEs properly.

1. At the Immigration desk

- Immigration desk to use three layered surgical mask.
- Would follow frequent hand wash with alcoholic rub/ soap and water.
- Please ask for the health screening proforma from the traveler.
- Note the details in the card and ask for any travel / transit to any affected country. (as per the update)
- If you note for any traveler who has travelled to affected area and has not mentioned in the card then refer the passenger back to health counter
- If health clearance form is signed by medical officer and there is no travel to affected area; then give the immigration clearance as per procedure and keep the health screening card for submission to APHO at the end of the shift duty.
- Also ensure that the arrival card is also duly filled up especially for the address and contact number in India.
- All health screening forms collected during the immigration shift should be cross-checked from the immigration data so that it can be ascertained whether all the passengers have been cleared by immigration only after proper health screening.
- Deposit the health screening cards with APHO.

The same SOP would be followed for exit screening. The only difference would be that the health desks would be at the departure wing before the check-in counters.

Role of District Collector / Magistrate

Preparedness Phase

- Hold meetings with District functionaries including that of Panchayat Raj / local self Governing Institutions.
- Develop district action plan. This would include:

    - IDSP and other institutions in the district that can be encouraged to report clusters of Influenza.
    - Details of trained RRT along with Contact numbers Number of RRTs that can be set up in the District.
    - Lab linkages to be established.
    - listing of health facilities available in the District with details of medical personnel, beds, ambulances, life support and critical care equipment; Facilities that can be converted into isolation facilities, temporary hospitals, temporary mortuaries.
    - details human resource other than the existing work force: (i)retired medical personnel, nurses and paramedics. (ii) Volunteers –Civil Defence, Health, Red Cross (iii) NGOs (iv) District functionaries of the Professional bodies.
    - Police force available in the District.
    - Details of the nearest military/ paramilitary unit. Nearest airport, helipads with co-ordinates, rail head, international border entry points.
    - Availability of medicines and PPEs
    - Availability of vehicles for transportation of RRTs, drugs etc.
    - Training of the teams, method and timeframe of deployment.
    - legislative provisions required for ordering restricted movement, closure of schools, colleges, markets, cinemas and other places of public congregation.
    - legislative provisions required for enforcing quarantine of the infected areas and requisitioning/ commandeering vehicles, equipment and materials.

- Familiarize all concerned with key aspects of the action plan and guidelines and establish nodal points in various departments.
- Test existing plan through Table Top Exercise/ Mock drill.
- Finalizing and approving the micro plan both for human health and beyond health sectors including availability of medical manpower, mapping of health facilities, assessment of life support equipment, medical supplies including PPE, arrangement for collection and transportation of samples, setting up isolation facilities etc.
- Planning for implementing quarantine, social distancing measures (closure of schools, colleges, markets, cinemas and other places of public congregation) and restriction of movement of population. For this purpose, the DM must check on and use he legislative framework available in particular States. Draft orders (under section 144 CRPC) may be kept ready in case response is to be urgently activated.

- Identifying the security personnel required to implement restriction of movement orders and, if necessary, requisition additional force / assistance.
- Ensuring that the infrastructure for clinical management including critical care equipment as well as trained manpower for the surveillance, drawing of samples etc is in place. Maintain supply lines and reserves of required material (PPE, drug-oseltamivir).
- Keeping handy the contact details of the designated laboratory for confirmation of Influenza A (H1N1) cases in their respective States and regions.
- Making necessary arrangements for protecting those at high risk.
- Seeking assistance from the State/ Centre to fill gaps in the micro plan and ensuring that financial requirements are met.
- Co-ordinate with the concerned officers of the State Government and District Collectors of neighbouring districts and keep them appraised of the situation.
- Preparing a media plan and IEC materials (in consonance with the materials prepared by the Department of Health). Using local print/ visual media to inform the community about the risk and actions for risk reduction.
- Briefing the media through an authorized contact point to ensure that correct information s passed on to the general public and the district officials involved in the operations.
- Keeping a watch on the news reports as well as daily briefing s of the MOHFW and if required scorching all rumours relating to the disease or its spread.
- Plan for maintaining essential services and continuity of operations.
- Assess budget requirements and identify the source.

Response Phase

- On receipt of information of a suspect case, alert District Medical Officer/ District Hospital. A district team would be deployed to take samples.
- On confirmation of a case, decide on whether home quarantine or isolation is required. Also if a number of cases are reported, immediately identify the cluster with surrounding natural and man made boundaries.
- Notifying the containment zone and the buffer zone under the Epidemic Act or relevant law (if containment operations / social distancing measures are to be implemented).
- Communicate the name/ geographic location of epi-centre of the outbreak to the State and Central nodal agencies.
- Perimeter Control - Restricting movement of persons into and out of the containment zone to unaffected area(if containment strategy is opted. Only authorized persons to be permitted inside the infected/ surveillance zone.
- Initiating and enforcing the containment operations against a time line.
- Trace contacts and provide chemoprophylaxis to them as per guidelines.
- If containment is not feasible due to efficient human to human transmission resulting in rapid spread and multiple clusters, enforce social distancing measures (closure of schools, colleges, markets, cinemas and other places of public congregation) and restrict movement of population.

- Ensuring risk communication to the community to allay fears; disseminating public health messages through local channels, miking, distribution of the fliers / leaflets etc. This includes messages on cough etiquettes, hand washing, keeping arms length from others, self reporting of illness and seek treatment if complaining of influenza like illness.
- Reviewing situation on daily basis by meeting with all stake holders.
- Prepare and disseminate daily summary report on the operations.
- Monitor the expenditure and seek financial support, if required from the State/ Centre.

3.1.3 Post Response Phase

- Prepare for the next wave of the pandemic.
- Ensure documentation of lessons learnt.

Role and responsibility of Chief Medical Officer of the District.

CMO is responsible for all health sector actions in the district. This includes essential components of the operation plan namely surveillance, early detection, containment operations (if recommended), hospital capacity, risk communication and maintaining health services during the period of the pandemic .

Preparedness Phase:

- Hold meetings with district health officials and the medical officers of the district hospital and peripheral units and sensitize them on influenza pandemic. Be informed on the technical matters including guidelines issued by the MOHFW.
- Assist the DM with technical inputs. If required, contact DHS / Focal point in MOHFW
- Prepare a list of contact numbers of all important functionaries.
- Check the materials / facilities in district health office, district hospital, CHCs and PHCs under lock and key. Prepare a list of authorized persons (with contact details) holding these keys and the alternate person who has been empowered to operate if the first person is not available.
- Review district IDSP functioning and strengthen it to report clustering of influenza like illness and severe acute respiratory illness. It would be made mandatory for Non-IDSP institutions in the district to report the same. Nil reporting is also to be enforced.
- Identify the team for sample collection and modality for storage and transportation. Send a mock sample to identify and rectify the gaps.
- Identify a hospital to function as an isolation facility at district and sub district level. List all other available hospitals and health centres in Government and private sector. Ensure that all hospitals have disaster plans. Instruct hospitals to attach a sub plan / SOP for increasing the surge capacity and ensuring continuity of operations.
- Review the bed capacity and work out modalities for increasing the surge capacity. List facilities that can be used for making temporary hospitals. Plan for converting them to temporary hospitals with requisite manpower and medical supplies.
- Train doctors in clinical management. Ensure that the doctors at PHC and CHC sensitize the grass root level workers.
- Develop micro plan with the RRT for the containment operations (if recommended). Ensure mobilization of medical officers, health assistants and health workers for this activity.
- Plan for vehicle logistics for movement of medical teams, transfer of patient etc.
- Identify the gaps in material requirements (drug, PPE) and procure them.
- Raise a cadre of 200 volunteers (at least one volunteer in every village) who could be trained in triage and domiciliary treatment. The volunteers can be raised from Civil Defence Volunteers, Red Cross, retired health workers. NCC, NSS etc.
- Procure / translate the communication material into vernacular / local dialect and

- Plan for continuity of operations in health sector taking into account an anticipated 40-50 per cent work absenteeism.
- Post the financial requirements for implementing the health sector plan to the district collector.

Response Phase

- Notify the disease.
- Implement the health components of the district plan.
- Collect sample and send it to identified laboratory.
- Assess the clustering of cases, number and the geographic spread .
- If containment strategy is advocated, implement the micro plan and supervise the containment operations. If not, assist the district administration in mounting mitigation measures.
- Conduct field visits on daily basis. Ensure that the requisite quantity of anti viral and PPE are available.
- If large number of cases are there, then do triage, provide domiciliary care to the less severe cases and ensure treatment of severe cases in identified hospitals. If required activate the hospital disaster plan, increase the surge capacity (deferring elective procedures, discharging non-emergency cases, convert hostel buildings, floor beds etc).
- Implement IEC activities for mitigating the spread using local TV Channels, miking etc, interpersonal communication). Monitor the IEC activities and pitch up the scale if required.
- Keep the District Collector apprised of the health sector activities.
- Project the requirement of funds to the district collector.
- If there is substantial work absenteeism, then recruit from identified available list of human resource.

Post Response Phase.

- Prepare for the second wave.
- Continue IEC activities.
- Documentation of the final report including the lessons learned.

Emergency Support Function Plan of MOHFW

ESF-01

D.32020/9/2002-EMR
Government of India
Ministry of Health & Family Welfare
(Department of Health)

ORDER

Subject:- Emergency Support Functions (ESF) Plan 2008

Emergency Support Functions (ESF)

1. The Ministry of Health & F.W. will provide emergency support to the Ministry of Home Affairs in the event of natural or man-made disasters in regard to the following:-

(a) To identify likely diseases and medical health disorders associated with disasters.
(b) To set up quick response medical and public health teams.
(c) To identify likely medicines and medical support, stores and equipment required.
(d) To maintain rate contract etc. for inventory and assessment of availability of requirements including portable equipments at different locations.
(e) Identify laboratories which can be used for analysis.

Nodal Officers

1. The details of Nodal Officers and the Alternate Nodal Officers for the purpose of coordinating Emergency Support Functions with Ministry of Home Affairs are as under:

Nodal Officer

Name/Designation/Office Address/Residential address	Phones with STD code e-mail
Shri Vineet Chawdhry	(O) 011-23062579
Joint Secretary, Ministry of Health & F.W.	(R) 011-26113750
Room. No. 147-A, Nirman Bhavan, New Delhi-110011	(FAX) 011-23062579
Residential Address:	9868829991(Mobile)
D-I/E-39, St. Martin Marg, Babu Dham, New Delhi	(e-mail) vineetchawdhry@hotmail.com

Alternate Nodal Officer

Name/Designation/Office	Phones with STD code

Address/Residential address	e-mail
Dr. P. Ravindran	(O) 011-23061302
Director, Emergency Medical Relief	(R) 011-23073467
Dte.G.H.S. Room No. 555/A, Nirman Bhavan, New Delhi-110011	(FAX) 011-23061457
Residential Address:	(Mobile) 9868619799
C-303,Bhrigu Apatments Sector-9, plot 4; Dwarka I	(e-mail) diremr@nic.in

Crisis Management Committee (Health) & Quick Response Team (QRT) at the HQs.

2. The Ministry has set up the Quick Response Team (QRT) at the HQs. for emergency response and the details of the Team and the task assigned are given in the attached Form No. ESF-02.

3. The Ministry has designated the following Field Offices for providing Emergency Support Functions:-

   Field Offices (Details of designated officers) as per ESF-04 enclosed.

4. The details of the Designated officers in the above field offices who will be coordinating the emergency support functions are given in the attached Form No. ESF-04.

Quick Response Teams (QRTs) at the Field level

5. The Ministry has set up Quick Response Teams (QRTs) at the field levels for emergency response and the details of the Head of Institutions deputing the Teams/ nominating members for the teams and the task assigned are given in the attached Form No. ESF-03.

Resource Inventory

6. The Ministry will make available manpower and material logistics and services:-

Material/ Description	Essential drugs and devices [consumables and non consumables]*
Equipment/ Description	Essential and life saving equipment *
Manpower	Specialists in all requisite fields pertaining to medical relief and public health*
Services	Medical Relief and public health

* Depends upon the type of disaster.

7. The details of the above resources are given in the attached Form No. ESF-05 & 06

8. The aforesaid resources (manpower, services, material and equipment) for accomplishing the Emergency Support Functions assigned to this Ministry for

immediate emergency medical relief would be mobilized adequately from the existing resources of Central Govt.

9. Any additional requirement would be met by the Central Govt. Medical Stores Depots as per laid down procedures.

10. This Ministry has issued authorization vide Order No. D.32020/9/2002-EMR, dated the 1st October, 2008, at form No. ESF-07 in favour of the nodal officers and the designated officers to deploy the resources in the event of disasters and in accordance with the requests received from the Ministry of Home Affairs.

11. The Emergency Support Functions (ESF) Plan has been last updated on 1st October, 2008.

Authorized signatory
Name: (Vineet Chawdhry)
Designation: Joint Secretary to the Govt. of India.
Date: 1st October, 2008

To

The Joint Secretary (DM-I)
National Disaster Management Division
Ministry of Home Affairs
North Block, New Delhi

Form No. ESF-02

D.32020/9/2002-EMR
Government of India
Ministry of Health & Family Welfare
(Department of Health)

Crisis Management Committee (Health) & Quick Response Team (QRT) at the HQs.

