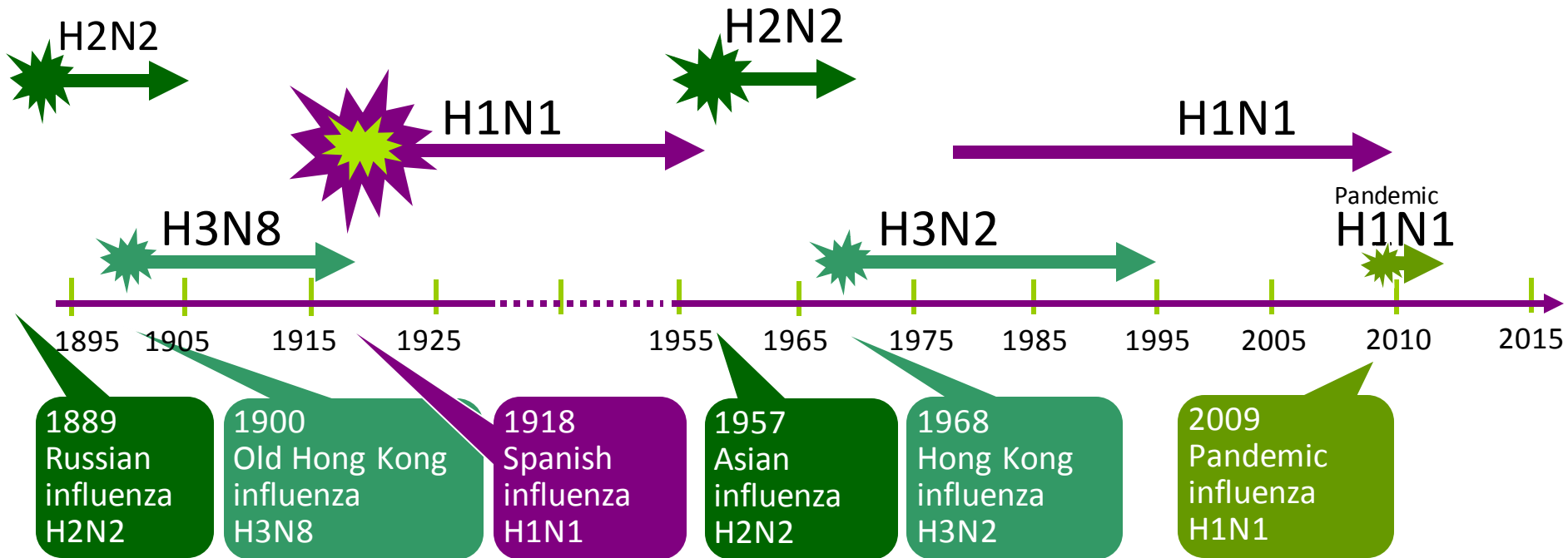


# Influenza A (H1N1)

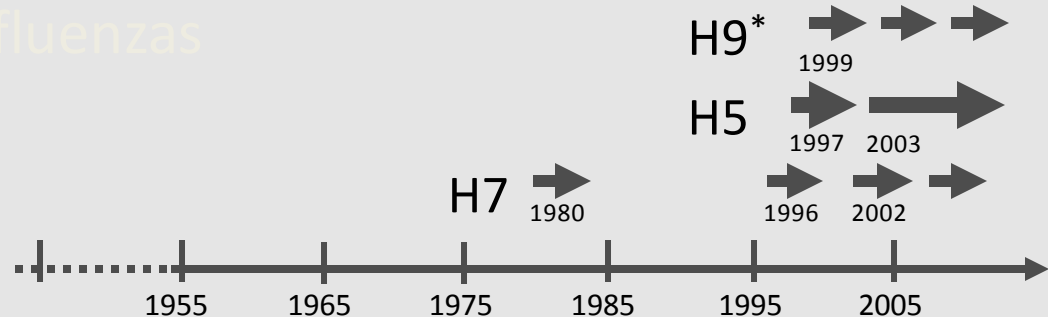
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# Pandemics of influenza

