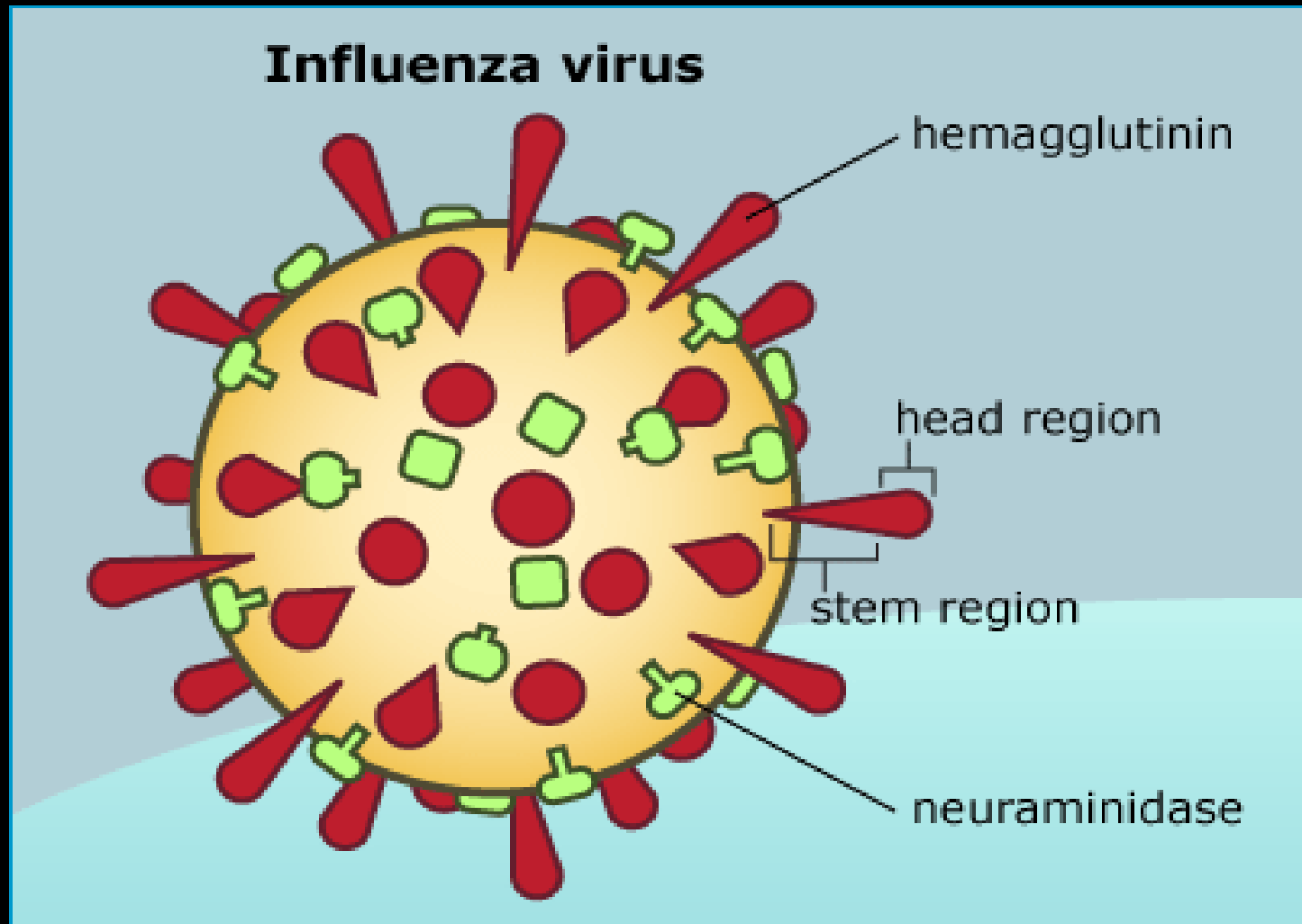


Clinical Case Management of H1N1 infection in Hospital



Professor Zaw Lynn Aung
Professor and Head
Department of Medicine
University of Medicine (1) Yangon

H1N1 infection

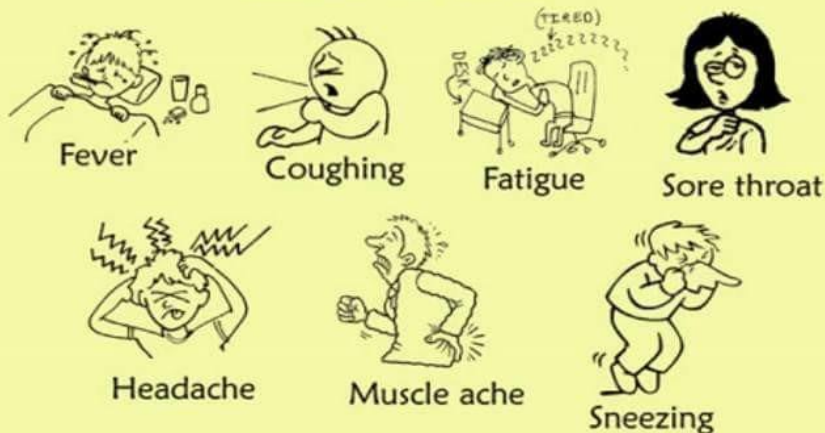


Clinical Features

INFLUENZA A (H1N1)

Influenza A (H1N1) is highly infectious and may result in serious complications like bronchitis, pneumonia or even death in severe cases.

SYMPTOMS:



PREVENTION:



- Most people with pandemic (H1N1) 2009 virus infection have had self-limiting uncomplicated illness.
- Only 1-10% needs hospitalization.
- Mortality : 2-9% of hospitalized patients

ILI and SARI Surveillance Guideline (Myanmar) July 2017

Case definitions

ILI (Influenza Like Illness)

Any acute respiratory infection with:

- measured fever of 38°C or above
- and cough
- with onset of fever within 10 days

SARI (Severe Acute Resp Inf)

Any acute respiratory infection with:

- measured fever of 38°C or above
- and cough
- with onset of fever within 10 days
- and **requires hospitalization**

Case description

Uncomplicated Influenza

- Patients may present with some or all of fever, cough, sore throat, rhinorrhea, headache, muscle pain, and malaise, but **no shortness of breath and no dyspnoea**.