Name/Designation/Office Address/Residential address	Phones with STD code e-mail
Team Leader	(O) 23061863;
Shri Naresh Dayal	(R)24107220
Secretary (Health & FW)	(Fax) 23061252
Ministry of Health & F.W.	
Nirman Bhavan, New Delhi	(e-mail) ndayal@nic.in
Member-1	
Dr. R.K. Srivastava	(O) 23061438 &23061063
Director General of Health Services	*(R) 26880102*
Nirman Bhavan, New Delhi	(Fax) 23061924
	(e-mail) dghs@nic.in
Member-2	
Dr. Shiv Lal	(O) 23913148
Special DG (PH) & Director, National Institute of Communicable Diseases	(R) 24102398
22, Sham Nath Marg, Delhi	(Fax) 23928700
	(e-mail) dirnicd@bol.net.in
Member-3	
Dr. V.M.Katoch	(O) 26588713
Director General	(Fax) 26588713
Indian Council of Medical Research	(e-mail)
Ansari Nagar, New Delhi	
Member-4	
Shri Vineet Chawdhry	(O) 011-23062579
Joint Secretary, Ministry of Health & F.W.	(R) 011-26113750
Room. No. 147-A, Nirman Bhavan, New Delhi-110011	(FAX) 011-23062579
Residential Address:	(Mobile) 9868829991
D-I/E-39, St. Martin Marg, Babu Dham, New Delhi	(e-mail) vineetchawdhry@hotmail.com
Member-5	
Dr. R.C.Deka	(O) 26588000

Director, All India Institute of Medical Sciences	(R) 26594500
Ansari Nagar	(Fax) 26588663 and 26588641
New Delhi.	(e-mail) director@aiims.ac.in
Member-6	
Dr. P. Ravindran	(O) 011-23061302
Director, Emergency Medical Relief	(R) 011-45639559
Dte.G.H.S. Room No. 555/A, Nirman Bhavan, New Delhi-110011	(FAX) 011-23061457
Residential Address:	(Mobile) 9868619799
C-303, Bhrigu Apartments, Plot -4 Sector-9, Dwarka Phase-I, New Delhi-75	(e-mail) diremr@nic.in
Member-7	
Dr. D. Kanungo, Addl. Director General	(O) 26101268
Central Govt. Medical Stores	(R) 95-129-2370094
R.K. Puram, New Delhi	(FAX) 26189307
Residential Address:	(e-mail) dkanungo@nic.in
Nityakshetra, 294,Sector-21D, Faridabad-	
121001	

The Crisis Management Committee at Hqrs. or the Officer(s) designated by Secretary(H&FW) would be responsible for ;

- Coordinating with the nodal Ministry and other Ministries;
- Planning and providing advocacy and support to the nodal Ministry and to the affected state to manage the disaster.
- Dealing with health aspects of the disaster, damage assessment and administrative decisions pertaining to health sector, implement the requisite interventions, support the state in terms of material and manpower logistics and to monitor the situation
- Reviewing the ESF plans from time to time.

For Biological disasters, as the nodal Ministry, it would coordinate with all other ministries and also provide advocacy and support to the State for containment of the disease outbreak. It would also constitute a Technical Advisory Committee depending upon the type of disaster to provide technical inputs.

The HQ Quick Response Team may include members from the Crisis Management Committee.

Form No. ESF-03

D.32020/9/2002-EMR
Government of India
Ministry of Health & Family Welfare
(Department of Health)

Quick Response Teams (QRT) at the Field Level

The health sector QRTs to be deputed to the field depends upon the nature and extent of disaster including diseases outbreaks. The institutional nodal officers as listed below would be deputing the members of QRTs depending upon the type and extent of disaster and would be coordinated by EMR division of Directorate General of Health Services.

Field Offices:

Name	Office	FAX	Residence	Mobile
Dr. Shiv Lal Special DG (PH) & Director, NICD	23913148	23922677	24102398	9810609970
Dr. V.M.Katoch. Director General Indian Council of Medical Research New Delhi.	26588713	26588713		
Prof. R.C.Deka Director, AIIMS	26588000	26588663	26594500	9868397464
Dr. Jagdish Prasad Principal and Med. Supdt. Safdarjung Hospital	26190763 26165032 Ext. 282	26163072	24675549	9810213034
Dr. N.K. Chaturvedi Medical Supdt., Dr.RML Hospital	23747027 23404470	23361164 23365081	23382727	9811101704
Prof. G.K. Sharma, Director, LHMC	23343984	23340566	23344938	9818311762
Dr. B.S.Jain Director, CGHS	23062800			
DR. D. Kanungo Addl. Director General, Medical Stores Organization, R.K. Puram, New Delhi.	26101268	26189307	95-129-2370094	9818394894

The task assigned are:

1. To identify a list of officers along with their contact numbers, and provide such list to the Director (EMR).
2. To mobilize identified members of the Rapid Response Team at short notice.
3. To mobilize drugs, disposables, equipments from its in-house resources at short notice to be transported to disaster site for emergency medical relief.
4. To implement the decisions taken by HQ. Crisis Management Committee or the Officer(s) designated by Secretary (H&FW)

Task specifically assigned to Medical Stores Organization in addition to the above:

1. To keep Rate Contract for all essential drugs, consumables and non consumables.
2. To procure the medical stores assigned to it following emergency procurement procedures.

Form No. ESF-04

D.32020/9/2002-EMR
Government of India
Ministry of Health & Family Welfare
(Department of Health)

List of Designated Officers of Field/Regional Offices

No.	Field office address	Name/ Designation/ Residential address	Telephone		
			Office	FAX	Residence/ mobile
1	Regional Office for Health & F.W., IIIrd floor, B-Block, Kendriya Sadan, Sultan Bazar, Hyderabad-500095	Dr. S.M. Mathur Regional Director I/C	040-24657923	040-24657923	09490189314
2	Regional Office for Health & F.W., D-49, Subash Marg, C Scheme, Jaipur-302001	Dr. K.K.Mathur Regional Director	0141-2236845	0141-2236818	0141-2395727 09414716602
3	Regional Office for Health & F.W., Head Quarter Geomin Bldg. Neelam Chowk, J&K State, Srinagar-190009	Dr. (Mrs.) S. Wafai Regional Director	0194-2470609	0194-2430121	0194-2430120 09419409331
4	Regional Director for Health & F.W. Regional Office for Health & F.W, 9th Floor, Kendriya Bhavan, Aliganj, Lucknow-226024	Dr. S.K. Choudhary Regional Director	0522-2332399	0522-2325268	0522-2710229 09450004518
5	Regional Office for Health & F.W., A-2A, Rajaji Bhawan, Besant Nagar, Chennai-600090	Dr. Palani velu Regional Director I/C	044-24919232	044-24911401	04424332277 09444441144
6	Regional Office for Health & F.W., 5th Floor, Indra Bhavan, Bailey Road, Patna-800001	Dr. P.Srivastava Regional Director I/c	0612-2203711	0612-2202677	0612-2523919 09934304939
7	Regional Office for Health & F.W., 84/2, Parvati Shaakarnagar-II, Darpan Bldg. 1st Floor, Pune-411009	Dr. S.B.Nadoni Regional Director	020-24226271	020-24225673	09422004579
8	Regional Office for Health & F.W., Anand Estate, Industrial Estate	Dr. G.C.Sahu Regional Director	079-22740714	079-22742447	079-22867904 09879050907

	Corner, Bapunagar, Ahmedabad-380024				
9	Regional Office for Health & F.W., IInd floor, F-wing, Kendriya Sadan, Kormangala, Bangalore-560034	Dr. Anbhazagan Regional Director	080-25537310	080-25539249	080-41678053 09886845962
10	Regional Office for Health & F.W., Purjor House, 2nd Floor, Indira Press Complex Zone-I, Maharana Pratap Nagar, Bhopal-462011	Dr. R.Sisodia Regional Director	0755-2553374	0755-2553374	09425010014
11	Regional Office for Health & F.W., BJ-25, BJB Nagar, Bhubaneshwar-751014	Dr. P.K. Mahapatra Regional Director	0674-2431708	0674-2431904	0674-2395736 09937233846
12	Regional Office for Health & F.W.,20, Gariahat Road, Kolkata-700019	Dr.A.K. Chakravarty, Regional Director	033-23355378	033-23355380	033-24844808 09432669808
13	Regional Office for Health & F.W., Kendriya Sadan, IV th Floor, Sector-9A, Chandigarh-160017	Dr. Amarjeet Kaur I/c Regional Director	0172-2741558	0172-2741558	09872355526
14	Regional Office for Health & F.W., Din Dayal Upadhyay Hospital Complex, Shimla-171001	Dr. Amarjeet Kaur I/c Regional Director	0177-2653649	0177-2651978	09872355526
15	Regional Office for Health & F.W., Meads Contonment, Thiruva-nanthapuram- 695034	Dr. Kalawati Regional Director	0471-2322710	0471-2322710	O9656184162
16	Regional Office for Health & F.W., Dhanketi, Shillong 799303	Dr. M. Palit Regional Director	0364-2226843 2226689	-	0364-2410402
17	Regional Office for Health & F.W., Sangrila, Uripok Road, Imphal-795001	Dr. L. Ashananda Singh Regional Director	0385-2410662	0385-2413904	0385-2227615

The task assigned are:

1. To coordinate with the concerned State Govts. and to provide information on disaster situation to Central Govt.
2. To coordinate with the State Govt. and to arrange for transportation, boarding lodging and logistics support to the Central Health Team deputed to the field.
3. To coordinate logistic support provided by the Central Govt.

Form No. ESF-05 & 06

D.32020/9/2002-EMR
Government of India
Ministry of Health & Family Welfare
(Department of Health)

Resource Inventory

S.No	Men/Material/equipment/services/ description/ specification	Qty in Nos.	Qty. in wt./ vol.	Availability Location
1.	Manpower	*	*	Specialists in all requisite fields pertaining to medical relief would be drawn from: 1. AIIMS, New Delhi 2. Dr.RML Hospital, New Delhi 2. Safdarjung Hospital, New Delhi 3. LHMC, New Delhi 4. CGHS, Dte GHS (medical manpower from polyclinics and dispensaries spread all over the country would also be utilized in medical relief activities if the situation warrants. For prevention and response for public health emergencies, public health experts from the following institutions would be drawn: 1. NICD, New Delhi and its branches, 2. ICMR, New Delhi and its Regional Centres 3. All India Institute of Public Health., Kolkata
2.	Services	*	*	Medical Relief & Public Health
3.	Material	*	*	Essential drugs, consumables and non consumables from Central Govt. Medical Stores
4	Equipments	*	*	Essential medical equipment as per requirement

* Depends upon extent and nature of emergency.

The manpower and material logistics would be coordinated by Director (EMR).

Addresses and contact Nos. of Medical Stores Depots under Dte.G.H.S. for medical relief supplies

1. Addl. Director General (Medical Stores), Dte.G.H.S., West Block-I, R.K.Puram, New Delhi-110022 (Tel.No. 26101268)
2. Asst.Director General, Medical Stores Depot, Quatab Enclave, New Delhi (Tel.No. 26862814)
3. Asst.Director General, Medical Stores Depot, Post Box-84, Guwahati 781001 (Tel.No. 2545214)
4. Asst.Director General, Medical Stores Depot, (Tel.No. 2260277, 2262355)
5. Asst.Director General, Medical Stores Depot, Post Box No. 8, Karnal 132001, Haryana (Tel.No. 2582922)
6. Asst.Director General, Medical Stores Depot, Mumbai Central, Mumbai-400008 (Tel.No.23082091, 23082092)
7. Asst.Director General, Medical Stores Depot, Clyde Row, Hastings, Kolkatta (Tel.No.033-22233593)
8. Asst.Director General, Medical Stores Depot, 37, Naval Hospital Road, Chennai-600003(Tel.No. 2582922)

9. Central Research Institute, Himachal Pradesh 173204, (Tel.No. 01792-272059, 272060)

Laboratory Support

The following laboratories have requisite facilities to identify the causative agent in infectious disease outbreak. The RRT at the HQ/ field would decide to which laboratory the clinical samples are to be transported:

2. National Institute of Communicable Diseases, 22-Sham Nath Marg, Delhi – 110 054 (Telephones: 011-23913148, 011-23971272 Fax: 011-23922677)
3. National Institute of Cholera & Other Enteric Diseases, Kolkata (Diarrhoeal Diseases & other enteric pathogens). (Telephone No. 033-23501176, 033-23508493)
4. Department of Microbiology, AIIMS, (Virology). (Telephone No.011- 26593288, 011-26516181)
5. National Institute of Virology, Pune (Viral Diseases excluding HIV/Polio) (Telephone No. 020-6124386)
6. Enterovirus Research Centre, Mumbai (Polio) (Telephone No. 022-4148750)
7. Vector Control and Research Centre, Pondicherry (Vectors, Filariasis) (Telephone No. 0413-372041)
8. Centre for Research in Medical Entomology, Madurai (Vectors & other vector borne diseases) (Telephone No.0452-530746)
9. Defence Research Development Establishment, Gwalior (Telephone No. 0751-341550, 0751-340730).

Contact Numbers of Functionaries in MOHFW, its attached and sub ordinate offices

S.No.	Name and Designation	Tele (Office	Residence	Mobile
MOHFW; GOI				
1.	Sh. Narsh Goyal Secretary (H&FW)	23061863 23063221		
2.	Sh. V.Ventatachalam Additional Secretary (Health)	23061887		
3.	Sh. Vineet Chawdhry, Joint Secretary MOH&FW	23062579	26113750	9868828687
Directorate General of Health Services				
1.	Dr. R.K. Srivastava DGHS	23061348		
2.	Dr. Shiv Lal, Special DG & Director, NICD	23913148		
EMR division				
1.	Dr. P.Ravindran, Director (EMR), DGHS	23061302	45639559	9868619799
2	Dr Swasicharan CMO(EMR)	23061469	24107325	9818988281
3	Control Room (EOC)	23061469	23061469	
National Institute of Communicable Diseases				
1	Dr. Shashi Khare, Consultant (Micro.) & Incharge Monitoring Cell	23912836	27436070	9899900731
2.	Avian Influenza Monitoring Cell	23921401		
3	24x7 Call Centre	1075		

3.2 Rapid Response Team (RRT): Roles and Responsibilities.

The multi disciplinary RRT would consist of a Clinician/ Chest Physician, Epidemiologist, Public Health Specialists, Microbiologist / Virologist drawn from central government hospitals, NICD and ICMR institutions. The RRT would be deployed on receiving information of an outbreak either from the State or through the IDSP. The deployment would be coordinated by Director, EMR, Dte GHS. The RRT would carry a stock of Oseltamivir, PPE and the communication gadgets. Director, EMR would inform the State authorities about the details and arrival time of the RRT. The Regional Director, ROHFW in consultation with the concerned State / district authorities would facilitate pick up, stay, transportation etc.