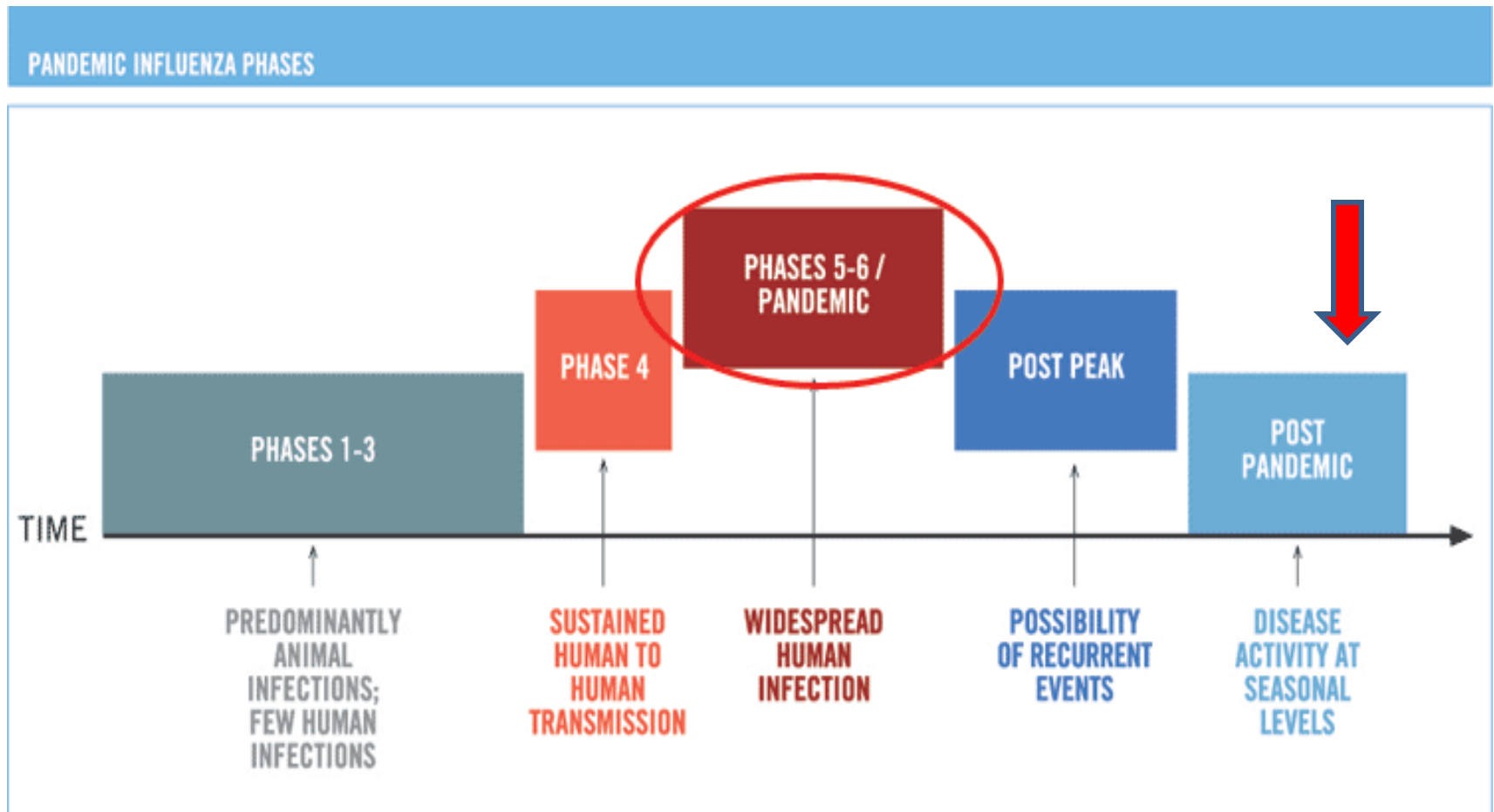
Recorded human pandemic influenza  
(early sub-types inferred)



Recorded new avian influenzas



# Phases of Pandemic Influenza



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# Background

- Recent outbreak started from Mexico.
- First case reported on 18<sup>th</sup> March 2009
- First case reported in May 2009 in Hyderabad
- WHO declared swine flu as seasonal flu
- However any fever in people with co-morbid conditions are to be treated carefully

\* Press release MOHFW website

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# Mode of transmission

- People become infected by touching something with live flu viruses on it and then touching their mouth or nose  
(More than 80%)
- Viruses are spread from person to person by droplet through coughing or sneezing of people with influenza.