Complicated or severe influenza

- Presenting **clinical** (e.g. shortness of breath/dyspnoea, tachypnea, hypoxia) ± **radiological signs of LRTI** (e.g. pneumonia), **CNS involvement** (e.g. encephalopathy, encephalitis), severe dehydration, or presenting secondary complications, such as renal failure, **multiorgan failure**, **septic shock**, rhabdomyolysis and myocarditis.
- **Exacerbation of underlying chronic disease**, including asthma, COPD, chronic hepatic or renal failure, diabetes, or other cardiovascular conditions.
- Any other condition or clinical **presentation requiring hospital admission** for clinical management.
- Any of the **signs of disease progression**

Risk factors for severe disease

- Infants and young children, in particular <2 years
- Pregnant women
- Persons of any age with chronic pulmonary disease (e.g. asthma, COPD)
- Persons of any age with chronic cardiac disease (e.g. congestive cardiac failure)
- Persons with metabolic disorders (e.g. diabetes)
- Persons with chronic renal disease, chronic hepatic disease, certain neurological conditions (including neuromuscular, neurocognitive, and seizure disorders), hemoglobinopathies, or immunosuppression, whether due to primary immunosuppressive conditions, such as HIV infection, or secondary conditions, such as immunosuppressive medication or malignancy
- Children receiving chronic aspirin therapy
- Persons aged 65 years and older

Categorization of Patients

Category A

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

Category B

- i. Category A **Plus** high grade fever and severe sore throat
- ii. Category – Any mild ILI in people with comorbidities like
 - Pregnant women
 - Lung/ heart/liver/kidney/neurological disease/blood disorder/diabetes/cancer/HIV-AIDS
 - On long term steroids or those with immunosuppression due to drugs, radiation or HIV, etc

Categorization of Patients

Category C

Cat A plus any 3 or more of the following:

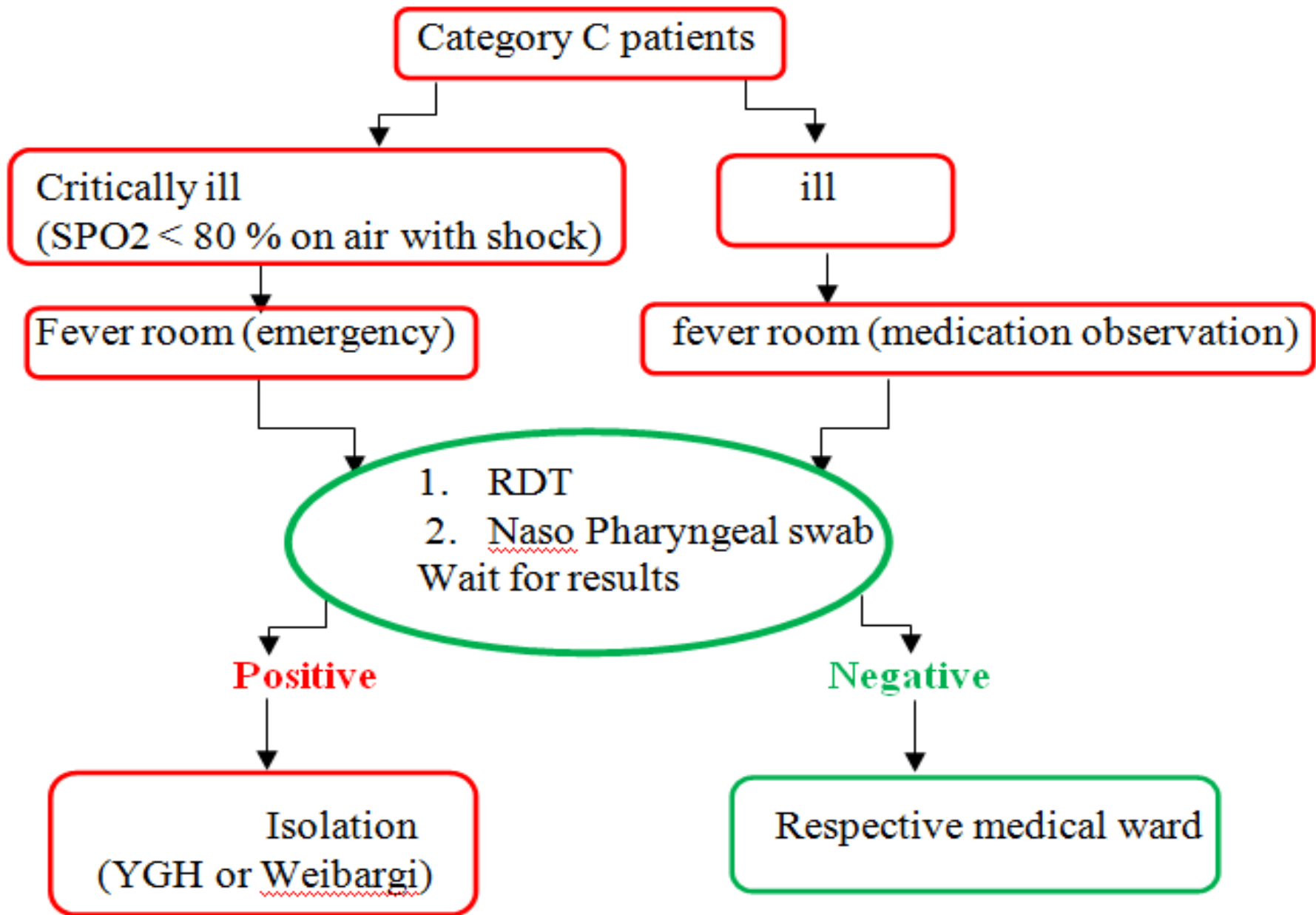
- Breathlessness
- Chest pain
- Drowsiness
- Fall in blood pressure (<90/60 mmHg)
- Cyanosis
- Tachypnea (RR >30/min)
- Decreased oxygen saturation (SPO2 <90 on air)
- CXR – patchy opacities

YGH management guideline for H1N1 (pdm) infection

Category	Test	Treatment
Cat A*	No testing	No admission Observe at home Symptomatic treatment (<u>Paracetamol</u> + Vitamin C+ adequate fluid)
Cat B(i)*	No testing	No admission Observe at home Treatment as above + Antibiotics
Cat B(ii)**	RDT	Admit and treatment is guided by <u>comorbidity</u> conditions
Cat C	RDT and Nasopharyngeal Swab for H1N1 Test	Admit and follow the H1N1 flow

*Cat A and Cat B (i) patients should be handled by screening team led by EMO

** Cat B (ii) patients should be seen by MO team leader



H1N1 Flow

YGH management guideline for H1N1 (pdm) infection

Who doesn't need to be hospitalized?