The role and responsibilities of the Central RRT

- Meet the Health Secretary, Director Health Services (DHS) and hold briefing meeting before proceeding to the affected district.
- On reaching the district, the RRT would hold briefing meeting with the District Collector, State and District RRT.
- The team would do situational assessment and determine the size and geographic spread of the cluster.
- Examine the existing case definition and if required adopt/ modify it.
- Decide on the feasibility of containment operations. If containment is possible review the micro-planning for the containment operations.
    - Undertake sensitization for all involved in the containment operations.
    - Assist the district authorities for putting the micro plan into action.
    - Supervise the containment operations on daily basis / bridge the knowledge gap of the surveillance teams.
    - Review suspect case based on the WHO case definition.
    - Collect clinical samples and facilitate their transportation to identified laboratories.
    - Ensure treatment of the suspect cases in identified hospitals.
    - Supervise the infection control measures at field level and in hospital settings.

- If the spread is rampant, then the RRT need to take a decision on mitigation measures
    - Advice the district authorities on mitigation measures.
    - Assess the existing capacity for respiratory and critical care management. Requisition additional manpower and materials if required.
    - Review the community action of triage and domiciliary treatment.
    - Facilitate implementation of hospital surge capacity.
    - Decide on sampling to study shift in viral characteristics.

- Monitor the IEC activities and need to pitch up the scale.
- Report to EMR Division and NICD on daily basis.

- Keep liaison with State health authorities and the MOHFW (Director, EMR) and NICD [Avian Influenza Monitoring Cell (AIMC)].

Post Response Phase. During this phase, RRT would:

- Decide on the exit strategy from the containment operations.
- Review surveillance and assist the district authorities in strengthening surveillance for ILI/ SARI.
- Ensure that the State RRT has been identified to monitor the post-response surveillance.
- Documentation of the final report including the lessons learned.

Contact Numbers of Nodal Officers identified by the State / UT Administration

STATE	CONTROL ROOM (ADD. & CONTACT)	NODAL OFFICER
ANDHRA PRADESH	Office of The Addl. Director (Health Services), Hyderabad. 040-24656852(T) [24x7]	Dr Ramswarup [09989923781]
ARUNACHAL PRADESH	SSU IDSP, Directorate of Health Services, Naharlagun, Arunachal Pradesh. Tel: 0360-2245460 Telefax:: 0360-2244271 (During office hours)	Dr.L.Jampa [09436055743] [24x7]
ASSAM	Office of the Director (Health Services), Guwahati. 0361-2235577 0361-2261630 0361-2261089 [24x7]	Dr Doley 0361-2642008 09854066560
BIHAR	Office of the Executive Director, State Health Society, Sheikhpura, Patna. 0612-2280562 0612-2281232 0612-2290322(F) [24x7]	Mr. Santosh Mathew (IAS) Dr D K Gupta (Addl.Nodal officer)-09430057795 Control Room In-charge (Dr BK Singh: 9470003023)
CHHATISHGARH	State Surveillance Unit (IDSP), Directorate Health services, Old Nurses Hostel, DKS Mantralya Campus,Raipur 0771-2220011 [24x7]	Dr T K Agarwal (Deputy Director, Epidemic)-Nodal officer: 09926624162 Dr S N M Murti (Addl.N.O) 09425564418
GUJARAT	Office of Dy.Director (Epid) Commisionerate of Health Services Block No:5, Dr.Jivaraj Mehta Bhawan, Old Sachivalaya , Ahmedabad, Gujarat Tel: 079-23253334 Fax: 079-23250818 [24X7]	Dr.S.J.Gandhi [09825342899]

GOA	Call Centre: 0832- 2458458 [24X7]	Dr.Tamba (09822123801)
HIMACHAL PRADESH	IDSP Cell, Directorate of Health Services, Kasumti, Shimla-9 Tel/Fax: 0177-2628046 [during office hours]	Dr.Vinod Mehta(09418163500) [24x7]
HARYANA	Office of the Director (Health Services),Sector-6, Panchkula 0172-2587346 [During office hours]	Dr.Aparajita Sondh (Nodal Officer) 09417931024 [24x7]
JAMMU-KASHMIR	Office of DHS, Srinagar, J& K Tel/Fax. No (0194) 2452697 (main) 2452052,2454706,2430141 (24x7)	Dr.M.Ahmed (09419012355) Dr.Bashir Ahmed Dar (Addl.N.O) (09419017716)
JHARKHAND	RIMS, RANCHI Chamber of Dr. A. K. Mathur (HOD Medicine) (09431176496) (RIMS acting as Control Room)	Dr C.B Sharma (094311740820 Dr.Pradeep Baski (09431102461)
KERALA	Office of Addl.DHS (Public Health), Near Govt. General Hospital Trivandrum TF:(0471) 2466828 [24X7]	Dr. Amar 09447451846
KARNATAKA	Office of the Director (Health and Family Welfare),Anand Rao Circle, Bangalore-9 Phone no: 080-1056 [24X7]	Dr.Chelluraj 09901060584 Dr.Vasudev Murthi 09880024329
MAHARASHTRA		
Mumbai	Room no.137,First Floor, Swasthaya Bhawan,Mumbai. 022-22029070 022-22025830 [24X7]	Dr. Gawande (09420711426)

Pune	Office of the Joint Director (Health Services), Central Building , Pune 020-26124299 [24X7]	Dr. Desai-09822429266 Dr. Suresh Bohatre 09881364656
MEGHALAYA	Office of DHS, Medical Institutions Nokrek Bldg. 3rd Secretariat, Shillong, Meghalaya TF:(0364)2506498 [Office hour only] Control room no 0364-2505842 Civil hospital Shilling [24x7]	Dr.R.R.Lanong, (09436102763)
MANIPUR	Medical Directorate, Office of DHS, Manipur Room no-23 Lamphelpat Manipur-795004 0385-2411668 (9am-6pm)	Dr Bhubon Chandra [09436021607]
MADHYA PRADESH	State Surveillance Unit, Directorate Health Services, Satpura Bhavan, Bhopal 0755-4094192(TF) [Office hours only]	Dr. B N Chauhan 09826282249
MIZORAM	Civil hospital Aizwal 0389-2322318 102	Dr Sangawalar 0389-2313721
NAGALAND	SSU IDSP, Directorate of Health Services& FW, T.R .Hill, KOHIMA-797001. Tel:(0370)2245016 [Office hours only]	Dr.Kebichusa (09436000463) [24x7]
ORISSA	State Surveillance Unit, Director of Health Services, Heads of the Department Buildings, Bhubaneshwar. 0674-2390466 (TF) [24x7]	Dr. V. Patnaik 0674-2390466

PUNJAB	Govt. Multispecialty Hospital, Sector-16, Chandigarh. Call Centre:102 Tel:(0172) 2700255 [24x7]	Mr. H.C. Gera (09988212139) (0172)-2740408
RAJASTHAN	Office of the Director (Public Health), Swasthaya Bhawan, Jaipur. 0141-2225624 0141-2224831(F) [	Mr. R K Meena ,IAS, Principal Sect.(Health)- Nodal Officer Dr. O P Gupta(Addl.Nodal Officer)-0141-2229858 09829333936
SIKKIM	SSU IDSP, Health & F.W. Govt. of Sikkim 03592-204199 [Office hours only]	Dr.Y.D.Chingappa (09832079576) Tel:(03592)204199
TRIPURA	DHS building PN Building Gurkha Basti Agartala Tel/Fax:(0381) 2215879	Dr P Chatterjee (09436120711) Dr.R.K. Dhar (09436137652)
TAMILNADU	Office of the Director (Public Health &Preventive Medicine), Central Malaria Laboratory, 359,Annasalai,Chennai-6 044-24321569 (TF) [24X7]	Dr. Elango, DHS, (09940610123)
UTTARAKHAND	Office of DHS, IDSP, 107,Chander Nagar, Dehradun TF: 0135-2721792 0135-2729897 [Office Hours only]	Dr.Pankaj Jain(09412969502) [24x7]
UTTAR PRADESH	Swasthaya Bhawan, Luknow Control Room No-Tel:(0522)2616482 Fax:(0522)2622819 [24X7]	Dr Pyaremohan Srivastava 0522-2629106(TF) (09415181629)
WEST BENGAL	Chamber of Joint Director (Health Services), Swasthaya Bhawan, Sector-5,GN Block, Kolkata-91 (033)-23571192 [10 am to 7 pm on working days] [11 am to 4:30 pm on Saturday and Holidays]	Dr.Bhaskar Bhattacharya, Jt.DHS 033-23330180 (09831187818)

ANDAMAN AND NICOBAR	G.B.Pant Hospital, Port Blair Tel:03192-233473	Dr.Abhijit Roy,Dy.Director (H) (09474269315) T/F: (03192-232797)
CHANDIGARH	Govt. Multispecialty Hospital, Sector-16, Chandigarh. Tel:(0172) 2700255	Mr. H.C. Gera (09988212139) (0172)-2740408
DADRA AND NAGAR HAVELI	Office of DHS, Silvassa. T/F (0260)2642061,2641759 CONTROL ROOM NO- 0260-2642120	Dr.L.M.Patra DHS (09426117593)
DAMAN AND DIU	CHC, Daman. Tel:(0260)2230080 Fax:(0260)2230570 [24x7]	Dr.B.Hansraj (Daman) (09825142600) Dr.Das (Silvassa) Tel:0260-2642961,26422120
DELHI	DHS Office Tel:22307145 (24X7)	Dr.R.P.Vashist (09212222456)
LAKSHADWEEP	Office of DHS, Tel:(04896)262316 [Office hours only]	Dr.B.S.Ashraf (09447297450) Dr.Hanza Koya (DHS)-Addl.N.O.(09496429027)
PUDUCHERRY	Call Centre:(24X7) Tel: (0413)1070 (0413)1077	Dr.G.S.Naidu (09443729783) Tel:(0413)2249357

Standard Operating Procedure for Cluster Containment.

The RRT would assess the cluster size, extend of Geographic spread and the time taken for that spread. The key epidemiological parameters for cluster containment decision would be :

(i) The virus is not efficiently transmitting and the attack rate or reproductive number advocates cluster containment.
(ii) The geographic location has natural boundaries facilitating a containment option.
(iii) Multiple clusters are absent

RRT in consultation with the MOHFW and State health departments may consider two different approaches for cluster containment: The geographic approach and the functional (targeted) approach. In geographic approach, an aggressive containment plan would be executed with strict geographic quarantine, enforcing social distancing measures and providing people residing in 0-5 km with chemoprophylaxis. In targeted approach, cases are treated and all contacts put on chemoprophylaxis.

1. Geographical approach

- The target population would be identified as one with in 10 km of the cluster epi centre. 0-5 km would be the containment zone and 5-10 the buffer zone.
- Notifying the containment zone and the buffer zone under the Epidemic Act or relevant law (if containment operations / social distancing measures are to be implemented).
- Issue orders for perimetry control - restricting movement of persons into and out of the containment zone to unaffected area (if containment strategy is opted. Only authorized persons to be permitted inside the containment zone).
- Communicate the name/ geographic location of epi centre of the outbreak to the State and Central nodal agencies.
- Ensure deployment of adequate security personnel for administering perimetry control. Sensitize them on the task and provide them with three layered mask.
- Ensure essential supply for 20 days with in the containment zone.
- Ensure availability of the requisite quantity of oseltamivir for mass chemoprophylaxis. Plan its mobility.

1.1 Components of Operational Plan for Cluster containment

1.1.1 Surveillance

Active house to house surveillance in Containment and Buffer Zone. The procedure involves the following:

- The district administration / CMO would issue orders for mobilization of the Medical Officers/ Supervisors and the health workers identified in the micro plan.
- The orders would clearly indicate their placement for this purpose for a period of 20 days or more and would advise them to carry necessary clothing and personal necessities etc.
- The order would also clearly indicate that if a health worker/ health supervisor is pregnant, she should not report for this duty but should send a communiqué to this effect.
- The health workers identified for surveillance and reporting to the affected area from outside would stay in the identified area. CMO would ensure their boarding/ lodging arrangements in that area. Health workers identified for surveillance residing within the infected area may continue to stay in their homes.
- A day prior to the onset of containment operations, the identified health workers would be briefed on the surveillance operations by the RRT at the identified place. The briefing will include:
  - Overview of influenza H1N1 (or that caused by a novel strain).
  - Standard case definition. The purpose of active surveillance and what to do.
  - Epi-center, identified area of operation (containment zone and buffer zone), preferably on map
  - Questionnaire for interview of households by the health workers.
  - Role play on interviewing the households.
  - The data sheet to be filled on daily basis.
  - Identifying suspect cases as per case definition and informing their supervisors about these cases.
  - Triage, domiciliary care and hospital referral. Daily follow up of cases under ome isolation.
  - Personal protection measures and including donning / un-donning and disposal of PPE.
  - Mass chemoprophylaxis with Oseltamivir and the side effects that need to be reported.
  - Communication for households (including fliers / leaflets to be distributed) on reducing risk to household members especially children.
  - Allocated geographic area, the vehicle number and drop/ pick up point.
  - Issue of identity cards/ duty badges.

- The risk profile for surveillance workers would be determined by the RRT. If low risk, three layered surgical mask would be provided. If risk is moderate to high, then surveillance workers would use full complement of PPE.
- Medical Officers identified for the supervision of the surveillance activities would Be provided with a copy of the action plan and encouraged to read it and interact with the RRT on the issues covered. It would also be ensured that they are:
  - Well acquainted with the supervisors and health workers in their team.
  - In a position to clear all doubts of the health workers.
  - Visit suspect cases and if required they would inform the RRT for further investigation immediately.

