

Seasonal Influenza

Compiled information for Rapid Response Teams (RRT)

Composition of District level RRT:

Rapid Response Team (RRT) at district level is a multidisciplinary team of experienced experts comprising of –

- Additional / Deputy CMO Vector born diseases (Team Leader)
- Clinician (Physician / Paediatrician),
- Public health expert / Epidemiologist,
- Pathologist / lab technician,
- Representative of Social and Preventive Medicine department of Medical college located in the district (if any),
- Social mobilization / communication expert,
- Representative of WHO & Unicef working in the district,
- Veterinary expert
- Any other member considering the local situation

All the districts should review the composition of their Rapid response team. RRT should be available and on stand-by to respond to an outbreak in any part of the as early as possible (not later than 24 hours).

Roles and Responsibilities of RRT:

➤ Preoutbreak phase

Preparedness for an outbreak helps in a timely response and rapid containment of the outbreak. In the preoutbreak period RRT should review the-

- Availability of logistics in the district / block / health facility (PPE / Vaccine / N 95 masks / Oseltamivir)
- Capacity building and vaccination of relevant medical and paramedical workers
- Communication plan to educate the masses for prevention of spread of infection
- Earmarking an isolation ward having at least 10 beds in every district hospital

➤ During the outbreak

- Prompt investigation of notified cases (Within 24 hours of notification) using attached CIF (Case investigation form) and its regular follow up
- Provide healthcare depending on the categorization of the patient,
- Collect specimen of identified cases and arrange for shipment to designated lab
- Conduct detailed Epidemiological investigation for detection of additional cases by-
- Contact tracing and their regular follow up for emergence of symptoms
- Stepping up surveillance in the nearby health facilities (Government / private hospital and clinics)
- Active case search in the community with the help of local health workers (Health supervisors, health assistants, lady health visitors, BHW and ASHA)
- Review measures for infection prevention and control including inspection of hospitals for adherence to standard guidelines
- Engage with the community and other stakeholders where necessary.
- Regular data analysis along with spot mapping of cases

➤ After the outbreak:

Detailed analysis of data to take lessons for future

Categorization of Seasonal Influenza cases:

All individuals seeking consultations for flu like symptoms should be screened and categorized as:

Category- A

- Patients with mild fever plus cough / sore throat with or without body ache, headache, diarrhoea and vomiting will be categorized as Category-A.
- They **do not require Oseltamivir** and should be treated for the symptoms mentioned above. The patients should be monitored for their progress and **reassessed at 24 to 48 hours** by the doctor.
- **No testing of the patient for Influenza is required.**
- **Patients should confine themselves at home and avoid mixing up with public and high-risk members in the family.**

Category-B

(i) In addition to all the signs and symptoms mentioned under Category-A, if the patient has high grade fever and severe sore throat.

(ii) In addition to all the signs and symptoms mentioned under Category-A, individuals having one or more of the following high-risk conditions -

- Children with mild illness but with predisposing risk factors.
- Pregnant women;
- Persons aged 65 years or older;
- Patients with lung diseases, heart disease, liver disease, kidney disease, blood disorders, diabetes, neurological disorders, cancer and HIV/AIDS;
- Patients on long term cortisone therapy.

No tests for Influenza is required for Category-B (i) and (ii).

All patients of Category-B (I) and (ii) should confine themselves at home and avoid mixing with public and high-risk members in the family.

Treatment with Oseltamivir required.

Broad Spectrum antibiotics as per the Guideline for Community acquired pneumonia (CAP) may be prescribed.

Category-C

In addition to the above signs and symptoms of Category-A and B, if the patient has one or more of the following:

- Breathlessness, chest pain, drowsiness, fall in blood pressure, sputum mixed with blood, bluish discolouration of nails;
- Children with influenza like illness who had a severe disease as manifested by the red flag signs (Somnolence, high and persistent fever, inability to feed well, convulsions, shortness of breath, difficulty in breathing, etc).
- Worsening of underlying chronic conditions.