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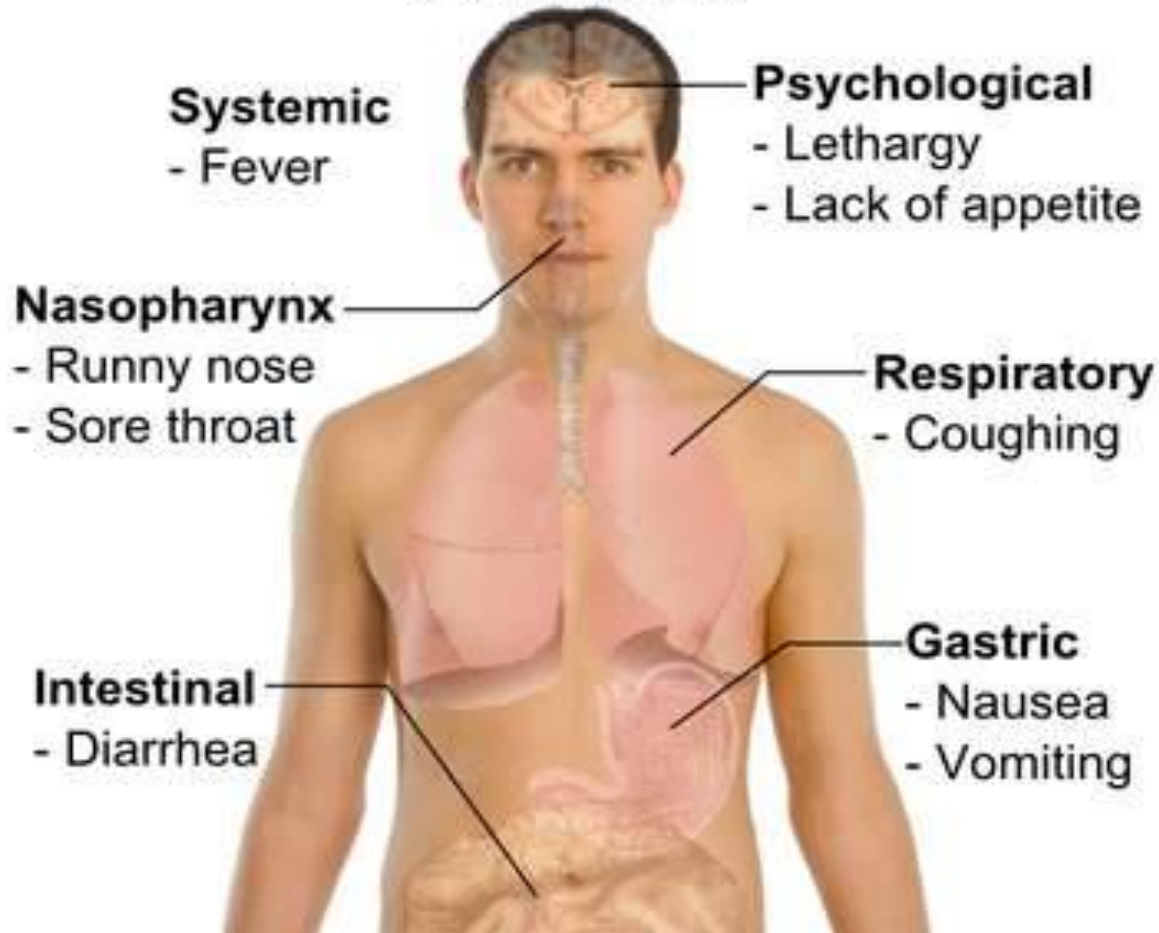
# Communicability

- From one day before to 7 days after the onset of symptoms.
- If illness persists for more than 7 days, communicability may persist.
- Children, especially younger children, might potentially be contagious for longer periods.