- Collecting the data from the allocated surveillance area in the prescribed proforma and handing over the data to the data management team every day in the evening.
- Well aware of the side effects of Oseltamivir and monitoring the health status of the population on mass chemoprophylaxis, health workers and the supervisory staff on chemoprophylaxis under their supervision.

- In the morning, the health workers, their supervisors and medical officers would gather at the predetermined place for the daily briefing. It would be ensured that they are clear about the assigned area, vehicle number, pick up point etc.
- They take the daily dose of oseltamivir.
- After the briefing meeting they would proceed to the field in the identified vehicles. The surveillance workers would be dropped at predetermined spot and would be picked up in the late afternoon from that spot.
- During the intervening time the surveillance worker would visit the houses earmarked for him/ her, interview the households, and record the findings.
- He/ she will take note of all cases of fever with any respiratory symptoms (cough, difficulty in breathing, etc). Inform the supervisor/ medical officer about a case that is suspect. The case would be evaluated by the Medical Officer. If in the view of the medical officer, the case needs to be further investigated, the RRT would be informed.
- The RRT would determine whether the case conforms to the case definition. If so, the case would be shifted to the isolation facility for further management. Clinical samples would be collected and transported in accordance with the guidelines.
- f a suspect case is identified, then all the close contacts of the case would also be followed up.
- The surveillance workers during their house visits would communicate the risk and the preventive actions to be taken by individual families.
- The RRT would also supervise the surveillance operations on daily basis.
- The supervisors would collect the data sheets from the surveillance workers and report to the identified area for the debriefing. The data from the field will be collated and given to the data management team every evening.
- OPD data / IPD data from the identified hospital/health facilities on ILI / SARI cases would also be collected and analyzed on daily basis and given to the data management team.
- The active surveillance would continue for 10-14 days.

1.1.2 Contact tracing

- Obtain travel history of all cases and extended social networks of cases and contacts during the preceding 14 days.
- Contacts of cases should be identified and traced and followed up for evidence of respiratory illness for at least 7 days after last contact.
- If mass chemo prophylaxis is feasible, then, only contacts outside the buffer zone need to be traced and given chemoprophylaxis.
- Whenever possible, cases should be isolated in health care facilities to maintain strict infection control. Contacts should be advised to remain at home (voluntary

home quarantine) for at least 7 days after the last contact with a person under investigation.

1.1.3 Mass Chemoprophylaxis

- The entire population in 0-5 km (Except for infants and pregnant women) would be given oseltamivir 75 mg once daily for 10 days.
- The health worker during house to house visit would provide the daily oseltamivir to all the members of the family he/ she is visiting.
- 90% coverage of the target populations should be the goal for successful containment.
- Adverse events will be monitored either by the health worker or through IDSP.

1.1.4 Case management

- Case would be managed in identified health facilities.
- These centres would have facilities for respiratory and ventilatory management.
- Isolation of clinical cases of moderate-to-severe respiratory disease in respiratory isolation rooms or single rooms.
- These facilities would follow strict infection control practices. The treating doctors would wear full compliment of PPE and aerosol generating procedures require PPE and N-95 mask.

1.1.5. Non- Pharmaceutical Interventions

whether opting for mass chemoprophylaxis or a targeted approach, the containment operations would be more effective if non-pharmaceutical interventions are made to apply at individual level and community level

- At the individual level, public would be informed to follow cough etiquettes, hand washing, keeping arms length from others, self reporting of illness and seek treatment if complaining of influenza like illness.
- Infection control measures would be ensured in community and health care settings. The Domestic cleaning, using household cleaning products, to reduce transmission via fomites and from infectious respiratory secretions on surfaces. In hospitals waste management protocol would be strictly followed.
- A the community level, social distancing measures would be enforced such as closure of schools, markets; restrict public gatherings, ban public mass gatherings and impose travel restrictions through limiting public and private transport etc.
- The DM would depute enough security personnel to maintain law and order. Essential services in the quarantine area would also be maintained.

1.1.6. Communication

- Inform the public about the risk through print & visual media
- Field publicity units of I&B Ministry/ NGOs would be engaged in Social mobilization for risk reduction.
- Media briefing .

2. Functional approach

Functional (Targeted) approach involves administration of antiviral drugs for the treatment of cases and the targeted prophylaxis of close contacts. This approach would be followed When:

- The number of cases are few and manageable
- When the clusters are limited in time, place , person.
- Till such time the logistics of geographic containment with mass chemoprophylaxis is planned and affected.
- The Geographic containment is not possible. Even if possible there is limitation for mass chemoprophylaxis in terms of availability of drugs and logistics

Contact would be traced and provided chemoprophylaxis. The contacts would be placed under voluntary home quarantine and advised to daily monitoring of their body temperature. the contacts would be visited by the health worker and by the RRT if complaining of symptoms.

Model Micro Plan

Influenza A H1N1

Micro Plan for Managing Human Cluster

Epicentre Rajshahi village

Neelkhand Block, Passighat District,
Poorvanchal State

Micro-plan for Managing Human cluster of Influenza A H1N1 (or that caused by a novel virus)

Geographic Location: Rajshahi village, Neelkhand block, Passighat District

1. Demographic Details

District Details

District area:
District Population:
No of Blocks:
No of Municipalities:

Block Details

Name of Block:
Population:
Number of Villages:

Affected area

Number of Villages in 0-5 Km area:
Number of Villages in 5-10 Km:
Population in 0-5 Km area:
Population in 5-10 km area:

	Population <500	Population 500-1000	Population>1000	Total
No. of villages in 0-5 km				
No. of villages in 5-10 km				

Village wise population differential

Name of Village	Name of Block	Population	M	F	Ch
0-5 km					
Village 1					
Village 2					
….					

Village n					
5-10					
Village 1					
Village 2					
….					
Village n					

2. Map of the Affected area

Clearly demarcate index cluster area, containment zone (0-5) and buffer zone (5-10) km.

3. Human Resource

S. No	Name	Designation	Contact Number (O)	Mobile
1		DM		
2		ADM		
3		CMO		
4		BDO		
5		Block MO		
6		Block AHO		
7		BEE		
8		NRHM Block Manager		

Central RRT

S. No	Name	Designation	Contact Number

State RRT

S. No	Name	Designation	Contact Number

District RRT

S. No	Name	Designation	Contact Number

4. Active House to House Surveillance

Number of Teams for Human Health Surveillance:

Each health worker would cover 100 houses in 0-5 km. The listing of villages allocated to surveillance teams, their names, name of supervisors for each team and their contact number is at **Appendix-I**

The health worker during the house to house visit would collect information on anyone suffering from fever and cough. The name, age, sex, occupation and the address of such persons to be recorded on proforma at **Appendix-II.**

Active surveillance would be done if cluster containment is feasible. If there are large number of cases/ multiple clusters then active surveillance would be abandoned.

5. Passive Surveillance

All identified health facilities including government health facilities; voluntary / private hospitals & clinics report Influenza Like Illness (ILI) / Severe Acute Respiratory Illness (SARI). List of health facilities identified for reporting ILI/SARI is at **Appendix-III.**

Proforma for reporting ILI/SARI is at **Appendix-IV**

6. Sample Collection and Transportation

Institution where stock of viral transport media has been kept:
Name of the person I/c, address and contact number:

Initial sample collection is recommended from first few cases. Once it is established that the clustering is by Influenza A H1N1, and then limited samples would be taken only for the purpose of identifying further change in the character of the virus.

7. Contact Tracing

Contact details of the Surveillance teams earmarked for contact tracing with in 0-10 Km area

Team No	Name of Member	Designation	Contact Number	Area earmarked

Contact detail of medical Officer identified to contact neighboring districts for contact tracing.

S. No	Name of Doctor	Designation	Contact Number

Proforma for recording and follow up of contacts (**Appendix-V**).

Contact tracing and chemoprophylaxis to the contacts would continue till such time it has an impact on the disease transmission. If large numbers of cases in multiple clusters appear, contact tracing and chemo prophylaxis as a public health measure would be abandoned. (RRT to take decision)

8. Transportation

Number of vehicles required for mobilizing the surveillance teams (active and contact tracing)

Number of ambulances/vehicles required for transporting cases, PUI and contacts

Vehicle number allocation to the teams is at **Appendix-VI.**

9. Health Facilities

Name of identified Health Facility:

	Name	Contact

		Number
Medical Superintendent		
Team leader for clinical management		
Hospital Emergency		

Number of beds in Isolation facility:
Number of critical care beds:
Quarantine facility for Contacts:
Name of Referral Hospital:
Contact Number of Referral Hospital:

Details of other hospitals in Government and private sector at **Appendix-VII**.

Total bed capacity of identified hospitals :
Total critical care beds (Govt and private) :
Surge Capacity :
Availability of Hospital disaster plan

Institutions identified (after assessment) for temporary hospitals

S. No	Name of Institution	No of temporary beds that can be created	Contact Number	Source from which hospital equipments will be mobilized	Names and contact details of medical manpower manning the facility.

Checklist for drugs, supplies and equipment for critical care and ventilatory management is at **Appendix VIII.**

10. Logistics

Name and Contact No. of Logistics In-charge responsible for release of Oseltamivir/ PPE:

Name and contact number of official holding key of the Stores
Name and contact person of Alternate official holding key of the stores

A. Consolidated logistics summary:

S. No	Name of the item	Stock Requisitioned	Stock consumed	Stock at Hand
1	Oseltamivir			
2	PPE			
3	N-95 Mask			
4	3-layered Surgical mask			
5	Sample collecting kits			

B. Area / Designated Hospital specific logistic details:

S. No	Name of the item	Stock Requisitioned	Stock consumed	Stock at Hand
1	Oseltamivir			
2	PPE			
3	N-95 Mask			
4	3-layered Surgical mask			
5	Sample collecting kits			

Area specific Health Facility where Oseltamivir would be available for distribution to Health Workers:

S.No	Area	Name of Health Facility	Contact details

11. Community Quarantine

Name and contact details of the Nodal Officer identified for Perimeter Control:

Officers charged by the DM for monitoring perimeter control:

Name and contact details of the identified persons providing the perimeter control:

Proforma for listing of persons entering & leaving the perimeter control (**Appendix-IX**):

Stock of Three layered surgical mask available for persons doing perimeter control/ manning law and order:

S. No	Name of the item	Stock Requisitioned	Stock consumed	Stock at Hand

1	3-layered Surgical mask			

Perimeter control would continue till such time only when the cluster containment decision is enforced. Once the infection gets widely spread, the perimeter control needs to be abandoned.

12. Social distancing measures

No. of schools / Colleges in the affected area:
No of Schools / Colleges closed:
No. of social events of mass gathering nature anticipated;
Details of religious leaders / opinion makers / village elders who need to contacted for favor of canceling the event.
Contact details of public and private bus operators :

13. Continuity of Operations

List of available practicing doctors outside government system
List of doctors with contact details volunteered to provide services **(Appendix-X)**

14. Communication

Name and contact number of Officer for communication:
Number of vehicles engaged for "miking" (public address system):
Number of Fliers/ posters printed:

List key messages (including also for Inter-personal Communication):
A.
B.

NGOs listed for social mobilization

15. Media Management

Nodal Officer for Media Briefing:
Contact Number:

16. Data Management

Officer responsible for collecting, collating and analyzing data from field and health facilities.

Name :
Address :
Contact number :

Institutions and designated persons with whom data need to be shared:

Data Collection tools **(Appendix-XI)**

Output variables to be generated at micro level;

No. of Suspect case of Influenza A H1N1
No. of Probable Case „
No. of deaths due to influenza A H1N1
No. of samples tested positive
No. of contacts traced and put on chemoprophylaxis
% of population covered by chemoprophylaxis
Hospital bed occupancy
Critical bed occupancy
Temporary bed occupancy
Work absenteeism in percentage

17. Control Room

Nodal Officer:
Contact Number:
Duty rosters of personnel manning 24x7 control room (**Annexure XII)**

18. Office orders (indicative)

Draft orders on notification, Quarantine, social distancing measures.
Draft order cancellation of leave.
Draft orders on taking services of private hospitals/ nursing homes.
Draft order for taking services of personnel
Draft order on taking private institutions such as schools for temporary hospitals.