When influenza viruses are known to be circulating in a community, patients presenting with features of **uncomplicated influenza** can be diagnosed on clinical and epidemiological grounds. All patients should be **instructed to return for follow-up, should they develop any signs or symptoms of progressive disease or fail to improve within 72 hours of the onset of symptoms.**

WHO guideline for pharmacological management of pandemic influenza A (H1N1) 2009

သံသယရာသီတုပ်ကွေးလူနာ (ILI Case) များအား ဆေးကုသမှုပေးခြင်း

တုပ်ကွေးရောဂါလက္ခဏာများဖြင့် ပြင်ပလူနာဌာနသို့ လာရောက် ပြသပါက ရောဂါလက္ခဏာမပြင်းထန်လျှင် ပြင်ပလူနာအဖြစ်သာ ကုသမှုပေးရန်နှင့် လူနာအပါအဝင် လူနာနှင့် အနီးကပ်နေထိုင်သူများအနေဖြင့် ရောဂါကူးစက်ပြန့်ပွားမှုမရှိအောင် ကာကွယ်ရေးနည်းလမ်းများအား လိုက်နာဆောင်ရွက်စေရန်၊ လူနာအား ရက်ချိန်းပေး၍ ပြန်လည်ကြည့်ရှုရန် ဆောင်ရွက်သွားရမည်ဖြစ်ပါသည်။

Who should be hospitalized?

လတ်တလောပြင်းထန် အသက်ရှူလမ်းကြောင်းပိုးဝင်ရောဂါ လူနာ (SARI Case) များအား ဆေးကုသမှုပေးခြင်း

လတ်တလောပြင်းထန် အသက်ရှူလမ်းကြောင်းပိုးဝင်ရောဂါ လူနာများအား ဆေးရုံတင်၍ သီးသန့်ခွဲခြားကုသဆောင်တွင် ထားရှိကာ ကုသမှုပေးသွားရမည်ဖြစ်ပြီး လိုအပ်ပါက အထူးကြပ်မတ်ကုသဆောင်တွင် ပူးတွဲပါ အတိုင်း ကုသမှုပေးသွားရမည်ဖြစ်ပါသည်။

ရန်ကုန်မြို့တွင် ဝေဘာဂီဆေးရုံ၊ မန္တလေးမြို့တွင် ကန်တော်နဒီဆေးရုံ၊ တိုင်းဒေသကြီးနှင့် ပြည်နယ်များတွင် တိုင်းဒေသကြီးနှင့် ပြည်နယ်ဆေးရုံကြီးများ၊ မြို့နယ်များတွင် မြို့နယ်ဆေးရုံများရှိ သီးသန့်ခွဲခြားကုသဆောင်တွင် ထားရှိ၍ကုသမှုပေးရမည် ဖြစ်ပါသည်။

Case

- A 22 year old young lady was admitted to NYGH at 1:15 pm on 13.7.17.
- c/o - High fever for five days
 - Productive cough for five days

Patient's condition on admission:

- GC- dyspneic, Temp- 100°F
- BP- 100/60 mmHg, PR- 120/min
- SpO2- 86% on air and 92% on O2
- RR- 34/min
- Bilateral crepitations on both lung fields (L > R)

Initial Tests

- ECG – Sinus tachycardia, HR – 120/min
- Random blood sugar – 106 mg%
- Urea, Creatinine and Electrolytes – Normal
- Liver function test :
 - Serum bilirubin – Normal
 - AST, ALT – raised for two times upper limit of normal
- Sputum for AFB – Negative
- Sputum C&S – Pending

Serial Blood Tests

Date	Hb	WBC	Platelet	ESR (mm/1 st hr)	CRP (mg/L)
10.7.17	11.8	5	156		
13.7.15	11.4	4.7	132	5	
16.7.15	10.8	7.1	180		
21.7.17	11.5	17	415		75
26.7.17	10.3	9.5	700	80	24

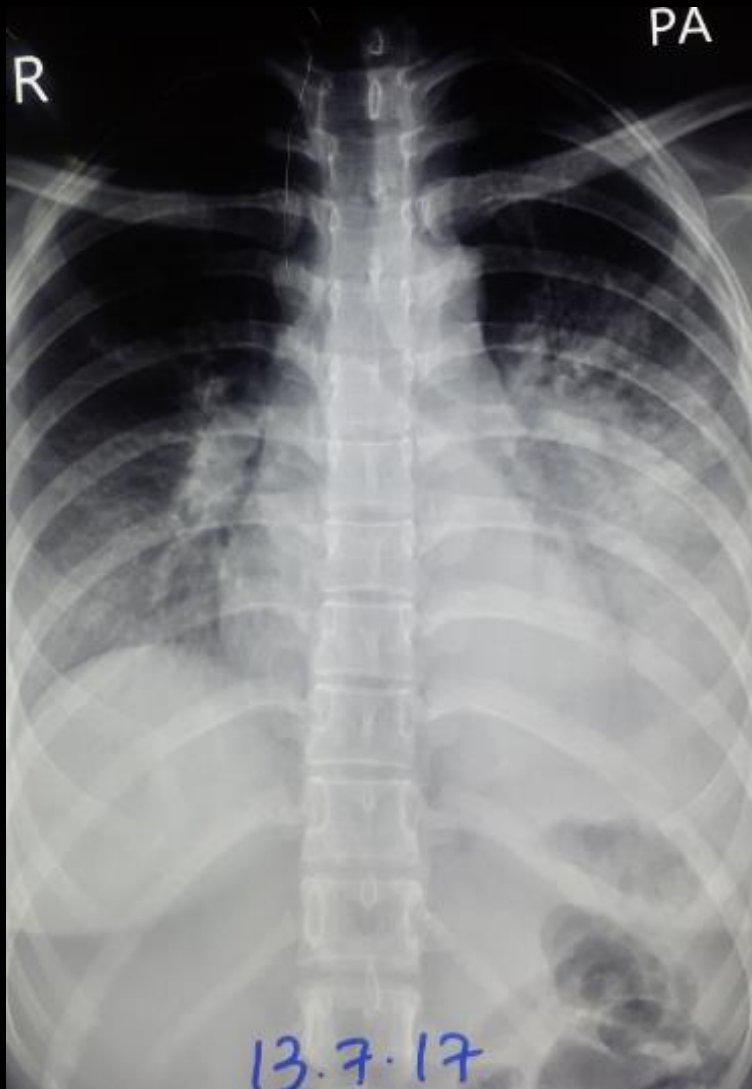
Serial ABG results

Date	13.7.17	15.7.17	21.7.17	24.7.17
pH	7.41	7.39	7.45	7.45
pCO ₂ (mmHg)	38.9	49.4	36.6	42.2
pO ₂ (mmHg)	57.4	60.9	75.9	70.7
HCO ₃ (mmol/L)	24.3	29.5	25	28.5
K (mmol/L)	3.24	3.75	3.63	3.85

Reference values: pH – 7.2 - 7.5, pCO₂ – 30-50 mmHg, pO₂ – 70-700 mmHg

Date	Procalcitonin level (Reference- <0.05 ng/ml)	Significance
15.7.17	0.204	Systemic infection (Sepsis) is not likely. Local bacterial infection is possible.
21.7.17	0.06	Systemic infection (Sepsis) is not likely. Local bacterial infection is possible.