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# Clinical features

## Symptoms of Swine flu



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Vomiting or diarrhoea (not typical for influenza but reported by recent cases of swine influenza infection)

# Other Manifestations

- Tachycardia
- Tachypnoea
- Low O2 sat.
- Hypotension
- Cyanosis
- Acute myocarditis
- Cardiopulmonary arrest

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# High Risk Groups

- Asthma
- Pregnancy
- Age above 65 Years
- Children under five years
- Chronic lung disease
- Chronic heart disease
- Chronic kidney disease
- Chronic liver disease
- Chronic neurological disease
- Immunosuppressant (whether caused by disease or treatment)
- Diabetes mellitus
- Obesity

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# Categorisation of cases

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# Category- A

- **Mild fever plus sore throat /cough with or without body ache, headache, diarrhea/vomiting.**

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# Category-B

**B (i) : A+ High grade fever and severe sore throat.**

**B (ii) : A + HIGH RISK GROUPS**

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# Category-C

**Category A or B with 1 or more of the following**

- **Breathlessness,**
- **chest pain,**
- **drowsiness,**
- **hypotension,**
- **cyanosis,**
- **irritability or worsening of the existing chronic condition**

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# Investigations

- **Routine investigations for evaluation and management of symptoms**
  - Hematological, bio chemical, radiological and micro biological tests
- **Confirmation of influenza**
  - RT - PCR
  - Isolation of virus in culture
  - Four fold rise in virus specific neutralizing antibodies

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# Specimens

- Nasopharyngeal swab, nasal swab, throat swab, combined oro pharyngeal / nasopharyngeal swab or nasal aspirate
- Specimens should be placed in viral transport media and placed on ice (4°C) or refrigerated immediately for transportation to the laboratory
- Respiratory specimen should be collected within 4 to 5 days of illness.

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# Technique for nasal swab collection



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# Management

- Early implementation of Infection Control precautions to minimize spread of disease
- Prompt treatment to prevent severe illness and death
  - Supportive treatment (Antipyretics, antibiotics, IV fluids, Oxygen therapy, nutrition, saline gorgling etc)
  - Specific anti viral treatment (Oseltamivir)
- Early identification and follow up of persons at risk
- Contact treatment for primary contacts of laboratory confirmed cases

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# Antiviral treatment

- Oseltamivir is the drug of choice for treatment and chemoprophylaxis.
- Available in capsule (75 mg and 30 mg) and syrup form (75 ml bottle= 12 mg per ml)
- For treatment, antiviral drugs work best if started soon after getting sick
- Reduces the duration of virus excretion and the severity of illness

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# Antiviral treatment for cases

- Duration of treatment: 5 days BD
- Dosage schedule

Weight	Dosage
<15 kg	30 mg BD 5Days
15-23 kg	45 mg BD 5Days
24 to <40kg	60 mg BD 5Days
>40 kg	75 mg BD 5Days

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# Antiviral treatment for cases- Infants

- Duration of treatment: 5 days BD
- Available as oral suspension
- Dosage schedule

Months	Dosage
<3 months	12mg BD 5Days
3-5 months	20mg BD 5Days
6-11 months	25mg BD 5Days

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# Contact tracing and chemoprophylaxis

- Powerful public health intervention to interrupt the transmission
- All contacts of confirmed cases are to be administered with Oseltamivir irrespective of whether they have symptoms or not

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# Antiviral dosage for chemoprophylaxis

- Duration of treatment: 10 days OD
- Dosage schedule

Weight	Dosage
<15 kg	30 mg OD 10 Days
15-23kg	45mg OD 10 Days
24to<40kg	60mg OD 10 Days
>40 kg	75mg OD 10 Days

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# Antiviral dosage for chemoprophylaxis -infants

- Duration of treatment: 10 days OD
- Chemoprophylaxis not recommended for children below 3 months generally
- Dosage schedule

Months	Dosage
3-5 months	20 mg OD 10 Days
6-11 months	25 mg OD 10 Days

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# Disinfectants

- **1% Sodium or Calcium hypochlorite solution**
- **5% lysol**
- **Surgical spirit with minimum of 70% alcohol**

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# Disinfection of the houses

- House has to be decontaminated with 5% lysol or hypochlorite solution and surfaces touched by hands to be wiped with surgical spirit
- Clothes and linen to be decontaminated with 1% sodium or calcium hypochlorite solution

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# Fever surveillance

- Monitor the contacts for fever
- Look for fever cases in the neighbourhood

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# What should I do?