17. Budgeting (indicative)

S.no	Item	Unit cost	Total cost	
1.	Setting quarantine Centre			
	Rental			
	Boarding and lodging			
	Other facilities			
2.	Transportation			
	No. of vehicles hired			
	POL expenditure for Office			

	vehicles/ ambulances			
3.	Hospital facility			
	Civil and electrical work			
	Mobilization of Hospital equipments			
	Miscellaneous			
4.	Communication			
	Cost of printing posters			
	Hiring personnel for display of posters			
	Cost of hiring vehicles for miking			
	Advertisement cost : local dailies cable network local TV channels			
5	Logistics			
	Three layered surgical mask			
6	Contingency Expenditure			

18. Appendix

I	The listing of villages allocated to surveillance teams, their names, name of supervisors and their contact numbers
II	Proforma for health workers
III	List of health facilities identified for reporting ILI/SARI
IV	Proforma for reporting ILI/SARI
V	Proforma for recording and follow up of contacts
VI	Listing of vehicle allocation to the surveillance teams
VII	Details of other hospitals in Government and private sector
VIII	Checklist for drugs, supplies and equipment for critical care and ventilatory management
IX	Proforma for listing of persons entering & leaving the perimeter control
X	List of doctors with contact details volunteered to provide services
XI	Data Collection tools
XII	Duty rosters of personnel manning 24x7 control room

Case Definition for novel Influenza A H1N1

Case Definition

A *suspected case* of Novel influenza A (H1N1) virus infection is defined as a person

with acute febrile respiratory illness (fever $\geq 38\ ^0$ C) with onset.:

- *within 7 days of close contact with a person who is a confirmed case of novel influenza A (H1N1) virus infection, or*
- *within 7 days of travel to community where there are one or more confirmed novel influenza A(H1N1) cases, or*
- *resides in a community where there are one or more confirmed novel influenza cases.*

A *probable case* of Novel influenza A (H1N1) virus infection is defined as a person with an acute febrile respiratory illness who:

- *is positive for influenza A, but unsubtypable for H1 and H3 by influenza RT-PCR or reagents used to detect seasonal influenza virus infection, or*
- *is positive for influenza A by an influenza rapid test or an influenza immunofluorescence assay (IFA) plus meets criteria for a suspected case*
- *individual with a clinically compatible illness who died of an unexplained acute respiratory –illness who is considered to be epidemiologically linked to a probable or confirmed case.*

A *confirmed case* of Novel influenza A (H1N1) virus infection is defined as a person with an acute febrile respiratory illness with laboratory confirmed novel influenza A (H1N1) virus infection at WHO approved laboratories by one or more of the following tests:

- *Real Time PCR*
- *viral culture*
- *Four-fold rise in swine influenza A (H1N1) virus specific neutralizing antibodies.*

Annexure-XIII

Data Collection Tools

Proforma no.	Details
I	Format for daily report of Influenza A H1N1 Outbreak (State Level) during cluster containment
II	Format for daily report of Influenza A H1N1 Outbreak (District Level) during cluster containment
III	Format for daily report of Influenza AH1N1 Outbreak (Epicentre Level) during cluster containment
IV	Data collection tool at field level (Field Level Data Collection Sheet) for cluster containment
V	Data Collection tool at field level (Field Level Compilation Sheet) for cluster containment
VI	Line Listing of Patients under investigation during cluster containment
VII	Line listing of contacts
VIII	Self Health Monitoring Proforma for Health workers
IX	Oseltamivir Chemoprophylaxis
X	Proforma to record side effects of Oseltamivir

Proforma-I

Cluster Containment

Format for daily report of Influenza Outbreak (State Level)

State:	**Districts:**		**Date:**
Total No. of Districts	**No. of affected Districts:**		
Total No of Blocks:	**No. of affected Blocks:**		
Total No. of Village:	**No. of affected village:**		

A) Population Based Information A-1 Gen Information	**No. of villages/municipality/localities**	**Population Surveyed(Daily)**	**Population surveyed (Cumulative)**
0-5 Km			
5-10 Km			
Total			
A-2 Morbidity data		**Daily**	**Cumulative**
	0-5 Km		
Persons with fever and cough(only new Cases)	5-10 Km(Round I/II/III/IV)		
	Total		

B) Hospital based Information……		
Outpatient	**Daily**	**Cumulative**
Persons with fever & cough identified		
Inpatient		
Persons with fever & cough admitted		
No. started Oseltamivir		

C) **Mortality Data**			
Deaths reported from field due to fever and cough			
Hospital deaths due suspect/ probable/confirmed influenza A H1N1			

D) **Contact Tracing**				
Total number of contacts traced				
E) **Mass Chemoprophylaxis**				
Total population provided mass chemoprophylaxis				
Percentage of population in affected area covered with chemoprophylaxis				
F) **Monitoring Health Staff**				
Health personnel deployed in field including medical officers, Health supervisors/health workers etc.		Health personnel deployed in field complaining of ILI		
Hospital staff including Medical Officers, Nurses, Attendants etc.		Hospital staff complaining of ILI		

G) Stock Position

Item	**Previous stock at State HQ**	**Supplied by Centre**	**State Total (C=A + B)**	**Total Supplied to the Districts**	**Present stock at State HQ**	**Stock at District(s)**
	(A)	**(B)**	**(C)**	**(D)**	**(E)**	**(F)**
Tab Oseltamivir						
Oseltamivir Suspension						
PPE						
N-95 Masks						

F) Any other Relevant Information:

Note: Daily report to be faxed by 11.00 a.m.

- Director NICD (Fax No: 011-23922677; 011-23921401)
- Director EMR (Fax No: 011- 23061457)

Jt/ DHS (Public Health)

Signature

(Name & Desg. Of the reporting officer)

Proforma-II

Cluster Containment

Format for daily report of Influenza Outbreak (District Level)

District:	**Districts:**		**Date:**
Total No of Blocks:	**No. of affected Blocks:**		
Total No. of Village:	**No. of affected village:**		

A) Population Based Information A-1 Gen Information	**No. of villages/municipality/localities**	**Population Surveyed(Daily)**	**Population surveyed (Cumulative)**
0-5 Km			
5-10 Km			
Total			
A-2 Morbidity data		**Daily**	**Cumulative**
	0-5 Km		
Persons with fever and cough(only new Cases)	5-10 Km(Round I/II/III/IV)		
	Total		

B) Hospital based Information		
Outpatient	**Daily**	**Cumulative**
Persons with fever & cough identified		
Inpatient		
Persons with fever & cough admitted		
No. started Oseltamivir		

C) **Mortality Data**			
Deaths reported from field due to fever and cough			
Hospital deaths due suspect/ probable/confirmed influenza A H1N1			

D) **Contact Tracing**				
Total number of contacts traced				
E) **Mass Chemoprophylaxis**				
Total population provided mass chemoprophylaxis				
Percentage of population in affected area covered with chemoprophylaxis				
F) **Monitoring Health Staff**				
Health personel deployed in field including medical officers, Health supervisors/health workers etc.		Health personnel deployed in field complaining of ILI		
Hospital staff including Medical officers,Nurses,Attendants etc.		Hospital staff complaining of ILI		

G) Stock Position

Item	**Previous stock at District HQ**	**Supplied by State**	**District Total (C=A + B)**	**Total Supplied to the epicentres**	**Present stock at District HQ**	**Stock at Epicentres(s)**
	(A)	**(B)**	**(C)**	**(D)**	**(E)**	**(F)**
Tab Oseltamivir						
Oseltamivir Suspension						
PPE						
N-95 Masks						

F) Any other Relevant Information:

Note: Daily report to be faxed by 11.00 a.m.

- Director NICD (Fax No: 011-23922677; 011-23921401)
- Director EMR (Fax No: 011- 23061457)

CMO

Signature

(Name & Desg. Of the reporting officer)

Proforma-III

Cluster Containment

Format for daily report of Influenza Outbreak (Epicentre Level)

Epicentre:	**Epicentre:**		**Date:**
Total No. of Village:	**No. of affected village:**		

A) Population Based Information **A-1** **Gen Information**	**No. of villages/municipality/localities**	**Population Surveyed(Daily)**	**Population surveyed (Cumulative)**
0-5 Km			
5-10 Km			
Total			

A-2 Morbidity data		**Daily**	**Cumulative**
Persons with fever and cough(only new Cases)	0-5 Km		
	5-10 Km(Round I/II/III/IV)		
	Total		

B) Hospital based Information		
Outpatient	**Daily**	**Cumulative**
Persons with fever & cough identified		
Inpatient		
Persons with fever & cough admitted		
No. started Oseltamivir		

C) **Mortality Data**			
Deaths reported from field due to fever and cough			
Hospital deaths due suspect/ probable/confirmed influenza A H1N1			

D) **Contact Tracing**				
Total number of contacts traced				
E) **Mass Chemoprophylaxis**				
Total population provided mass chemoprophylaxis				
Percentage of population in affected area covered with chemoprophylaxis				
F) **Monitoring Health Staff**				
Health personel deployed in field including medical officers, Health supervisors/health workers etc.		Health personnel deployed in field complaining of ILI		
Hospital staff including Medical officers,Nurses,Attendants etc.		Hospital staff complaining of ILI		

G) Stock Position

Item	**Previous stock at Epicentre**	**Supplied by District**	**Epicentre Total (C=A + B)**	**Total Supplied for field activities**	**Present stock at District HQ**	**Stock at Epicentres(s)**
	(A)	**(B)**	**(C)**	**(D)**	**(E)**	**(F)**
Tab Oseltamivir						
Oseltamivir Suspension						
PPE						
N-95 Masks						

F) Any other Relevant Information:

Note: Daily report to be faxed by 11.00 a.m.

- Director NICD (Fax No: 011-23922677; 011-23921401)
- Director EMR (Fax No: 011- 23061457)

Block MO

Signature

(Name & Desg. Of the reporting officer)

Proforma-IV

Cluster Containment

Data collection tool at field level
(Field Level Data Collection Sheet)

Villages allocated: 0-5km 5-10 km
Name of the Village(s)
Name of the field worker
Name of the Supervisor
Name of the PHC doctor

S.No	Name	Age	Sex	Address	c/o Fever cough, breathing difficulty	Oseltamivir taken

Any death in the family need to be recorded separately and informed to the supervisor immediately.

Proforma-V

Data collection tool at field level (Field Level Data Compilation Sheet)

No. of Villages Covered: 0-3 km 3-10 km
Name of the Supervisor
Name of the PHC doctor

S.No	Name of village	M	F	Total population surveyed	No of cases with Fever and cough	No of deaths	Remarks
Total							
Signature of Supervisor							

Proforma-VI

Line listing of Patients being investigated

S.No	Name	Age	Sex	Address	Date on which samples taken	Details of samples	Date of sample dispatch	Report received on	Results of lab test	Remarks on Follow up
Signature of Designated Nodal Officer for Surveillance										

Proforma-VII

Line listing of Contacts

S.No	Name	Age	Sex	Address	Contact of	Date on which exposed	Date of sample dispatch

Proforma-VIII

SELF HEALTH MONITORING PROFORMA

(To be filled by those who are health care provider including laboratory staff or others who comes in contact with Influenza H1N1 case virus)

Name ……………….……………Age ……………….…… Sex ..…................….…

Complete

Address…………………………………….………………………….………………………

Tel. No. ……………….…………Mob No.. ……….………………

Date (s) of exposure ………..…………. Type of exposure (Please specify and tick) (Laboratory/patient/any other)

Day of exposure	Date	Morning Oral Temperature	Evening Oral Temperature	Development of any other symptoms e.g. Cough, Sore Throat, Bodyache, chills, Vomiting, Diarrhea, if any other (Please specify)
1				
2				
3				
4				
5				
6				
7				

Date and other details of treatment started

…………………………………………………..…………………….

Any other investigation

……………………………………………………………………….……………….………

Any similar complaints in family member residing with your self

………………………………………….………

If you develop fever or any symptoms stated above, report immediately to outbreak monitoring cell at 011-23091401

Proforma IX

Oseltamivir Chemoprophylaxis

Epi Centre :
Name of the Health Worker:

S.No	Name	Age	Sex	Address	Category	Oseltamivir administration (dates on which administered)					
						--/--/--	--/--/--	--/--/--	--/--/--	--/--/--	--/--/--
Signature of Health worker											

Proforma-X

Proforma to record side effects of Oseltamivir

Name : **Address:**

Age : **Sex :**

Date from which on Oseltamivir Chemoprophylaxis :

Date on which side effects reported :

Nature of side Effects :

Descision points:

- **Continue with Oseltamivir**
- **Stop Oseltamivir**
- **Treat Complications**
- **Continue monitoring health status in quarantine**

Name and signature of Medical Officer

GUIDELINES FOR CONTACT TRACING OF NOVEL INFLUENZA A (H1N1) CASE

1. BACKGROUND:

Following the pandemic of new Influenza A (H1N1) in various countries, Ministry of Health & Family Welfare, Government of India has initiated screening of passengers coming from the affected countries. These passengers are being screened at the airports, ports and border crossings for fever, cough, sore throat, and shortness of breath and/or other respiratory problems. Any traveler found to have these symptoms is isolated at identified health facility. Clinical specimens are collected and if tested positive for new Influenza A (H1N1), s(he) is given appropriate treatment. Moreover, indigenous case(s) may be reported in the country in future. Such an event would constitute a signal event for contact tracing.

For any such passenger (testing positive for new influenza A (H1N1), a list of all co-passengers is obtained containing their contact address including telephone numbers by the concerned agencies. This list is communicated to the State Government which is required to implement contact tracing of all passengers residing in the state with the help of Local Administration and Local Health Authorities.

2. OBJECTIVES:

(i) Enhanced detection & reporting of individual case(s) and their contacts.
(ii) Manage the outbreak and monitor its evolution
(iii) Pick up signs of further geographical spread

3. CASE DEFINITION:

To assist surveillance activities, case definition (Annexure-XII. Look for updated versions at website: www.mohfw.nic.in) based on clinical, epidemiological and laboratory criteria should be followed.

4. IMPLEMENTATION GUIDELINES:

(i) As soon as the signal event is detected, contact tracing must be aggressively implemented (preferably to be completed within 48 hours).
(ii) The contact tracing shall preferably be done by visiting the local residence of the contact(s) by a Health Personnel. Telephone may be used in certain circumstances or for follow-up.
(iii) On meeting the 'contact person' the visiting Health Personnel should introduce him(her)self, explain the purpose of contact tracing and should collect data in the prescribed format (Appendix-1).

(iv) Tracing efforts should focus on persons (including household contacts) who had close unprotected (*i.e.* not using mask) contact with the case patient one day before and upto 7 days after the case patient's symptom(s) onset.

(v) Contact tracing must include identification of extended social networks and travel history of cases during the preceding 7 days of onset of illness.

(vi) Contacts of cases should be traced and monitored for at least 7 days after the last exposure to the case patient for evidence of acute respiratory febrile illness.

(vii) Information about close contacts can be obtained from:

a. Patient, family members, persons at workplace or school associates, or
b. Others with knowledge about the patient's recent activities and travels.

(viii) Line-listing (proforma enclosed at Annex-1) of all exposed contacts shall be maintained with the following information:

a. demographic information,
b. date of last exposure or date of contact with the case patient,
c. date of onset if fever or respiratory symptoms develop, and
d. receipt of antiviral prophylaxis, if any.

4.1. Advisory for Symptomatic Persons:

(i) Refer persons with fever & respiratory illness to the 'designated health facility' in ambulance for management as under:

a. Isolation for strict infection control
b. Collection and laboratory testing of specimens (Refer to Annexure-XVII)
c. Appropriate medical care including antiviral therapy (Refer to Annexure XXI)

(ii) Depending on the severity of illness, acceptability, and availability of hospital beds, ill contacts may be isolated at a health-care facility or at home while awaiting test-results. However, once confirmed by laboratory, such cases must be managed in a designated health facility.

