

**Influenza A (H1N1) 2009
monovalent vaccine
(I A /H1N1/ 2009 MV)
“PANVAX™ ”**

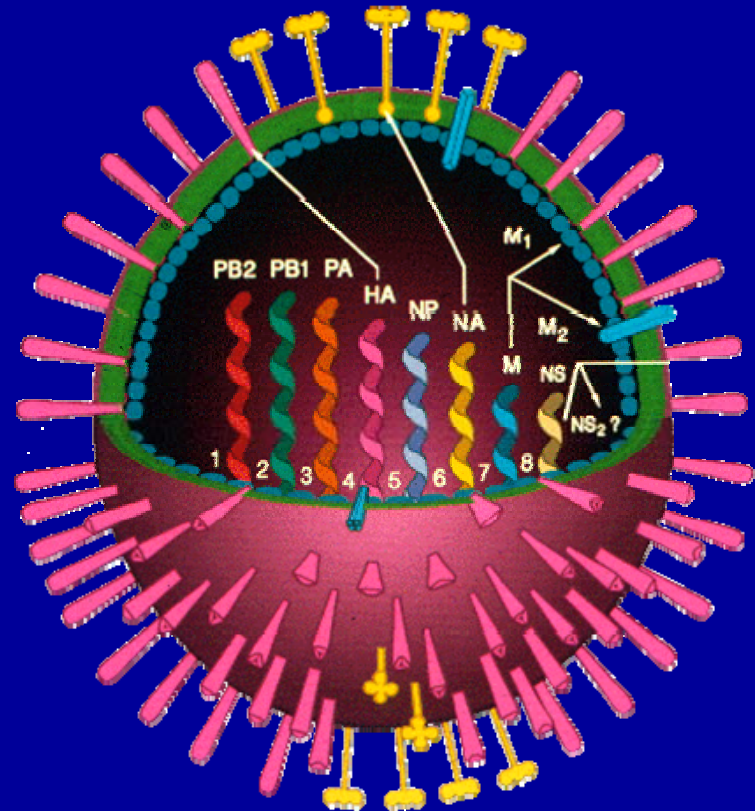
**Epidemiology Unit
Ministry of Health**

Influenza A/H1N1 vaccine

- Monovalent, unadjuvanted, inactivated, split-virus vaccine
- Prepared in embryonated chicken eggs
 - Purification by zonal centrifugation
 - Inactivation with beta propiolactone
 - Obtaining split virion with Na taurodeoxycholate
- Same technology used for manufacturing Trivalent Inactivated seasonal influenza Vaccines (TIV)
- Seed virus -from the reassortant vaccine virus NYMC X-179A derived from the virus A/California/7/2009 (H1N1)

Pharmacology

- Induction of antibodies to the viral surface antigens; neuraminidase and haemoagglutinin



Prioritization for vaccination by WHO's SAGE

- Health workers
- Pregnant women
- Individuals above 6 months with one of several chronic medical conditions
- Healthy young adults (15 -49 years of age)
- Healthy young children
- Healthy adults >49 years < 65 years
- Healthy adults aged >65 years

Priority groups for vaccination in Sri Lanka

- Health workers (Public and private sector)
- Pregnant women
- Individuals with potential high risk of severe disease and complications of pandemic influenza A/H1N1 at any age

Rationale for prioritising health workers

- To reduce the morbidity and mortality due to H1N1 among health workers
- To protect the essential health infra structure
- To ensure maximum functional capacity for caring for sick individuals
- To reduce the spread and possibility of nosocomial infections through health workers
- To alleviate unfounded fear of health workers

WHO position on pregnancy and vaccination

- Pregnant women - an increased risk of severe disease
(especially in the 2nd & 3rd trimester)
 - Complications
 - Death of the mother
- Severe disease potentially results in
 - Spontaneous abortions/IUD
- 7-10% of hospitalized patients- pregnant women in 2-3rd trimesters
- 10 fold higher chance to require intensive care than infected in the general population

WHO's SAGE position

- Recommended vaccination with WHO pre qualified vaccines to mitigate these effects
 - Substantially elevated risk for severe outcomes
 - Indirect protection of infants up to 6 months
 - Absence of specific contraindications
- Preferred option-
 - inactivated non- adjuvanted pandemic vaccines
 - Extensive safety data of use of similar inactivated seasonal vaccines in pregnancy.
- If preferred option is not available
 - Inactivated adjuvanted pandemic vaccine
 - Live attenuated pandemic vaccine

WHO's SAGE position

- **Adjuvanted, non adjuvanted inactivated and live vaccines**
 - Reproductive toxicity studies on animal models
 - No Direct or indirect harmful effects demonstrated on
 - fertility, pregnancy, embryonic or fetal development, and parturition or post-natal development.
- **The licensed indications for use**
 - include pregnant women
- **Pregnancy - not a contraindication even for the live attenuated pandemic (H1N1) 2009 vaccine**
 - Attenuated viruses do not replicate at body temperature
 - Attenuated viruses do not cause viraemia.