CXR (PA) 13.7.17



- Severe chest infection
(Left lower lobe consolidation)

CT (Chest) 13.7.17



- Left lower lobe consolidation with diffuse pulmonary alveolar infiltrates
(ARDS should be considered.)

Diagnosis

- Severe Pneumonia with Type 1 Respiratory failure



Immediate Management

- Patient was kept in ICU after consultation with Anaesthetist.
- IV Ceftriaxone
- IV Azithromycin

Second day of admission..

↑Respiratory distress

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graph TD; A[↑Respiratory distress] --> B[ABG- Type 1 Respiratory failure]; B --> C[CPAP (NIPPV) was given and consulted with chest physician.];
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ABG- Type 1 Respiratory failure

CPAP (NIPPV) was given and consulted with chest physician.

Second day of admission..

- IV Ceftriaxone was changed to IV Tazobactam + Piperacillin.
- IV Azithromycin for three days
- IV Levofloxacin was added after IV Azithromycin.

Sputum C&S (16.7.17)

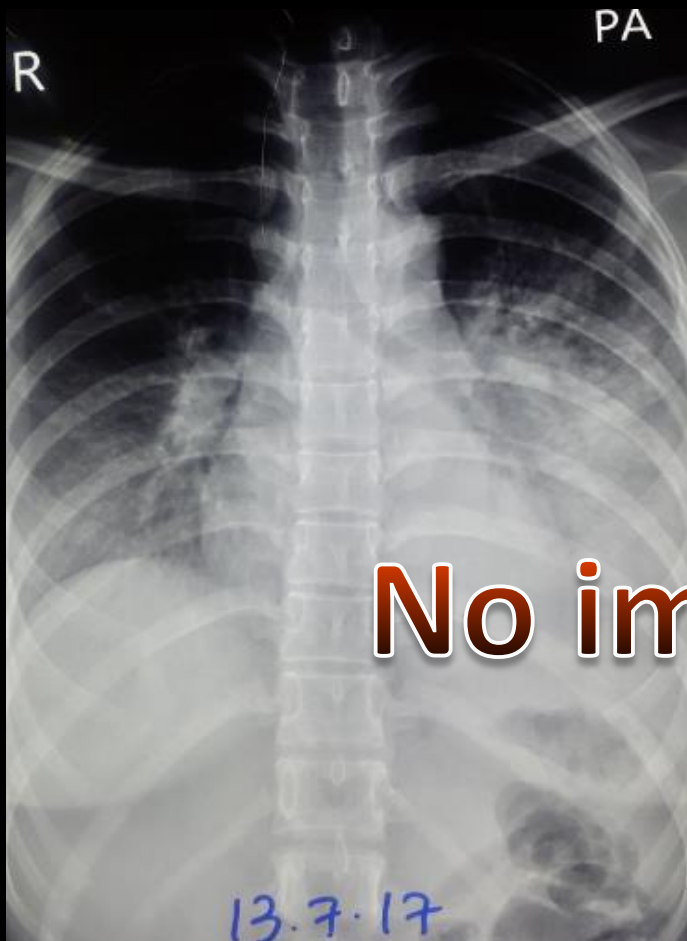
Identification Information		Analysis Time:	8:25 hours	Status:	Final												
Selected Organism		90% Probability	Streptococcus sanguinis														
ID Analysis Messages		Bionumber: 001001364301511															
Biochemical Details																	
2	AMY	-	4	PIPLC	-	5	JKYL	-	8	ADH1	-	9	BGAL	-	11	AGLU	-
13	APPA	+	14	CDEX	-	15	AspA	-	16	BGAR	-	17	AMAN	-	19	PHOS	-
20	LeuA	-	23	ProA	-	24	BGLUry	-	25	AGAL	+	26	PyrA	-	27	BGUR	-
28	AlaA	+	29	TyrA	+	30	dSOR	-	31	URE	-	32	POLYB	+	37	dGAL	+
38	dRIB	-	39	ILATk	-	42	LAC	+	44	NAG	+	45	dMAL	+	46	BACI	-
47	NOVO	-	50	NC6.5	-	52	dMAN	-	53	dMNE	+	54	MB6G	-	56	PUL	-
57	dRAF	+	58	O129R	-	59	SAL	+	60	SAC	+	62	dTRE	-	63	ADH2s	-
64	OPTC	+															

Chloramphenicol	-	S	Oxacillin	-	R
Cefepime	-	S	Vancomycin	-	R
Doxycycline	-	S	Tetracycline	-	R
Linezolid	-	S	Clindamycin	-	R
Gentamicin	-	J	Erythromycin	-	R
Levofloxacin	-	R	Penicillin	-	R
Ciprofloxacin	-	R			
Clonidine	-	R			

- Streptococcus sanguis –
- Sensitive to CS1,
Doxycycline, Linezolid,
Gentamicin
- IV CS1 was added
according to C&S result.

CXR recheck after 1 week...

CXR (PA) 13.7.17



CXR (AP) 20.7.17



No improvement

Throat Swab (21.7.17) RT-PCR

VIROLOGY SECTION
National Influenza Center
Laboratory Report

Sender Hospital -NYGH

Date: 20.1.2017

No	Lab. No.	Name	Age	Sex	Date Received	Date Tested	Type of test	Result
1.	1010-17	[REDACTED]	22 yrs	F	18.7.2017	21.7.2017	Real time PCR by using M primer, B primer, H3, H5, H7 & Swine Primer	A/H1N1 Pdm (+)

A H1N1 Pdm- Positive

Viral serology

- HBsAg, HCV Ab, HIV Ab
- Meales Ig M Ab
- Rubella IgM Ab
- JE Ig M Ab
- Zika Ig M Ab
- Chikungunya Ig M Ab
- Herepes simplex IgM Ab
- Dengue serology



Negative

Types of specimen that can be collected for PCR test of ILI

Nasopharyngeal swab (also for culture)

All samples should be accompanied by the relevant surveillance forms (CIF) duly filled up by the concerned medical officer or designated health staff.