All Category-C patients require testing, immediate hospitalization and treatment.

Recommendation for treatment of cases:

Guiding principles for treating seasonal influenza patients are:

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

Isolation:

Category A and B patients should confine themselves at home and avoid mixing up with public and high- risk members in the family.

Category C patients require hospitalization. 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 and other supportive equipment.

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

Standard Operating Procedures

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

Oseltamivir Medication:

Oseltamivir is the recommended drug for treatment. Also available as syrup in the concentration of 12mg per ml.

Recommended dose for adults			
Body weight (Kg)	Recommended dose (mg)	Frequency	Duration (no of days)
<15 kg	30 mg	Twice daily	5 days
15-23 kg	45 mg		
24-<40 kg	60 mg		
>40 kg	75 mg		

Recommended dose for infants			
Age (months)	Dose (mg)	Frequency	Duration (no of days)
<3 months	12 mg	Twice daily	5 days
3-5 months	20 mg		
6-11 months	25 mg		

If needed dose & duration can be modified as per clinical condition. Supportive therapy for associated chronic illness and complications should be as per standard protocol.

Adult patients should be discharged 7 days after symptoms have subsided. Children should be discharged 14 days after symptoms have subsided.

Recommended steps for additional Case finding:

Case finding is an active process whereby suspected and probable cases as defined by the established case definition are sought from the population at risk, through contact tracing, active case searches and enhanced surveillance in the area:

Contact tracing

The main aims of contact tracing is to identify, in a timely manner, new cases to limit the spread of an outbreak, and to understand the transmission dynamics of the causative agent by early detection, isolation and clinical management of new cases.

In an epidemiological investigation, contact tracing has three elements, namely (i) contact identification; (ii) contact listing; and (iii) contact follow-up which usually occurs over a specified time period (normally a minimum of one incubation period).

Contact tracing activities should include all suspected, probable and confirmed cases as well as suspected deaths resulting from infection with the pathogen. Death due to the suspected pathogen may be verified by a verbal autopsy.

Contacts can be classified as:

(i) **Close contact:** an individual(s) who had had direct contact, defined as being within a distance of less than one meter from a case and/or had discussion of more than three words with a case. A close contact may have had face-to-face contact with the patient, shared a meal or the same room with the patient, cared for the patient during the infectious period or contacted the patient's belongings.

(ii) **Possible or casual contact:** A possible or casual contact may have been exposed to the patient through other circumstances.

Contacts should be listed at appropriate place of case investigation form. **Contacts should be followed for a defined period of time i.e. a time period greater than the incubation period for the disease being investigated (Seven days for seasonal influenza)**, and data recorded indicating if they (the contact) are exhibiting signs or symptoms.

If a contact shows signs and symptoms for the disease under investigation, appropriate measures should be taken to isolate and treat the individual. This individual then becomes a suspected or probable case and subsequently his/her contacts would likely be followed-up. Period of Communicability is 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.

Active case searches and enhanced surveillance activities:

During Community ACS and enhanced surveillance activities emphasis should be placed on-

- (i) Persons who may have been co-exposed to the same source as the case patient,
- (ii) Persons with similar environmental or occupational exposures;
- (iii) Persons with unexplained acute lower respiratory infection with fever and/or persons who died of an unexplained respiratory illness with fever.
- (iv) Enhancing existing surveillance systems in these locations, where animal outbreaks are occurring or where the source of infection is suspected.

Case-finding may involve reviewing health facility records, including hospitals, laboratories, private health clinics, and community visits such as to schools or house-to-house searches. Communication announcements may be used to identify remaining and/or unreported cases.

The duration of enhanced surveillance and geographical area targeted will depend on the outbreak context, in particular the suspected exposures for the outbreak. The scope of the enhanced surveillance activities depends on the healthcare seeking behaviour of the population.