4.2. Advisory for Asymptomatic Contacts:

(i) Remain at home (home quarantine) for at least 7 days after the last exposure with a case.

(ii) Initiate self-health monitoring (proforma VIII to Annexure XIII) for the development of fever (regular temperature charting, twice a day) or respiratory symptoms (cough, sore throat, running nose, difficulty in breathing etc.) for 7 days after the last exposure to the case patient.

(iii) If fever or respiratory symptoms develop (s)he must inform the identified Local Health Official/District CMO/DSO by telephone and further management must be done at a designated health facility.

(iv) Administration of antiviral chemoprophylaxis should be followed as per policy guidelines (Annexure-XXI).

(v) Active monitoring (e.g. daily visits or telephone calls) for 7 days after the last exposure shall be done by the identified Local Health Officials.

4.3. Responsibilities of Agencies:

(i) International Health division of the Directorate General of Health Services/ MoHFW Government of India shall collect information with the help of APHO of concerned airport about the list of passengers and their relevant details (complete address and contact numbers) and transmit the same to the respective State Government(s) immediately.

(ii) State Government with support from SSO, State RRT, DSOs and local administration shall be responsible for:

   a. contact tracing activities;
   b. follow-up activities; and
   c. Management of cases
   d. regular reporting to Director (NICD) and Director (EMR)

(iii) NICD will provide the technical assistance to the state/district health authorities.

(iv) Director (EMR), Directorate General of Health Services will co-ordinate the entire exercise.

4.4. Infection Control Practices:

Appropriate infection control practices as per the guidelines (Annexure-XXIV) shall be followed while implementing contact tracing.

Appendix-1

Format for reporting line-list of contacts of novel Influenza A (H1N1) case

Reported by: District…….. **State……** **Date (dd/mm/yy):** ……

Sl. No.	Name	Age (year)	Sex (M/F)	Complete Address	Phone numbers for contact		Relation with Case	Date (dd/mm) of onset of symptoms							
					Home (with STD code)	Mobile No.		Date of exposure	Fever	Running nose	Cough	Sore throat	Respiratory	Others (specify)	Anti-viral prophylaxis
1.															
2.															
3.															
4.															
5.															
6.															
7.															
8.															
9.															
10															

Name and Signature of Identified Local Health Officer (with designation):
……

Annexure-XV

Passive Surveillance-Data on morbidity and mortality reported in health facilities

Name of the Institution:
Address
Date:

Morbidity data

S.No	Name	Age	Sex	Address	Remarks

Mortality Data

S.No	Name	Age	Sex	Address	Date of death	Suspect/ probable/ confirmed	Remarks

Weekly Compilation sheet (from ---------to--------)

S.No	Name of hospital	No of ILI	No of SARI	No of Deaths

List of Identified Bio Safety Laboratories (BSL-3) for Processing Clinical Samples

1. National Institute of Virology (NIV), Pune

National Reference Centre and WHO (H5) Reference Laboratory

Director : Dr.A..Mishra
Contact Number : Office - 020-261
: Mobile - 09970178555

24X7 contact number for informing about sample collection: 020-26006210/290

2. National Institute of Communicable Diseases (NICD), 22 shamnath Marg, Delhi

Special DG & Director : Dr Shiv Lal
Contact No. (office) : 011-23913148

HOD, Microbiology : Dr Shashi Khare
Mobile :9899900731

24X7 contact number for informing about sample collection : 011-23921401

3. **Regional Reference Laboratories (Standby labs)**

National Institute of Cholera & Enteric Diseases (NICED), Kolkata (033-23500448)

Regional Medical Research Centre, Dibrugarh (03732381494)

4. Additional BSL laboratories being Commissioned :

CRI, Kasauli
Haffkine Institute, Mumbai

Guidelines for Sample Collection and Handling of Human Clinical Samples for Laboratory Diagnosis

If a case conforms to the case definition (Annexure- XII), then samples should be collected as per guidelines in the forgoing paragraphs.

1. Samples to be Collected

From Ambulatory patient

- Throat Swab ***and***
- Nasal / Naso pharyngeal Swab
- Blood for serological tests (if advised by RRT)

From an intubated patient

- Lower respiratory aspirate
- Blood for serological tests

2. When to Collect Respiratory Specimens?

- As soon as possible after symptoms begin
- Before antiviral medications are administered
- Even if symptoms began more than one week ago
- Multiple specimens on multiple days could be collected if you have access to patient

3. Personal Protective Equipment

Before initiating collection of sample a full complement of PPE should be worn**.** This includes :

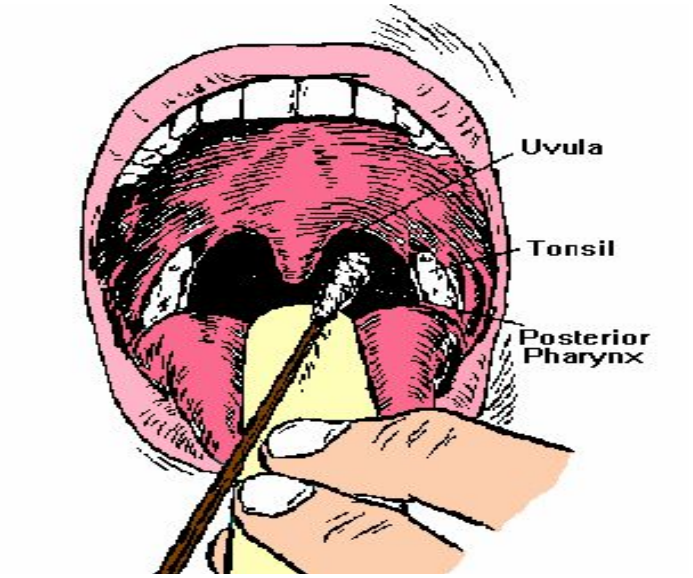
• Masks (N-95)
• Gloves
• Protective eye wear (goggles)
• Hair covers
• Boot or shoe covers
• Protective clothing (gown or apron)

4. Methods of Collection

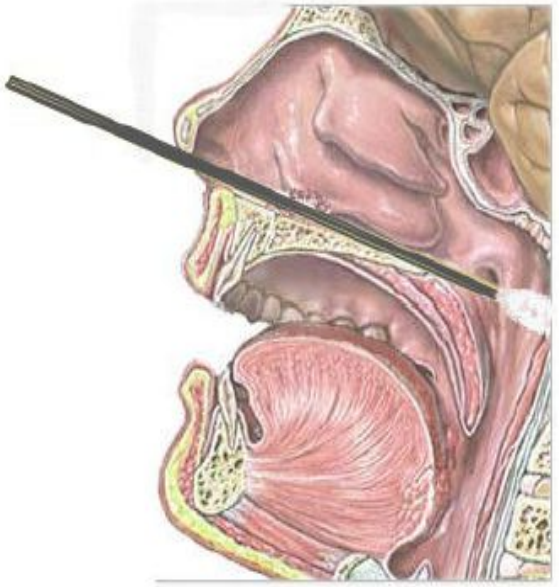
• Throat swab
• Nasal / Nasopharyngeal swab

Throat Swab

• Easy to do
• Highest yield in detecting H1N1 influenza in suspected cases
• Have the patient open his/her mouth wide open.
• The patient should try to resist gagging and closing the mouth while the swab touches the back of the throat near the tonsils.



Nasal / Nasopharyngeal Swab: Insert dry swab into nostril and back to nasopharynx. Leave in place for a few seconds. Slowly remove swab while slightly rotating it. Use a different swab for the other nostril. Put tip of swab into vial containing VTM, breaking applicator's stick.



Nasal Swab is collected from the anterior turbinate. Nasal swabs are also easy to collect and should be done to increase yield.

Both Nasal and Throat swabs can be collected into the same VTM to increase the viral yield. Collect multiple specimens (respiratory and blood) on multiple days. Maintain adequate stock of specimen collection kits and store them properly when they are not in use.

5. Labeling

Use pre-printed barcode* labels:

– On the specimen container
– On the field data collection form
– On the log book
– Subject's name
– Subject's unique identification number

Label
Specimen No. :
Patient's Name :
Hospital Name :
Unique ID No. :

6. Storing Specimens

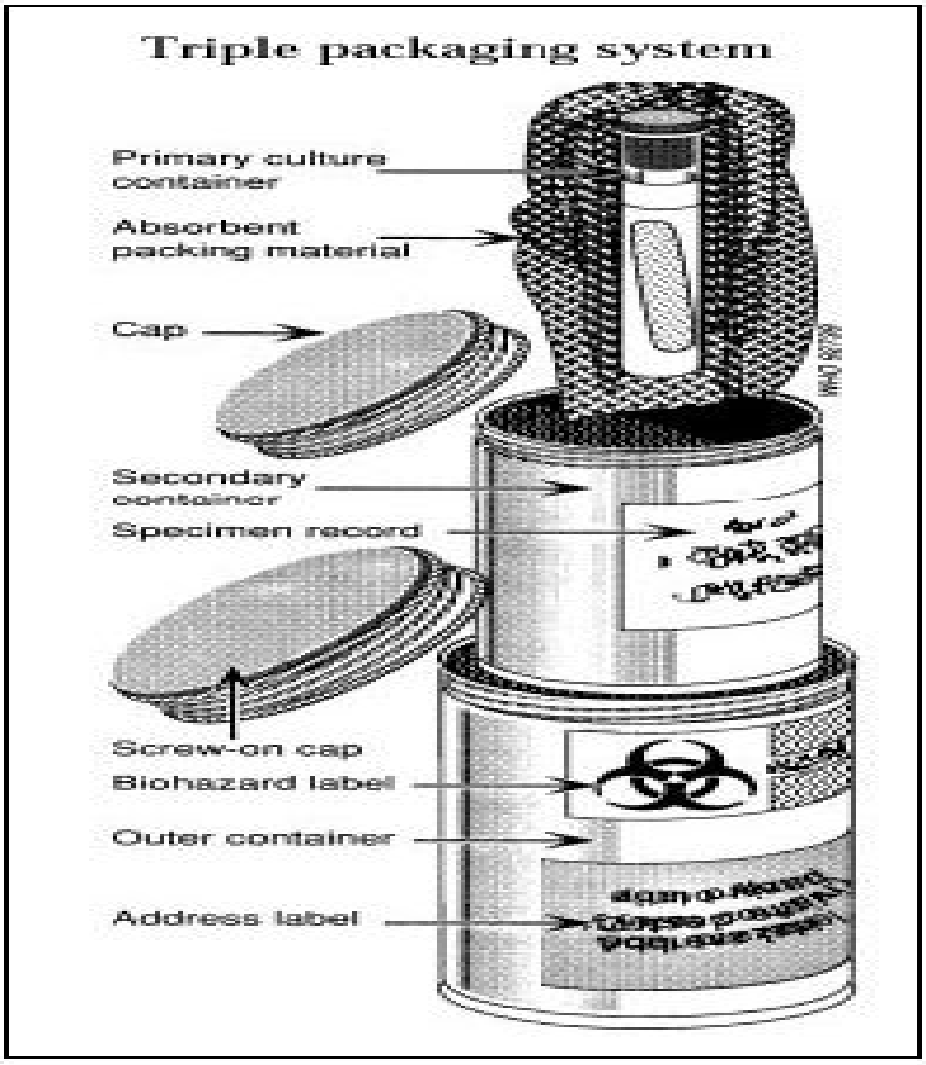
- Store specimens at 4 °C before and during transportation within 48 hours
- Store specimens at -70 °C beyond 48 hours
- Do not store in standard freezer – keep on ice or in refrigerator
- Avoid freeze-thaw cycles
- Better to keep on ice for a week than to have repeat freeze and thaw

7. Transportation of specimens

Specimens in viral transport medium for viral isolation should be kept at 4 °C and transported to the laboratory promptly. If specimens are transported to the laboratory within 2 days, they may be kept at 4 °C; otherwise they should be frozen at or below –70 °C until they can be transported to the laboratory. Repeated freezing and thawing must be avoided to prevent loss of infectivity. Sera may be stored at 4 °C for approximately one week, but thereafter should be frozen at –20 °C.

Specimens should be collected and transported in a suitable transport medium, on ice or in liquid nitrogen. Specimens collected for influenza virus isolation should **not** be stored or shipped in **dry ice** (solid carbon dioxide) unless they are perfectly sealed in glass or sealed, taped and double plastic-bagged. Carbon dioxide can rapidly inactivate influenza viruses if it gains access to the specimens through imperfect seals: microscopic leaks in the seal may allow carbon dioxide gas to penetrate the primary container as vacuum is created during freezing. (from WHO guidelines).

- Inform the laboratory before moving the samples.
- All samples should be transported after proper packaging using the standard triple packaging system (WHO) and it should accompany with the clinical details as per proforma at **Appendix-I.**
- While transportation cold chain should be maintained



Waste Disposal: should be done as per guidelines of your hospital

General Biosafety Measures

- Clinical samples should be collected by hospital staff and not by the laboratory staff.

- All clinical samples have to be collected wearing complete complement of PPE.
- While taking samples always use N95 mask.
- Use Latex disposable gloves.
- Wear laboratory coat/disposable apron.
- Always cover your hairs with head cover.
- Use protective eye wear (goggles)/face shields
- The clinical samples should be processed only in designated laboratory having the appropriate containment facilities.
- All technical procedures should be performed in a way that minimizes the formation of aerosols and droplets.
- Adequate and conveniently located biohazard containers should be available for disposal of contaminated materials.
- Work surfaces must be decontaminated after any spill of potentially dangerous material and at the end of the working day. Generally, 5% bleach solutions are appropriate for dealing with biohazard us spillage.
- Personnel must wash their hands often – especially after handling infectious materials and , before leaving the laboratory working areas, and before eating.
- Personal protective equipment must be removed before leaving the laboratory.