Any throat swab collected in VTM should be immediately stored and transported to NHL within two days in cold chain by respective health staff designated by respective health department.

Laboratory Tests

- Rapid diagnostic (antigen) testing
- RT-PCR (**highest sensitivity**)
- Viral culture
- Immunofluorescence assays and serology

Emergencies preparedness, response

Clinical management of human infection with pandemic (H1N1) 2009: revised guidance

Diagnostic testing to confirm the pandemic virus should be prioritized for patients at higher risk for severe illness.

However, clinicians should not delay treatment of a patient with symptoms of an influenza-like illness to wait for laboratory confirmation of H1N1 virus infection.

WHO revised guidance: Clinical Management of Human infection with Pandemic H1N1 2009

Antiviral Treatment Recommendations

- Patients who have severe or progressive illness should be treated with antiviral medication as soon as possible.
- People with mild symptoms but who are at higher risk for severe illness (e.g. pregnant women, infants and young children, and those with chronic lung problems) should start antiviral treatment as soon as possible.
- Antiviral treatment is not necessary for people have uncomplicated, or mild, illness and are not in a high risk group for severe illness.

Mothers who are breastfeeding can continue breastfeeding while ill and receiving antiviral treatment.

Role of Antiviral Therapy

Journal of
Antimicrobial
Chemotherapy

J Antimicrob Chemother 2010; **65** Suppl 2: ii35–40
doi:10.1093/jac/dkq014

Responding to pandemic (H1N1) 2009 influenza: the role of oseltamivir

oseltamivir (22) or zanamivir (26).¹⁵ Both medications were well tolerated, and earlier administration seemed to be associated with a reduced duration of fever [median duration of fever of 1.5 days (range 1–4 days) with oseltamivir and 1 day (range 1–5 days) with zanamivir when antiviral treatment began on the day of fever onset, compared with a median of 3 days (range 2–5 days) when either drug was initiated the day after fever onset]. Most patients were discharged shortly after antiviral administration and all recovered

24 h.¹⁶ In a multivariable analysis of outcomes, the only variable that was significantly associated with a positive outcome was the receipt of antiviral drugs within 2 days of illness onset.¹⁶ Between 29 May 2009 and 28 July 2009, the Hospital

Role of Antiviral Therapy

The standard treatment regimens for adults and children are expected to be effective against the pandemic (H1N1) 2009 virus, but clinical evidence for this is still to be collected. It is possible that increasing the dosage could help to control viral shedding, particularly as anecdotal reports suggest this is prolonged in patients with pandemic (H1N1) 2009 disease.

The effectiveness of oseltamivir in treating pandemic (H1N1) 2009 in some patient sub-populations known to be at higher risk of severe disease, such as young children and those with co-existing illnesses, has yet to be established. This is being addressed through a series of four studies; the first of these, which started in 2007, is currently underway.

Responding to pandemic (H1N1) 2009 influenza: the role of oseltamivir,
J Antimicrob Chemother 2010; 65 Suppl 2: ii35–40

Back to the case....

- The patient was admitted after five days of signs and symptoms.



- So, antiviral therapy doesn't appear to be affective anymore.

Role of Antibiotics and Steroids

Secondary Bacterial Pneumonia

- Initial empiric antimicrobial therapy of suspected pandemic (H1N1) 2009-associated pneumonia/pneumonitis should include both oseltamivir and community-acquired pneumonia antibiotic therapy.
- In the absence of clinical and/or microbiological indication of bacterial infection, discontinuation of antibiotics may be considered in patients with laboratory confirmed pandemic (H1N1) viral pneumonia/pneumonitis as prolonged or redundant antimicrobial therapy poses a risk of antimicrobial resistance.

Adjunctive pharmacologic therapy

High dose systemic corticosteroids and other adjunctive therapies for viral pneumonitis are not recommended for use outside of the context of clinical trials.

Back to the case..

Sputum C&S (23.7.17)

Selected Organism : *Klebsiella pneumoniae*

Source: Sputum(HeavyGrowth) Collected: Jul 21, 2017

Comments: ESBL Phenotype Detected

Susceptibility Information			Analysis Time: 9.00 hours			Status: Final		
Antimicrobial	MIC	Interpretation	Antimicrobial	MIC	Interpretation	Antimicrobial	MIC	Interpretation
Ampicillin	>= 32	R	Aztreonam	>= 64	R			
Amoxicillin/Clavulanic Acid	>= 32	R	Ertapenem	<= 0.5	S			
Ampicillin/Sulbactam	>= 32	R	Imipenem	<= 0.25	S			
Piperacillin/Tazobactam	>= 128	R	Meropenem	<= 0.25	S			
+Cefalexin		R	Amikacin	<= 2	S			
Cefazolin	>= 64	R	Gentamicin	>= 16	R			
+Cefuroxime		R	+Netilmicin					
+Cefoxitin			Ciprofloxacin	>= 4	R			
+Ceftiofime		R	Levofloxacin	>= 8	R			
+Cefpodoxime		R	+Norfloxacin		R			
+Cefoperazone		R	+Ofloxacin		R			
+Cefotaxime		R	+Doxycycline		R			
+Ceftazidime		R	Tetracycline	>= 16	R			
Ceftriaxone	>= 64	R	Nitrofurantoin	256	R			
+Cefoperazone/Sulbactam		R	Trimethoprim/Sulfamethoxazole	>= 320	R			
Cefepime	>= 64	R						