The success of enhanced surveillance efforts will depend on training of health professionals, local public health investigators and education of the community-at-large to be alert for possible cases. Encourage early self-reporting of illness and consultation with public health facilities such as establishing fever clinics so that prompt and appropriate testing and clinical care can be provided. In addition, provide the affected community with appropriate education and prevention and intervention measures to reduce the risk of acquiring infection from human and animal sources.

Case definition:

For investigation of any outbreak, clearly defined case definitions are essential to select all cases or possible cases and to reduce time spent on patients with illness due to other diseases. A case definition is a set of criteria used for identifying individuals as having the disease of interest.

Suspected pandemic (H1N1) virus infection: *An individual presenting with influenza-like illness (sudden onset of fever $> 38^{\circ}\text{C}$ and cough or sore throat, in the absence of another diagnosis) with a history of exposure to a A(H1N1) virus.*

Confirmed pandemic A(H1N1) virus infection: *An individual with a laboratory-confirmed pandemic A(H1N1) virus infection by one or more of the following tests: PCR; viral culture; 4-fold rise in pandemic A(H1N1) virus-specific neutralizing antibodies.*

Cases may be defined as:

Suspected case: *an individual where signs and symptoms meet the case definition;*

Probable case: *any suspected case with an epidemiological link to a confirmed case or animal exposure, but without laboratory confirmation;*

Confirmed case: *a suspected case where diagnostic laboratory results have confirmed the infection.*

Recommendation for sampling and shipment of specimen:

Confirmation of seasonal influenza (including H1N1) infection is through following investigations:

- **Real time PCR** (Preferred)
 - Isolation of the virus in culture or
 - Four-fold rise in virus specific neutralizing antibodies.
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- Clinical specimens such as nasopharyngeal swab, throat swab, nasal swab, wash or aspirate, and tracheal aspirate (for intubated patients) are to be obtained.
 - Sample should be collected by a trained person preferably before administration of the anti-viral drug.
 - The samples should be transported to designated lab within 24 hours at 4°C temperature.
 - Keep specimens at 4°C in viral transport media (VTM) until transported for testing.
 - If they cannot be transported within 24 hours then it needs to be stored at -70°C .
 - Cap of the viral transport media tube should be secured properly to avoid any leakage.

Data collection and analysis:

The collection of comprehensive, good quality data from identified cases is critical. To maintain uniformity in data collection and to ensure quality in case investigation a uniform CIF has been designed and is being circulated along with these guidelines. Collection & analysis of good quality epidemiological data is critical for an outbreak investigation as it gives insight for planning response and containment activities. All the districts should prepare, update and analyse- Line list, distribution of disease in terms of time, place and person including risk factors, epidemic curve and spot maps.

Information flow:

One the case has been notified by any health facility / health worker / media it should be promptly investigated by RRT using attached ‘case investigation form’ within 24 hours of notification. Each case should be allocated unique identification no of 16 districts (First 3 letters for the disease ie INF, Next three letters for the country ie IND, next three letters for the district, next two letters for the year and last three letters for the serial number of the case in the district during the year) by the district surveillance officer. For example – the first case of year 2017 of district Lucknow will have EPID no: INF-IND-UP-LNO-17-001. District code list will be shared by State epidemiology cell, Swastha Bhawan separately.

The case should be entered in the line list and uploaded at the portal same day. The information in the line list / portal should be updated regularly to ensure real time transmission of data to the state.

Tips for effective communication:

A communication plan encompassing all facets of the outbreak should be developed early and should include strategies for communication with the public, other government departments, private practitioners and other stakeholders. For effective communication -

- Identify a spokesperson at the district level.
- He should develop good relationships with local media so that an effective partnership is established for delivery of accurate, transparent and timely messages to the population.
- Spokesperson will share regular updates (including steps being taken by authorities to tackle the outbreak) with local media.
- Key messages developed at national / state level should be incorporated during briefing of the local media.