- **First and most important: wash your hands**
- **Practice cough etiquette**
- **Get plenty of sleep**
- **Drink plenty of fluids**
- **Avoid touching surfaces that may be contaminated with the flu virus.**
- **Avoid close contact with people who are sick.**

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# What should I do?

- **Staying at home if you have flu like symptoms**
- **Educating school children and staff, advising avoidance of mass gatherings**
- **Avoid crowded places, avoid hand shaking**

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# Guidelines for hand washing in Health Care Settings

- Use surgical spirit (70% alcohol or more)
- Wash hands before and after seeing every patient
- Discard basins with antiseptic lotions for hand washing: Hand wash only with running water

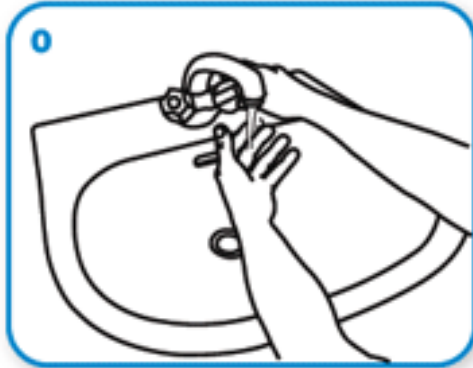
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# Hand washing for common people

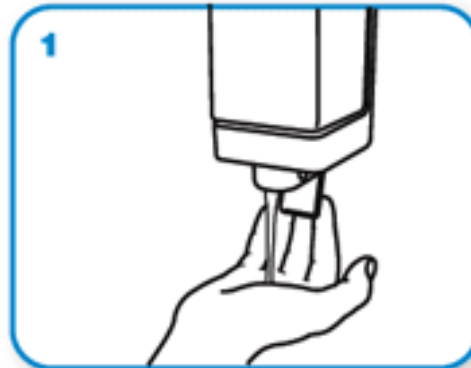


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# Hand Hygiene



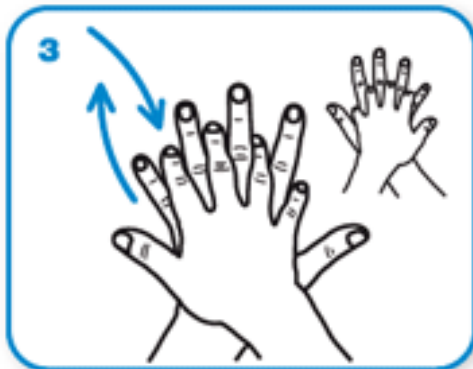
Wet hands with water



apply enough soap to cover all hand surfaces.



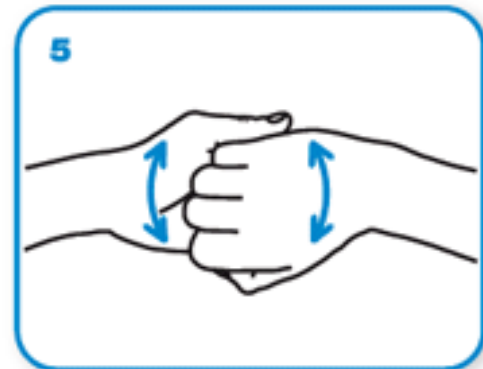
Rub hands palm to palm



right palm over left dorsum  
with interlaced fingers  
and vice versa



palm to palm with fingers  
interlaced



backs of fingers to opposing  
palms with fingers interlocked

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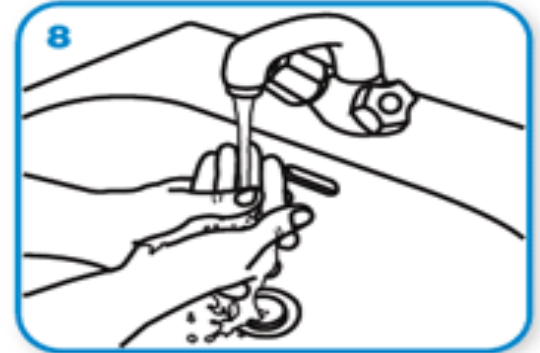
# Hand Hygiene