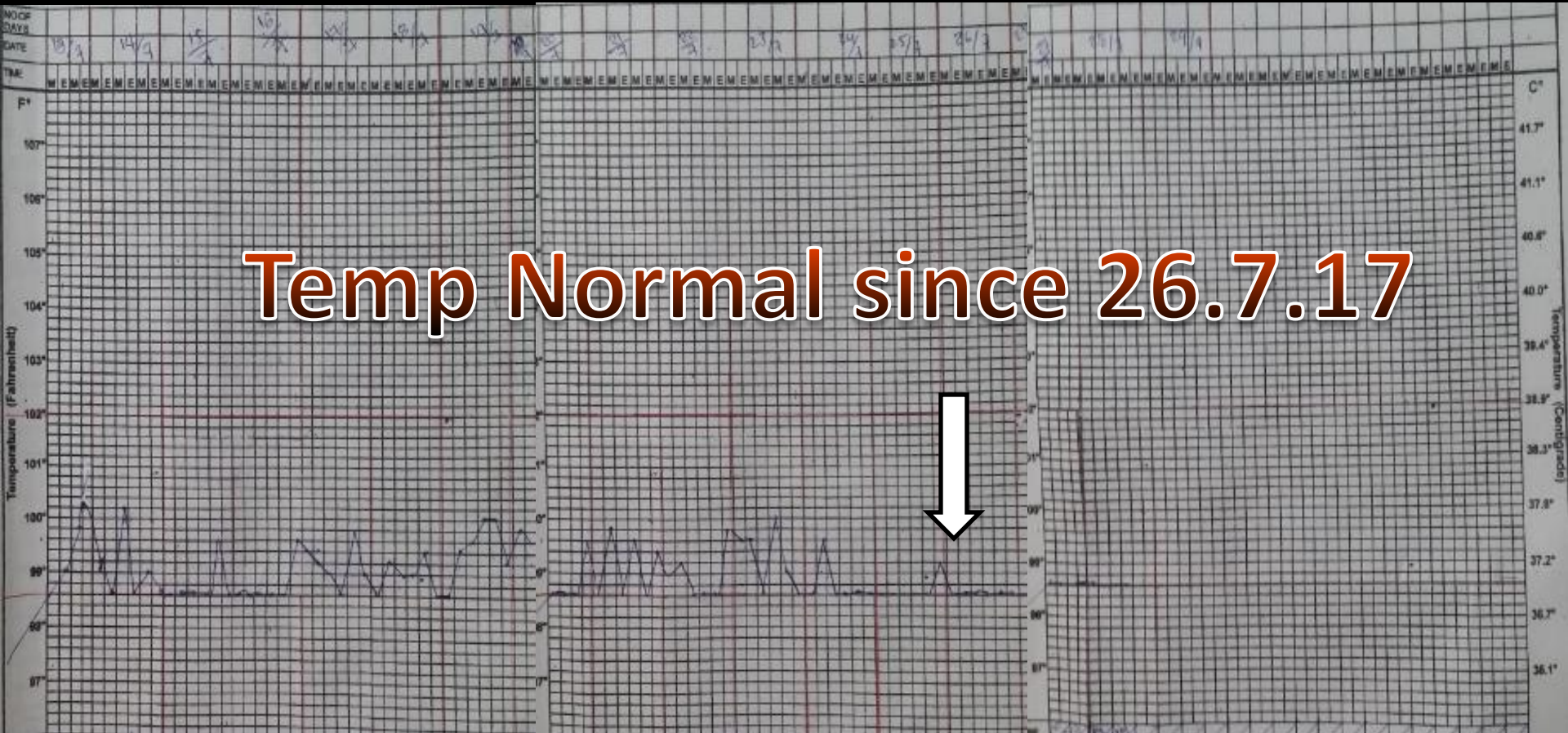
= Deduced drug * AE5 modified ** User modified

- *Klebsiella pneumoniae*-
- Sensitive to Ertapenem, Imipenem, Meropenem, Amikacin
- IV Imipenem and PO Linezolid were added.

Final diagnosis

- Severe influenza infection (H1N1 pdm) with Type 1 respiratory failure complicated by secondary bacterial pneumonia

Temperature Monitoring Chart



Temp Normal since 26.7.17



Patient's Progress

Mode of O2 therapy	From	To
CPAP	13.7.17	24.7.17
O2 Facemask	24.7.17	25.7.17
Nasal cannula	25.7.17	Till now

Current Condition

- Fever subsided and respiratory distress reduced.
- ABG results came back to normal.
- But patient still needs O₂ therapy to maintain SpO₂ > 96%.

What about the prevention???



Mode of Transmission

- Spread from infectious people to susceptible people through large virus-containing droplets and aerosols that are produced by coughing, sneezing or talking
- Less commonly, spread via contaminated fomites or by direct touching

Incubation Period

- Approximately 2-3 days, but could range up to 7 days
- Patient is infectious from one day before to seven days after the onset of signs and symptoms.

THE SPREAD OF FLU IS UP TO YOU

FLU DOESN'T SPREAD ITSELF,
PEOPLE SPREAD IT



COVER your face when
you cough or sneeze

Duration of Isolation Precautions

The duration of isolation precautions for hospitalized patients with influenza symptoms should be continued for 7 days after onset of illness or 24 hours after the resolution of fever and respiratory symptoms, whichever is longer, while a patient is in a health-care facility. For prolonged illness with complications (i.e. pneumonia), control measures should be used during the duration of acute illness (i.e. until the patient has improved clinically). Special attention is needed in caring for immunosuppressed patients who may shed virus for a longer time period and are also at increased risk for development of antiviral-resistant virus⁴.

WHO guideline for pharmacological management of pandemic influenza A (H1N1) 2009

Infection Control Measures

ပြင်ပလူနာဌာန၊ ဆေးရုံ၊ ဓာတ်မှန်ခန်း၊ ခွဲစိတ်ခန်း၊ သားဖွားခန်း၊ လူနာတင်ယာဉ် အစရှိသည်တို့မှ ကျန်းမာရေးဝန်ထမ်းများသည် သံသယလူနာ ရာသီတုပ်ကွေးရောဂါ (ILI) နှင့် လတ်တလောပြင်းထန် အသက်ရှူလမ်းကြောင်းပိုးဝင်ရောဂါ လူနာ (SARI) များအား ကျန်းမာရေးစောင့်ရှောက်မှု လုပ်ငန်းများဆောင်ရွက်နေစဉ် Surgical Mask နှင့် Gloves ဝတ်ဆင်ရပါ မည်။

လူနာထံမှ သွေးနှင့် ခွဲ၊ သလိပ်၊ ခန္ဓာကိုယ် အရည်တို့နှင့် ထိတွေ့နိုင်သူများသည် ကာကွယ်ရေး ဝတ်ရုံ (Disposable Gowns) များ ဝတ်ဆင်ခြင်း၊ လက်အိတ်၊ ကာကွယ်ရေး မျက်မှန်တပ်ဆင်ခြင်းများပြုလုပ်ရပါမည်။