Communication with the public is very vital in outbreak control. Education messages for the community should focus on recognition of the disease, how to prevent it and when to seek treatment. It is vital to-

- engage the community to build trust,
- deliver transparent, factual, accurate, candid and easily understandable messages,
- engage with the community to ascertain their concerns and address them and
- planned and delivered messages in real time.
- circulate a helpline number for addressing queries / concerns of the masses

Recommendation on Vaccination:

Government of India recommends vaccination of below mentioned High Risk Groups with Seasonal Influenza Vaccine:

- Health Care workers, working in hospital / institutional settings (doctors, nurses, paramedics, supportive staff) with likelihood of exposure to Influenza virus
- Pregnant women, irrespective of the duration of pregnancy.
- Persons with chronic illnesses such as Chronic Obstructive Pulmonary Disease, Bronchial Asthma, Heart disease, Liver disease, Kidney disease, Blood disorders, Diabetes, Cancer and for those who are immunocompromised
- Vaccination is desirable for Elderly individuals (≥ 65 years of age) and Children between 6 months to 8 years of age

Limitations of Influenza vaccine:

Influenza vaccination is most effective when circulating viruses are well-matched with vaccine viruses. Even with appropriate matching, efficacy of vaccine may be about 70% to 80%. In case the locally circulating virus is different from vaccine virus recommended by WHO, it may be partially effective or not be effective at all. Hence, vaccine should not give a false sense of security. Considering the risk perspective, the modalities of infection prevention and control practices should be strictly adhered to.

Public health interventions directed at the source / susceptible individuals to prevent transmission & further spread of an outbreak

- Treat infected person using antibiotics or antiviral agents;
- Isolate infected persons;
- Quarantine exposed persons or contaminated sites/sources
- Prevent mass gatherings and limit people's movement
- Modify behaviour, such as increased hand washing, cough etiquettes, maintaining arm's length distance from others, avoid hand shaking, wearing of surgical mask
- Clean and disinfect contaminated surfaces by wiping, with sodium hypochlorite solution or with household bleach (5%) solution.
- Vaccinate medical and paramedical workers involved in taking care of infected persons
- Wash hands with soap and water before and after handling linens and towels used by the patient.
- 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.

Recommendations on use of masks:

N 95 respirator and **triple layer surgical masks** (of appropriate specifications) are personal protective devices which if used correctly would protect the user from contracting Seasonal Influenza or for that matter, any other aerosol/droplet borne/air-borne infection. Use of appropriate masks is mandatory for all health personnel working in an infective environment (screening area, isolation ward, laboratory, ICU, mortuary, ambulance). The recommendation regarding type of mask, to be used is related to risk profile of the category of personnel and his / her work.

N 95 respirator should necessarily be used by-

- Medical and nursing staff involved in critical care of patient in Intensive Care Unit,
 - Personnel working in laboratories and handling clinical samples related to Influenza
 - Isolation Ward staff involved in any aerosol generating procedures like suction, intubation, nebulization, etc.
 - Medical personnel collecting clinical samples from the patients.
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- Suspect/ probable/confirmed cases of influenza should use Triple layer surgical mask. The care provider in home care settings should use triple layer mask. Close family contacts of such cases undergoing home care should also use Triple layer surgical mask.
 - Disposable masks are never to be reused and should be disposed of. While removing the mask great care must be taken not to touch the potentially infected outer surface of the mask.
 - Used mask should be considered as potentially infected medical waste. In the hospital setting it should be disposed of in the identified infectious waste disposal bag/container. Health facilities should adopt appropriate Bio-medical Waste Management practices for disposal of used masks.
 - In community setting it may be disposed of either by burning or deep burial. Masks used by patients / care givers/ close contacts during home care and should be disinfected using ordinary bleach solution (5%) or sodium hypochlorite solution (1%) or appropriate concentration of Quaternary Ammonium household disinfectant and then disposed of either by burning or deep burial.
 - There is no scientific evidence to show health benefit of using triple layer masks for members of public. In fact erroneous use of masks or continuous use of a disposable mask for longer than 6 hours or repeated use of same mask may actually increase risk of infection further.