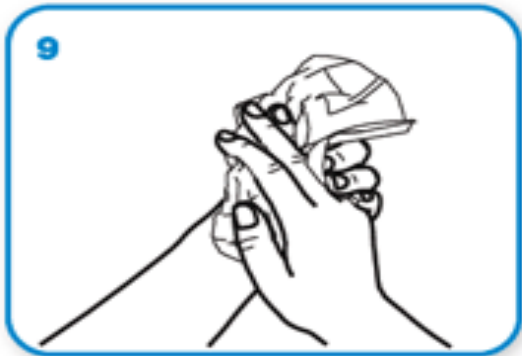
rotational rubbing of left thumb  
clasped in right palm  
and vice versa



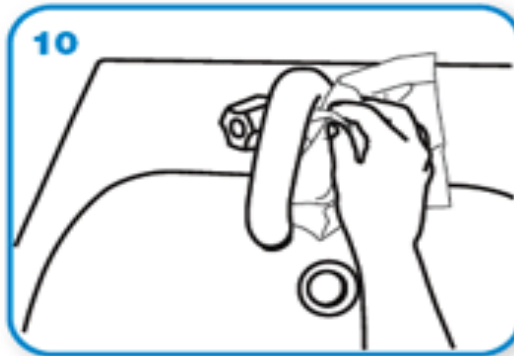
rotational rubbing, backwards  
and forwards with clasped  
fingers of right hand in left  
palm and vice versa.



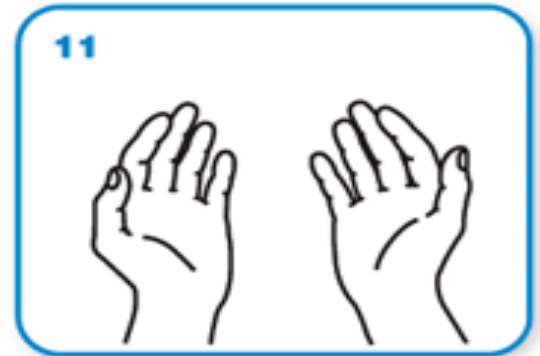
Rinse hands with water



dry thoroughly with a single  
use towel  
and vice versa



use towel to turn off faucet



...and your hands are safe.

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# N95 Mask or triple layered mask

- 1** Choose a small or medium-sized face-piece that fits the face. Pull the head bands loose. The metallic strip should be uppermost. Pass the hand through the head bands.



- 2** Put on the mask. The head bands should be around the head and neck.



- 3** Press the metallic strip on both sides with the forefingers and middle fingers of both hands.



- 4** **Seal Check:**

**Positive pressure checking** – cover the mask lightly with both hands. Breathe with deliberation. Air should not leak out from the side of the mask.



**Negative pressure checking** – cover the mask lightly with both hands. Suck in air with deliberation. The mask should depress slightly inward.

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# Guidelines for isolation wards

- Ward should be locked from inside and key to be available in the nursing station:  
A grill door may be fixed for this purpose
- Only two attendants to be permitted on turn basis: These contacts should be on chemoprophylaxis
- Wards should be wiped with 5 % lysol:  
**No sweeping with broom sticks:**  
**This will generate fomites**

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# Guidelines for isolation wards

- Wipe all surfaces- chairs, door handles, equipment surfaces, bed rails and other areas touched by hands
- Doctors/ staff having underlying medical complications should not be posted in H1N1 wards

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**Wiping door handles, equipments, furniture with surgical spirit will prevent transmission**



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# Disinfectants

- **1% Sodium or Calcium hypochlorite solution**
- **5% lysol**
- **Surgical spirit with minimum of 70% alcohol**

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# Guidelines for schools

- Absentism due to any fever should be informed to local health authority
- Students/ teacher with flu like condition should be sent to a doctor
- Home isolation/ admission in isolation ward as per category
- Disinfect the class rooms before the commencement of next class

(Floor with 5% lysol and other surfaces including desk with surgical spirit)

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# Guidelines for cinema theatres

- **Disinfect the theatre before the commencement of next show**
  - Floor with 5% lysol or 1% hypochlorite solution
  - Seats and other surfaces with surgical spirit

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# Guidelines for marriage halls and other community halls

- **Disinfect the hall before the commencement of next function**
  - Floor with 5% lysol or 1% hypochlorite solution
  - Seats and other surfaces with surgical spirit

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# Guidelines for lodging houses

- **Disinfect the room before allotting to the next guest**
  - Floor with 5% lysol or 1% hypochlorite solution
  - Seats and other surfaces with surgical spirit