ဓာတ်ခွဲခန်းအတည်ပြု လူနာများနှင့်အနီးကပ် ထိတွေ့နေရသော သီးသန့်ခွဲခြား ကုသ ဆောင်၊ အထူးကြပ်မတ်ကုသဆောင်များရှိ ကျန်းမာရေးဝန်ထမ်းများနှင့် လူနာစောင့်များ၊ သေဆုံးလူနာအား ကိုင်တွယ်သည့် ရင်ခွဲရုံဝန်ထမ်းများအနေဖြင့် ရောဂါကူးစက်ခံရမှု မရှိစေရေး အတွက် N95 Respirator၊ လက်အိတ် အပါအဝင် သင့်လျော်သည့် ကာကွယ်ရေး ဝတ်စုံ ပစ္စည်းများ (PPE – Personal Protective Equipment) စနစ်တကျ ဝတ်ဆင် ရပါမည်။

Original Contribution

November 4, 2009

Surgical Mask vs N95 Respirator for Preventing Influenza Among Health Care Workers

A Randomized Trial

Mark Loeb, MD, MSc; Nancy Dafoe, RN; James Mahony, PhD; [et al](#)

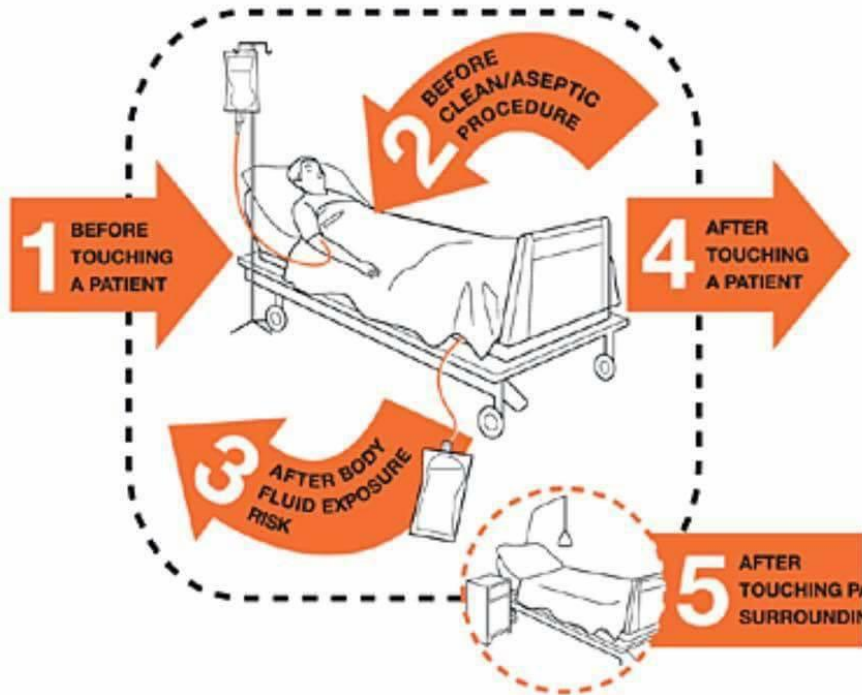
Results Between September 23, 2008, and December 8, 2008, 478 nurses were assessed for eligibility and 446 nurses were enrolled and randomly assigned the intervention; 225 were allocated to receive surgical masks and 221 to N95 respirators. Influenza infection occurred in 50 nurses (23.6%) in the surgical mask group and in 48 (22.9%) in the N95 respirator group (absolute risk difference, -0.73% ; 95% CI, -8.8% to 7.3% ; $P = .86$), the lower confidence limit being inside the noninferiority limit of -9% .

Conclusion Among nurses in Ontario tertiary care hospitals, use of a surgical mask compared with an N95 respirator resulted in noninferior rates of laboratory-confirmed influenza.



Hand Washing helps a lot....

1. before touching a patient,
2. before clean/aseptic procedures,
3. after body fluid exposure/risk,
4. after touching a patient, and
5. after touching patient surroundings.



How to Handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

Duration of the entire procedure: 40-60 seconds



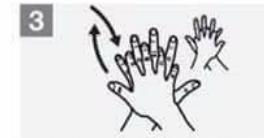
Wet hands with water;



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;



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;



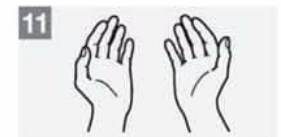
Rinse hands with water;



Dry hands thoroughly with a single use towel;



Use towel to turn off faucet;



Your hands are now safe.



World Health Organization

Patient Safety

A World Alliance for Safer Health Care

SAVE LIVES
Clean Your Hands

Prevention in community

OBSERVE GOOD PERSONAL HYGIENE

- Cover your mouth and nose with tissue paper when coughing or sneezing. Dispose the used tissue paper in the rubbish bin properly.



How to avoid H1N1



Avoid hugging, kissing and shaking hands when greeting



Avoid touching eyes, nose or mouth with unwashed hands



Cover your nose and mouth with a disposable tissue when coughing and sneezing



Dispose of used tissues properly immediately after use



Regularly wash hands with soap and water



If you have flu-like symptoms, seek medical advice immediately



If you have flu-like symptoms, keep a distance of at least 1 meter from other people



If you have flu-like symptoms, stay home from work, school or crowded places

Contact Persons

Is Quarantine needed???

- To report back if there are symptoms of influenza
- Chemoprophylaxis is not generally recommended.

YGH management guideline for H1N1 (pdm) infection



An official Publication of
the Indian Pharmacological Society

Indian Journal of
Pharmacology

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[Indian J Pharmacol](#). 2012 Nov-Dec; 44(6): 754–758.

PMCID: PMC3523505

doi: [10.4103/0253-7613.103292](https://doi.org/10.4103/0253-7613.103292)

The study was conducted on HCP posted in “Swine Flu Intensive Care Unit” from October 2009 to March 2010. Data on infection control measures, chemoprophylactic use of oseltamivir, flu-like illness, ADRs to oseltamivir, and contact history in family and neighborhood were collected by face-to-face interview conducted by investigator using a set of prespecified items in a questionnaire.