NOTE: Whenever sample is send to laboratory (NICD, Delhi; NIV, Pune) a certificate should be attached with it stating that the sample is for research purpose and is packed properly and not hazardous to the community .

Appendix-1

CLINICAL & EPIDEMIOLOGICAL DATA FOR H1N1 INFLUENZA

Name of Doctor/Health personal

……

District ……..… State

.....……..……...

Tel. :

……

Influenza regional Laboratory

…….....……..

Name of hospital

……..…….

Patient's Name ……CR/OPD

No...……...…...……..……

Age …….……Sex ….…….. Tel. No.

……..…….……..

Address

…….…….

…… Occupation

…….……..

Total OPD attendees …..…… Date of onset of illness ……..……

Clinical Signs & symptoms:

- Fever axilla > 38^0C Yes ☐ No ☐
- Oral > 38.5^0C Yes ☐ No ☐
- Cough Yes ☐ No ☐
- Sore throat Yes ☐ No ☐
- Nasal catarrh Yes ☐ No ☐
- Shortness of breath/difficulty in breathing Yes ☐ No ☐

Exposure History:

- Country Visit Date of visit ☐ Name ☐
- Close contact with a person (within 7 days) who is confirmed case of influenza A (H1N1). Yes ☐ No ☐
- Travell to community (Within 7 days) where one or more confirmed cases of Influenza A (H1N1) have been reported. Yes ☐ No ☐
- Resides in a community where there are one or more confirmed influenza cases. Yes ☐ No ☐

Sample Collection:

Data of sample collection

……

Sample collected: throat swab/nasopharyngeal swab/other ……..……..……

No. of samples collected

……..……

Treatment History:

Treatment taken Yes ☐ No ☐

If yes what & when

……...…… ☐ ☐

Investigations Done Yes No

Chest X-Ray findings ……

CRB Screening tool for Health Workers.

CRB-65 Screening tool is a simple and easy to use clinical assessment tool developed by the British Thoracic Society. This tool has been found sensitive in triaging patients with community acquired pneumonia. The same has been adopted for triage in community settings fro ILI/SARI.

CRB-65 stands for:

C- Consciousness
R- Respiratory Rate
B- Blood pressure
65- Those aged 65 and above

The parameters and the scores assigned are:

S.No	Parameter	Score=0	Score=1
1	Consciousness	Conscious, well oriented	Altered sensorium Unconscious.
2	Respiratory Rate	Less than 30	More than or equal to 30.
3	Blood Pressure	Systolic > 90 or Diastolic > 60	Systolic ≤ 90 or Diastolic ≤ 60
4	Age	Less than 65	Equal to or more than 65

Interpretation

Score	**Risk Profile**	**Recommendation**
1	Low Risk	Home Care
2	Moderate Risk	Hospital care
3-4	High Risk	Hospital care / critical care

Guidelines for Providing Home Care.

If the severity is less, then a large number of patients can be managed at home. If there is high morbidity and mortality, the hospital services would be overwhelmed. To reduce the load on hospital facilities, triage at community level using CRB tool (Annexure-XVIII) needs to be done. This may result in large number of patients requiring home care.

Guiding Principles:

- Patient should :
    - be informed about the illness.
    - stay home for seven days, preferably isolate himself / herself in a well ventilated room. Avoid common areas frequented by other family members of the family.
    - If the living space is small and more than one person need to sleep in a room, ensure that the head end of patient and others sleeping in that room are in opposite direction (head to toe).
    - wear mask all the time. Three layered surgical mask should be provided by the hospital / community health worker. If mask is not readily available, mouth and nose should be covered with a piece of cloth / handkerchief / tissue paper.
    - avoid smoking.
    - avoid close contact with others. If inevitable, they should always maintain an arms length.
    - avoid having visitors.
    - avoid going into the community, school, office, markets.
    - wash hands frequently.
    - be monitored and triaged regularly to assess worsening of symptoms.

Treatment:

- Mild influenza illness does not require specific anti viral medicine.
- Medicines should be taken only on advice of the health care provider.
    - Paracetamol for fever and ibuprofen for myalgia can be taken as per the advice of health care provider.
    - Oseltamivir, if prescribed / advised by the doctor only.
    - Children needs to be given paediatric preparation and dosage of the above drugs.
- Medicines (other than paracetamol) available for fever, headache, body ache in general groceries, pan shops etc should not be taken as they may contain aspirin.
- Aspirin should not be given for fever or body ache.
- Patients should take plenty of fluids.

- If fever is not responding, there is worsening of symptoms and in particular altered sensorium (confusion, incoherent speech etc) / loss of consciousness or difficulty in breathing, patient should be referred to nearest identified health facility.
- In particular, patients with co-morbid condition (hypertension, diabetes, bronchial asthma, chronic bronchitis or Obstructive airway diseases etc) need to be observed for worsening of symptoms.

Chemoprophylaxis to the contacts:

- All the contacts need to self monitor their health.
- Chemoprophylaxis to house hold contacts would be as per the policy decision taken by the Government which would be based on the severity of disease and stage of the pandemic.
- House hold contacts having co morbid conditions would be put on chemoprophylaxis.

Infection Control

- The infection control practices listed in the guiding principles would be followed including frequent hand wash, cough etiquettes, maintaining arms length from others.

- The contact surfaces would be disinfected by wiping, with sodium hypochlorite solution or with house hold bleach (5%) solution.

- Masks, tissue papers should be disposed of in dustbins. Hands should be washed after handling these wastes.

- Utensils used by the case should not be used by others without washing.

- Wash hands with soap and water before and after handling linens and towels used by the patient.

In case of need:

- Contact NICD outbreak Monitoring Cell at : 011-23921401
- Look for updates at www.mohfw.nic.in.
-

Clinical Management Protocol
(Novel Influenza A H1N1)

1. Epidemiology

1.1 The agent

Genetic sequencing shows a new sub type of influenza A (H1N1) virus with segments from four influenza viruses: North American Swine, North American Avian, Human Influenza and Eurasian Swine.

1.2. Host factors

The majority of these cases have occurred in otherwise healthy young adults.

1.3. Transmission

The transmission is by droplet infection and fomites.

1.4. Incubation period

1-7 days.

1.5 Communicability

From 1 day before to 7 days after the onset of symptoms. If illness persist for more than 7 days, chances of communicability may persist till resolution of illness. Children may spread the virus for a longer period.

There is substantial gap in the epidemiology of the novel virus which got re-assorted from swine, avian and human influenza viruses.

2. Clinical features

Important clinical features of swine influenza include fever, and upper respiratory symptoms such as cough and sore throat. Head ache, body ache, fatigue diarrhea and vomiting have also been observed.

There is insufficient information to date about clinical complications of this variant of swine origin influenza A (H1N1) virus infection. Clinicians should expect complications to be similar to seasonal influenza: sinusitis, otitis media, croup, pneumonia, bronchiolitis, status asthamaticus, myocarditis, pericarditis, myositis, rhabdomyolysis, encephalitis, seizures, toxic shock syndrome and

secondary bacterial pneumonia with or without sepsis. Individuals at extremes of age and with preexisting medical conditions are at higher risk of complications and exacerbation of the underlying conditions.

The reporting of cases is to be based on the case definition provided at **Annexure-XII ante**.

3. Investigations

Routine investigations required for evaluation and management of a patient with symptoms as described above will be required. These may include haematological, biochemical, radiological and microbiological tests as necessary.

Confirmation of influenza A(H1N1) swine origin infection is through:

- Real time RT PCR or
- Isolation of the virus in culture or
- Four-fold rise in virus specific neutralizing antibodies.

For confirmation of diagnosis, clinical specimens such as nasopharyngeal swab, throat swab, nasal swab, wash or aspirate, and tracheal aspirate (for intubated patients) are to be obtained. The sample should be collected by a trained physician / microbiologist preferably before administration of the anti-viral drug. Keep specimens at 4°C in viral transport media until transported for testing. The samples should be transported to designated laboratories with in 24 hours. If they cannot be transported then it needs to b stored at -70°C. Paired blood samples at an interval of 14 days for serological testing should also be collected.

4. Treatment

The guiding principles are:

- Early implementation of infection control precautions to minimize nosocomical / household spread of disease
- Prompt treatment to prevent severe illness & death.
- Early identification and follow up of persons at risk.

4.1 Infrastructure / manpower / material support

- Isolation facilities: if dedicated isolation room is not available then patients can be cohorted in a well ventilated isolation ward with beds kept one metre apart.
- Manpower: Dedicated doctors, nurses and paramedical workers.
- Equipment: Portable X Ray machine, ventilators, large oxygen cylinders, pulse oxymeter

- Supplies: Adequate quantities of PPE, disinfectants and medications (Oseltamivir, antibiotics and other medicines)

4.2. Standard Operating Procedures

- Reinforce standard infection control precautions i.e. all those entering the room must use high efficiency masks, gowns, goggles, gloves, cap and shoe cover.
- Restrict number of visitors and provide them with PPE.
- Provide antiviral prophylaxis to health care personnel managing the case and ask them to monitor their own health twice a day.
- Dispose waste properly by placing it in sealed impermeable bags labeled as Bio- Hazard.

4.3 Oseltamivir Medication

- Oseltamivir is the recommended drug both for prophylaxis and treatment.

- <u>Dose for treatment is as follows</u>:

  - By Weight:

- For weight <15kg 30 mg BD for 5 days
- 15-23kg 45 mg BD for 5 days
- 24-<40kg 60 mg BD for 5 days
- >40kg 75 mg BD for 5 days

  - For infants:

  - < 3 months 12 mg BD for 5 days
  - 3-5 months 20 mg BD for 5 days
  - 6-11 months 25 mg BD for 5 days

- It is also available as syrup (12mg per ml)
- If needed dose & duration can be modified as per clinical condition.

Adverse reactions:

Oseltamivir is generally well tolerated, gastrointestinal side effects (transient nausea, vomiting) may increase with increasing doses, particularly above 300 mg/day. Occasionally it may cause bronchitis, insomnia and vertigo. Less commonly angina, pseudo membranous colitis and peritonsillar abscess have also been reported. There have been rare reports of anaphylaxis and skin rashes. In children, most frequently reported side effect is vomiting. Infrequently, abdominal pain, epistaxis, bronchitis, otitis media, dermatitis and conjunctivitis have also been observed. There is no recommendation for dose reduction in patients with hepatic disease. Though rare reporting of fatal neuro-psychiatiric illness in children and adolescents have been linked to oseltamivir, there is no scientific evidence for a causal relationship.

4.4 Supportive therapy

- IV Fluids.
- Parentral nutrition.
- Oxygen therapy/ ventilatory support.
- Antibiotics for secondary infection.
- Vasopressors for shock.
- Paracetamol or ibuprofen is prescribed for fever, myalgia and headache. Patient is advised to drink plenty of fluids. Smokers should avoid smoking. For sore throat, short course of topical decongestants, saline nasal drops, throat lozenges and steam inhalation may be beneficial.
- Salicylate / aspirin is strictly contra-indicated in any influenza patient due to its potential to cause Reye's syndrome.
- The suspected cases would be constantly monitored for clinical / radiological evidence of lower respiratory tract infection and for hypoxia (respiratory rate, oxygen saturation, level of consciousness).

- Patients with signs of tachypnea, dyspnea, respiratory distress and oxygen saturation less than 90 per cent should be supplemented with oxygen therapy. Types of oxygen devices depend on the severity of hypoxic conditions which can be started from oxygen cannula, simple mask, partial re-breathing mask (mask with reservoir bag) and non re-breathing mask. In children, oxygen hood or head boxes can be used.
- Patients with severe pneumonia and acute respiratory failure ($SpO_2 < 90\%$ and $PaO_2 < 60$ mmHg with oxygen therapy) must be supported with mechanical ventilation. Invasive mechanical ventilation is preferred choice. Non invasive ventilation is an option when mechanical ventilation is not available. To reduce spread of infectious aerosols, use of HEPA filters on expiratory ports of the ventilator circuit / high flow oxygen masks is recommended.
- Maintain airway, breathing and circulation (ABC);
- Maintain hydration, electrolyte balance and nutrition.
- If the laboratory reports are negative, the patient would be discharged after giving full course of oseltamivir. Even if the test results are negative, all cases with strong epidemiological criteria need to be followed up.
- Immunomodulating drugs has not been found to be beneficial in treatment of ARDS or sepsis associated multi organ failure. High dose corticosteroids in particular have no evidence of benefit and there is potential for harm. Low dose corticosteroids (Hydrocortisone 200-400 mg/ day) may be useful in persisting septic shock (SBP < 90).
- Suspected case not having pneumonia do not require antibiotic therapy. Antibacterial agents should be administered, if required, as per locally accepted clinical practice guidelines. Patient on

mechanical ventilation should be administered antibiotics prophylactically to prevent hospital associated infections.

4.5 Discharge Policy

- Adult patients should be discharged 7 days after symptoms have subsided.
- Children should be discharged 14 days after symptoms have subsided.
- The family of patients discharged earlier should be educated on personal hygiene and infection control measures at home; children should not attend school during this period.