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# Guidelines for Public Transport

- Disinfect the vehicle particularly the areas touched by hands at the end of every trip
  - Floor with 5% lysol
  - Seats and other surfaces with surgical spirit

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# Guidelines for Public Places

- **Improve general cleanliness**
  - Floor with 5% lysol or 1% hypochlorite solution
  - Seats and other surfaces with surgical spirit
- **Liberal use of disinfectants**

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# Caution

- Isolation wards to be secure and each patient to be permitted only one or two relatives / attendant
- Patient Attendants should not keep on changing
- Patient attendants to be put on chemoprophylaxis
- Surgical spirit to be used for hand washing
- Isolation ward Staff should be vaccinated

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# Caution

- When a patient requires ALSS, oxygen and ventilator to be moved to the isolation ward

(Move ALSS to the patient instead of the patient to the ICU)

- PPE to be used always
- Staff with preexisting medical complications/ pregnant staff should not be posted to isolation wards

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# Caution

- Contact tracing and chemoprophylaxis should be given immediately
- Floors should not be swept with broomsticks; instead only wiping/mopping to be done
- 5% lysol to be used
- **Isolation ward does not mean fever ward:** Other fever cases should not be admitted in the isolation ward

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# Health Education Messages

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# Don'ts

- Do not take self medication
- Do not buy drugs without prescription
- Do not take steroids, brufen, aspirin like tablets
- Do not ask for injections

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# DOs

- If you have flu like illness stay back at home
- Any one with fever immediately contact a medical practitioner
- While coughing and sneezing cover the nose and mouth with hand kerchief
- Frequently wash hands

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# Tracking cases

- Use TNPH Act if necessary
- Addresses and contact numbers are to be recorded properly
- Outcome of each case has to be followed and informed to the DPH

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# Additional measures

- Preventing all fevers will help to reduce panic and diagnostic dilemma
- Water chlorination
- Food hygiene
- Aedes mosquito control

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# All about SWINE FLU

## CATEGORY A

Mild Fever + Cough/ Sore Throat + Bodyache, Headache, Diarrhoea & Vomting.

- ✓ NO Testing for H1N1 Required
- ✓ NO Oseltamivir (Anti Viral Tablet) Required

- ✓ Stay at Home
- ✓ Do not Mix with Public & High Risk Members

## CATEGORY B

High Grade Fever + Severe Sore Throat & Risk Groups Having Signs of Category A.

- ✓ NO Testing for

H1N1 Required

- ✓ Home isolation
- ✓ Oseltamivir (Anti Viral Tablet) as per Doctor's Prescription

## CATEGORY C

Signs & Symptoms of category A & B + Breathlessness, Chest Pain, Drowsiness, Convulsions, fall in BP, Blood in Sputum, Blue Nails (or) Worsening of Underlying Chronic Conditions

- ✓ Testing for H1N1 Required
- ✓ Oseltamivir (Anti Viral Tablet) Required

## DO NOT PANIC:

Most patients will experience only a mild illness. Severe illness may be seen only in some cases amongst high risk groups.

### Who need vaccination

- High risk groups
- ICY & Emergency Medical Services Personnel

### Limitations of Vaccine

- Takes 2 - 3 weeks for seroprotection
- Immunity Usually Lasts 6-12 Months

### High Risk Groups

- Children < 5 Years
- Elderly > 65 Years
- Pregnant women
- Those with heart/ Lung/ Chronic Disorders

## Treatment

### Adult

- Cap. Oseltamivir 75 mg  
BID x 5 Days

### Child

- Oral suspension of Oseltamivir 2 mg per Kg Body Weight in twice a day for 5 Days  
(Each ml Contains 12 mg of Oseltamivir)

## Chemoprophylaxis

### Adult

- Cap. Oseltamivir 75 mg  
OD x 10 Days

### Child


- Oral suspension of Oseltamivir 2 mg per Kg Body Weight in Once a day for 10 Days  
(Each ml Contains 12 mg of Oseltamivir)

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**Cover it!**

[www.flu.gov](http://www.flu.gov) »



**Stay Home!**

[www.flu.gov](http://www.flu.gov) »



**Wash 'em!**

[www.flu.gov](http://www.flu.gov) »



# Thank You

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