Chemoprophylaxis with oseltamivir is not recommended for HCP working in areas of high aerosol generation like ICU if infection control measures are adopted as there is no significant difference in the incidence of flu-like illness in HCP with and without intake of oseltamivir. This protects HCP from various adverse effects of the drugs, like nausea, gastritis, and headache.



the **benefits** of **flu vaccination** 2014-2015

The estimated number of influenza-associated **illnesses prevented** by flu vaccination during the 2014-2015 season:



1.9 million greater than the population of the city of Philadelphia

get **vaccinated**

DATA: Morbidity and Mortality Weekly Report (MMWR), October 4–November 28, 2015: Vol. 64, No. 48



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

www.cdc.gov/flu

Effectiveness of Flu vaccination

- Flu vaccination can reduce the risk of flu-associated hospitalization, including among children and older adults.
 - A 2014 study² showed that flu vaccine reduced children's risk of flu-related pediatric intensive care unit (PICU) admission by 74% during flu seasons from 2010-2012.
 - Another study published in the summer of 2016 showed that people 50 years and older who got a flu vaccine reduced their risk of getting hospitalized from flu by 57%.
- Flu vaccination is an important preventive tool for people with chronic health conditions.
 - Vaccination was associated with lower rates of some cardiac events among people with heart disease, especially among those who had had a cardiac event in the past year.
 - Flu vaccination also has been shown to be associated with reduced hospitalizations among people with diabetes (79%) and chronic lung disease (52%).
- Vaccination helps protect women during and after pregnancy. Getting vaccinated can also protect a baby after birth from flu. (Mom passes antibodies onto the developing baby during her pregnancy.)



Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

Recommended composition of influenza virus vaccines for use in the 2016-2017 northern hemisphere influenza season

It is recommended that trivalent vaccines for use in the 2016-2017 northern hemisphere influenza season contain the following:

- an A/California/7/2009 (H1N1)pdm09-like virus;**
- an A/Hong Kong/4801/2014 (H3N2)-like virus;**
- a B/Brisbane/60/2008-like virus.**

It is recommended that quadrivalent vaccines containing two influenza B viruses contain the above three viruses and a B/Phuket/3073/2013-like virus.



	Mfg.	Description	Age Range	Doses / Vial or Box	Preservative Content
Trivalent	CSL	Afluria® 5mL Vial	9 years and above	10 / Vial	Yes
	CSL	Afluria® 0.5mL Prefilled Syringe	9 years and above	10 / Box	None
	Novartis	Fluvirin® 5mL Vial	4 years and above	10 / Vial	Yes
	Novartis	Fluvirin® 0.5mL Prefilled Luer Lock Syringe	4 years and above	10 / Box	No (1 mcg / 0.5 mL dose)
	Novartis	Flucelvax® 0.5mL Prefilled Syringe	18 years and above	10 / Box	None
	Protein Sciences	Flublok® 5mL 0.5 mL single dose vial	18 yrs and above	10 / box	No
	Sanofi	Fluzone® 5mL Vial	6 - 35 months (0.25mL) 3 yrs and above (0.5mL)	10 / Vial	Yes
	Sanofi	Fluzone® 0.5mL Prefilled Syringe	3 yrs and above	10 / Box	None
	Sanofi	Fluzone® High-Dose 0.5mL Prefilled Syringe	65 years and above	10 / Box	None
Quadrivalent	MedImmune	FluMist® Quadrivalent (Influenza Vaccine Live, Intranasal)	2-49 yrs	10 / Box	None
	GSK	FluLaval® Quadrivalent 5mL Vial	3 yrs and above	10 / Vial	Yes
	GSK	Fluzone® Quadrivalent 5 mL Vial	4 yrs and above	10 / Vial	Yes
	GSK	Fluarix® Quadrivalent 0.5 mL Prefilled Syringe	3 yrs and above	10 / Box	None
	Sanofi	Fluzone® Quadrivalent 5 mL multi Dose Vial	6 - 35 months (0.25mL) 3 yrs and above (0.5mL)	10 / Vial	Yes
	Sanofi	Fluzone® Quadrivalent 0.5 mL Prefilled Syringe	3 yrs and above	10 / Box	None
	Sanofi	Fluzone® Intradermal	18-64 years	10 / Box	None
	Sanofi	Fluzone® Quadrivalent 0.5 mL Single Dose Vial	6 - 35 months (0.25mL) 3 yrs and above (0.5mL)	10 / Box	None
	Sanofi	Fluzone® Quadrivalent 0.25 mL Prefilled Syringe (Pediatric)	6 - 35 months	10 / Box	None

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- **Clinical management of human infection with pandemic (H1N1) 2009: revised guidance, WHO**
- ILI and SARI Surveillance Guideline (Myanmar) July 2017
- YGH management guideline for H1N1 (pdm) infection
- Guidelines for H1N1 pdm 2009 Prevention and Control, MOH, Myanmar (2017)

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- Responding to pandemic (H1N1) 2009 influenza: the role of oseltamivir, J Antimicrob Chemother 2010
- WHO Recommended composition of influenza virus vaccines for use in the 2016-2017 northern hemisphere influenza season
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- Surgical mask Vs N 95 respirator for preventing influenza among healthcare workers : A Randomized Trial, JAMA 2009



- * ရာသီတုပ်ကွေး
- * အဆိုးပါးဆုံး
- * နှာချေတ် (လက်ဝါဒ)



- * မိမိအနီးရှိသူများ
- * နှာချေတ်
- * ရေနှင့်ဆေးခြင်း
- * မိမိတွင်



- ရေနှင့်ဆေးခြင်း
- ခြောက်ခြင်း
-



ရာသီတုပ်ကွေးရောဂါ

ရာသီတုပ်ကွေးရောဂါ သံသယရှိသူများတွင် အောက်ပါ ပြင်းထန်လက္ခဏာများ ပေါ်ပေါက်ပါက နီးစပ်ရာ ဆေးရုံ/ ဆေးခန်းသို့ ချက်ချင်း သွားရောက်၍ ကုသမှုခံယူပါ။

• အဖျားကြီးလွန်းခြင်း

THANK YOU!!



- အသက်ရှူကြပ်ခြင်း
- အသက်ရှူခက်ခဲခြင်း

- ဂနာမငြိမ်ဖြစ်ခြင်း
- သတိလစ်ခြင်း

ကျန်းမာရေးနှင့်အားကစားဝန်ကြီးဌာန

(၂၀၁၇ခုနှစ်၊ ဇူလိုင်လ - ၂၆ ရက်)

ကာများ

ဝက်)



ရသည်ဟု သံသယရှိပါက ပေးပို့၍ ကုသမှုခံယူပါ။

အားကစားဝန်ကြီးဌာန (ဇူလိုင်လ - ၂၀ ရက်)