4.6 Chemo Prophylaxis

- All close contacts of suspected, probable and confirmed cases. Close contacts include household /social contacts, family members, workplace or school contacts, fellow travelers etc.
- All health care personnel coming in contact with suspected, probable or confirmed cases
- Oseltamivir is the drug of choice.
- Prophylaxis should be provided till 10 days after last exposure (maximum period of 6 weeks)
    - By Weight:

- For weight <15kg 30 mg OD
- 15-23kg 45 mg OD
- 24-<40kg 60 mg OD
- >40kg 75 mg OD

    - For infants:

- < 3 months not recommended unless situation judged critical due to limited data on use in this age group
- 3-5 months 20 mg OD
- 6-11 months 25 mg OD

4.7 Non-Pharmaceutical Interventions

- Close Contacts of suspected, probable and confirmed cases should be advised to remain at home (voluntary home quarantine) for at least 7 days after the last contact with the case. Monitoring of fever should be done for at least 7 days. Prompt testing and hospitalization must be done when symptoms are reported.
- All suspected cases, clusters of ILI/SARI cases need to be notified to the State Health Authorities and the Ministry of Health & Family Welfare, Govt. of India (Director, EMR and NICD)

5. Laboratory Tests

- The samples are to be tested in BSL-3 laboratory. At present the following laboratories are the identified laboratories for this purpose:

(i) National Institute of Communicable Diseases, 22, Sham Nath Marg, Delhi [Tel. Nos. Influenza Monitoring Cell: 011-23921401; Director: 011-23913148]

(ii) National Institute of Virology, 20-A, Dr. Ambedkar Road, Pune-411001 [Tel.No. 020-26124386]

Guidelines on Infection control Measures

1. Infection control measures at Individual level

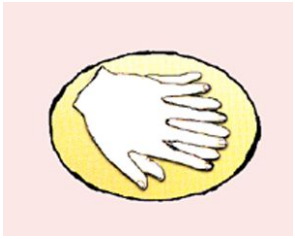
1.1 Hand Hygiene

Hand hygiene is the single most important measure to reduce the risk of transmitting infectious organism from one person to other.

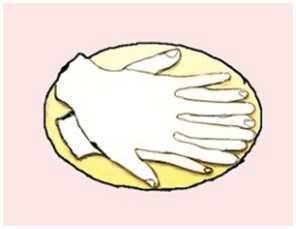
Hands should be washed frequently with soap and water / alcohol based hand rubs/ antiseptic hand wash and thoroughly dried preferably using disposable tissue/ paper/ towel.

- After contact with respiratory secretions or such contaminated surfaces.
- Any activity that involves hand to face contact such as eating/ normal grooming / smoking etc.

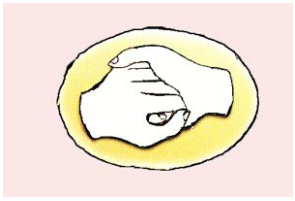
Steps of hand washing



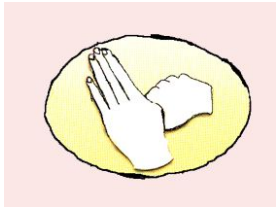
Step 1.
Wash palms and fingers.



Step 2.
Wash back of hands.



Step 3.
Wash fingers and knuckles.



Step 4.
Wash thumbs.

Step 5.
Wash fingertips.

Step 6.
Wash wrists.

1.2 Respiratory Hygiene/Cough Etiquette

The following measures to contain respiratory secretions are recommended for all individuals with signs and symptoms of a respiratory infection.

- Cover the nose/mouth with a handkerchief/ tissue paper when coughing or sneezing;
- Use tissues to contain respiratory secretions and dispose of them in the nearest waste receptacle after use;
- Perform hand hygiene (e.g., hand washing with non-antimicrobial soap and water, alcohol-based hand rub, or antiseptic hand wash) after having contact with respiratory secretions and contaminated objects/materials

1.3 Staying away

- Stay away from infected cases. If contact is inevitable, maintain at least arms length.
- Avoid hand shake
- Wash hands if in contact with a suspect case.

1.4 Use of mask

Three layered surgical mask is recommended for all cases and immediate family and social contacts.

1.5 Other Non-pharmaceutical interventions at Individual/ community level

Non-Pharmaceutical interventions such as quarantine, isolation and social distancing measures reduce transmission and reduce overall impact of the pandemic (dealt under section 4 and 5)

2. Infection control practices for Health facility

2.1 During Pre Hospital Care

- Standard precautions are to be followed while transporting patient to a health-care facility. The patient should also wear a three layer surgical mask.
- Aerosol generating procedures should be avoided during transportation as far as possible.
- The personnel in the patient's cabin of the ambulance should wear full complement of PPE including N95 masks, the driver should wear three layered surgical mask.
- Once the patient is admitted to the hospital, the interior and exterior of the ambulance and reusable patient care equipment needs to be sanitized using sodium hypochlorite / quaternary ammonium compounds.
- Recommended procedures for disposal of waste (including PPE used by personnel) generated in the ambulance while transporting the patient should be followed.

2.2 During Hospital Care

- The patient should be admitted directly to the isolation facility and continue to wear a three layer surgical mask.
- The identified medical, nursing and paramedical personnel attending the suspect/ probable / confirmed case should wear full complement of PPE (including N95 mask). If splashing with blood or other body fluids is anticipated, a water proof apron should be worn over the PPE.
- Aerosol-generating procedures such as endotracheal intubation, nebulized medication administration, induction and aspiration of sputum or other respiratory secretions, airway suction, chest physiotherapy and positive pressure ventilation should be performed by the treating physician/ nurse wearing full complement of PPE with N95 respirator on.
- Sample collection and packing should be done under full cover of PPE.
- Perform hand hygiene before and after patient contact and following contact with contaminated items, whether or not gloves are worn.
- Until further evidence is available, infection control precautions should continue in an adult patient for 7 days after resolution of symptoms and 14 days after resolution of symptoms for children younger than 12 years because of longer period of viral shedding expected in children. If the patient insists on returning home, after resolution of fever, it may be considered, provided the patient and household members follow recommended infection control measures and the cases could be monitored by the health workers in the community.
- The virus can survive in the environment for variable periods of time (hours to days). Cleaning followed by disinfection should be done for contaminated surfaces and equipments.

- The virus is inactivated by a number of disinfectants such as 70% ethanol, 5% benzalkonium chloride (Lysol) and 10% sodium hypochlorite. Patient rooms/areas should be cleaned at least daily and finally after discharge of patient. In addition to daily cleaning of floors and other horizontal surfaces, special attention should be given to cleaning and disinfecting frequently touched surfaces. To avoid possible aerosolization of the virus, damp sweeping should be performed. Horizontal surfaces should be dusted by moistening a cloth with a small amount of disinfectant.
- Clean heavily soiled equipment and then apply a disinfectant effective against influenza virus (mentioned above) before removing it from the isolation room/area. If possible, place contaminated patient-care equipment in suitable bags before removing it from the isolation room/area.
- When transporting contaminated patient-care equipment outside the isolation room/area, use gloves followed by hand hygiene. Use standard precautions and follow current recommendations for cleaning and disinfection or sterilization of reusable patient-care equipment.
- All waste generated from influenza patients in isolation room/area should be considered as clinical infectious waste and should be treated and disposed in accordance with national regulations pertaining to such waste. When transporting waste outside the isolation room/area, gloves should be used followed by hand hygiene.

2.3 Guidelines for waste disposal

- All the waste has to be treated as infectious waste and decontaminated as per standard procedures
- Articles like swabs/gauges etc are to be discarded in the Yellow coloured autoclavable biosafety bags after use, the bags are to be autoclaved followed by incineration of the contents of the bag.
- Waste like used gloves, face masks and disposable syringes etc are to be discarded in Blue/White autoclavable biosafety bags which should be autocalaved / microwaved before disposal

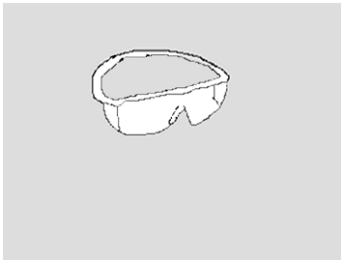
  All hospitals and laboratory personnel should follow the standard guidelines (Biomedical waste management and handling rules, 1998) for waste management.

Annexure XXII

Standard Operating Procedures on Use of PPE

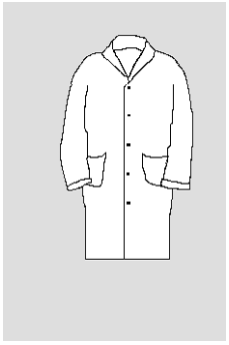
Personal Protection Equipments

PPE reduces the risk of infection if used correctly. It includes:
• Gloves (nonsterile),
• Mask (high-efficiency mask) / Three layered surgical mask,
• Long-sleeved cuffed gown,
• Protective eyewear (goggles/visors/face shields),
• Cap (may be used in high risk situations where there may be increased aerosols),
• Plastic apron if splashing of blood, body fluids, excretions and secretions is anticipated.



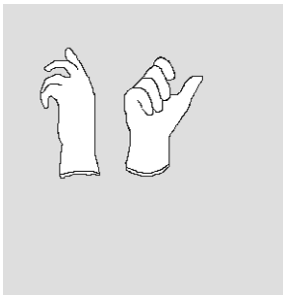
Goggles

N-95 Mask
OR

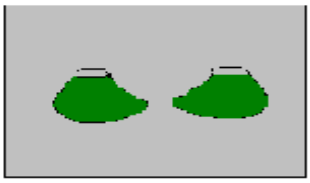


Gown(must for lab work)

Triple layer Mask



Gloves



Shoe covers

The PPE should be used in situations were regular work practice requires unavoidable, relatively closed contact with the suspected human case / poultry.

Correct procedure for applying PPE in the following order:

1. Follow thorough hand wash
2. Wear the coverall.
3. Wear the goggles/ shoe cover/and head cover in that order.
4. Wear face mask
5. Wear gloves

The masks should be changed after every six to eight hours.

Remove PPE in the following order:

• Remove gown (place in rubbish bin).
• Remove gloves (peel from hand and discard into rubbish bin).
• Use alcohol-based hand-rub or wash hands with soap and water.
• Remove cap and face shield (place cap in bin and if reusable place face shield in container for decontamination).
• Remove mask - **by grasping elastic behind ears – do not touch front of mask**
• Use alcohol-based hand-rub or wash hands with soap and water.
• Leave the room.
• Once outside room use alcohol hand-rub again or wash hands with soap and water.

Do's and Don'ts for the Community

DO:

* Wash your hands
* Avoid crowded places
* Stay more than an arm's length from persons afflicted with flu
* Get plenty of sleep
* Drink plenty of water and eat nutritious food

DO NOT:

* Shake hands or hug in greeting
* Spit in public
* Take medicines without consulting a physician

For people who are sick:

* Stay home and limit contacts with others as much as possible
* Rest and take plenty of liquids
* Cover your mouth and nose when you cough or sneeze
* Seek medical advice if needed.

Frequently asked questions

How do people become infected with influenza A(H1N1)?

Outbreaks in humans are now occurring from human-to-human transmission. When infected people cough or sneeze, infected droplets get on their hands, drop onto surfaces, or are dispersed into the air. Another person can breathe in contaminated air, or touch infected hands or surfaces, and be exposed.

What are the signs and symptoms of infection?

Early signs of influenza A(H1N1) are flu-like, including fever, cough, headache, muscle and joint pain, sore throat and runny nose, and sometimes vomiting or diarrhoea. Like seasonal flu, swine flu may cause a worsening of underlying chronic medical conditions.

Is there any confirmation of transmission between pigs and humans at this point?

No.

How long someone with the flu infect someone else?

Infected people may be able to infect others beginning one day before symptoms develop and up to seven or more days after becoming sick.

What surfaces are most likely to be sources of contamination?

Germs can be spread when a person touches something that is contaminated with germs and then touches his or her eyes, nose, or mouth. Droplets from a cough or sneeze of an infected person move through the air.

How long can viruses live outside the body?

We know that some viruses and bacteria can live two hours or longer on surfaces like cafeteria tables, doorknobs, and desks. Frequent hand washing will help you reduce the chance of getting contamination from these common surfaces.

What can I do to protect myself from getting sick?

Currently available seasonal influenza vaccine does not protect against H1N1 flu. There are everyday actions that can help prevent the spread of germs that cause respiratory illnesses like influenza. Take these everyday steps to protect your health:

- Cover your nose and mouth with a tissue when you cough or sneeze. Throw the tissue in the trash after you use it.
- Wash your hands often with soap and water, especially after you cough or sneeze. Alcohol based hand cleaners are also effective.
- Avoid touching your eyes, nose or mouth. Germs spread this way.
- Try to avoid close contact with people having respiratory illness.
- If one gets sick with influenza, one must stay at home, away from work or school and limit contact with others to keep from infecting them. However, if one is having any respiratory distress, one should report to a nearby hospital.

What should I do to keep from getting the flu?

First and most important: wash your hands frequently. Try to stay in good general health. Get plenty of sleep, be physically active, manage your stress, drink plenty of fluids, and eat nutritious food. Avoid touching surfaces that may be contaminated with the flu virus. Avoid close contact with people having respiratory illness.

Are there medicines to treat swine flu?

Yes. Oseltamivir is the recommended anti viral drug for the treatment and/or prevention of infection with the influenza A H1N1. If you get sick, antiviral drugs can make your illness milder and make you feel better faster. They may also prevent serious flu complications. For treatment, antiviral drugs work best if started soon after getting sick (within 2 days of symptoms). Government has adequate stock and the drug is made available to government hospitals at the time of outbreak and would be available to you free of cost. . The drug is to be administered under supervision of clinicians.

What should I do if I get sick?

If you live in areas where influenza A H1N1 cases have been identified and become ill with influenza like symptoms e.g. fever, body aches, runny nose, sore throat, nausea, or vomiting or diarrhea, you may contact their health care provider, particularly if you are worried about your symptoms. Your health care provider will determine whether influenza testing or treatment is needed. If you are sick, you should stay home and avoid contact with other people as much as possible to keep from spreading your illness to others. If you become ill and experience any of the following warning signs, seek emergency medical care.

In children emergency warning signs that need urgent medical attention include:

- Fast breathing or trouble breathing
- Bluish skin color
- Not drinking enough fluids/eating food
- Not waking up or not interacting
- Being so irritable that the child does not want to be held

- Flu-like symptoms improve but then return with fever and worse cough
- Fever with a rash

In adults, emergency warning signs that need urgent medical attention include:

- Difficulty breathing or shortness of breath
- Pain or pressure in the chest or abdomen
- Sudden dizziness
- Confusion
- Severe or persistent vomiting

Can I get influenza A H1N1 from eating or preparing pork?

No. swine influenza viruses are not spread by food. Eating properly handled and cooked pork products is safe.