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Epidemiology of H1N1 in Pregnancy in Sri Lanka

- No of lab confirmed deaths due to H1N1: 46
- Deaths due to H1N1 among pregnant women : 7
- Deaths due to H1N1 in the general population: 39
- H1N1 specific death rate among pregnant women = $3.5/100000$ pregnant women
- H1N1 specific death rate in the general population = 0.2 per 100000 population
- 17.5 fold higher deaths among pregnant women

Priortising high risk individuals

- Majority - uncomplicated, self limited, mild disease
- Severe disease - among known high risk groups
- A majority of hospitalized patients - at least one chronic morbidity
- Development of severe course of pandemic influenza A/H1N1
- Rapid progression of pandemic influenza A/H1N1
- Development of complications of pandemic influenza A/H1N1
 - Major complication - ARDS due to viral pneumonitis
 - Multi organ failure, septic shock
 - Exacerbation of existing morbidity conditions
 - Encephalopathy, encephalitis

Priortising high risk individuals

- At least one of following chronic morbidity
 1. Chronic lung diseases including bronchial asthma
 2. Chronic cardiovascular disorders excluding hypertension
 3. Chronic renal, hepatic and hematological conditions including sickle cell disease,
 4. Metabolic disorders including diabetes mellitus
 5. People with immunosuppressive conditions
 1. Immunosuppression caused by medications (only malignant Cancers)
 2. HIV/AIDS
 6. Those with disorders compromising respiratory function
 - spinal cord injuries, seizure disorders
 7. Any other disease deemed high risk by a consultant physician / pediatrician

Dose, schedule & route of administration

- Intramuscular or deep subcutaneous administration
- Children aged 6 months to 35 months:
 - Two doses of 0.25 ml dose approximately 4 weeks apart.
- Children aged 36 months to 9 years of age
 - Two 0.5 ml doses approximately 4 weeks apart.
- Children aged 10 years to 18 years
 - A single dose of 0.5 ml
- Adults over 18 years
 - A single dose of 0.5 ml.

Contraindications

- Vaccine contains a limited amount of egg protein
- In persons who have severe egg allergy
 - Egg protein can induce immediate hypersensitivity reactions
- Known hypersensitivity to eggs, chicken protein, neomycin or polymyxin
- Hypersensitivity to seasonal influenza vaccines previously
- Hypersensitivity to Thiomersal containing vaccines previously

Precautions

- Review previous medical history on hypersensitivity to any type of vaccine
 - not a contraindication.
- Postpone vaccination during febrile and acute illness
- Guillain Barre Syndrome (GBS) within 6 months of previous influenza vaccination,
 - I A /H1N1/ 2009 MV vaccination - based on potential benefits and risks.
- Immunocompromised individuals- diminished immune response
- Availability of emergency trays and staff to manage hypersensitivity reactions

Safety

- Conclusions are based on
 - relatively limited use of IA/H1N1 MV vaccine
 - extensive use of seasonal TIV in industrialized countries
- AEFI in adults:
 - Most common local AEFI
 - tenderness, pain, redness and swelling at the injection site
 - Majority - mild and self limiting
 - Most common systemic AEFI
 - headache, malaise and muscle ache
 - Majority- mild and self limiting

Safety

- AEFI in children:
 - Most common local AEFI
 - pain redness and swelling at the injection site.
 - Majority - mild and self limiting
 - Most common systemic AEFI
 - irritability, rhinitis, fever, cough, loss of appetite, vomiting, diarrhea, headache, muscle ache and sore throat
 - Majority - mild and self limiting

WHO experience : 1st safety review by GACVS

- Vaccine use ->50 countries since September
- Passive PMS- since introduction
- 150 million doses distributed (from 21.09-02.12)
- 45 million doses - adjuvanted vaccines
- Reported AEFI- within the known safety profile
- Severe AEFI - very limited
 - mainly allergic reactions
 - Immediate hypersensitivity reactions (urticaria, angioedema and anaphylaxis)
 - Overall reporting rate of anaphylaxis- 0.1-1.0 per 100000 doses
 - Reporting rate in Canada- 4.0 per 100000 doses (adjuvanted vaccine)

WHO experience : 1st safety review by GACVS

- Deaths related to IA/H1N1 MV vaccine
 - temporally associated deaths- small number
 - Cause of death - majority unrelated to vaccination
 - Related to vaccination - due to anaphylactic shock
- Safety in immunocompromised - no evidence of safety concerns

VAERS surveillance of H1N1MV

- In USA- 99.3 million doses as of 30/12/09
- 7326 AEFI reported (7.4/100000 doses)
- 94% non serious AEFI (local)
- 6% serious AEFI (not different from seasonal influenza vaccines)
 - 32 deaths - no common cause or pattern to causally associate with vaccine
 - 37 GBS cases (back ground rate 80-160 cases per week)
- No new or unusual events or patterns
- Limited data of H1N1 on AEFI in pregnancy
- 2 million pregnant women followed up from 2000-2003 in VAERS data base
 - No unexpected AEFI of TIV
 - No difference of AEFI among pregnant & non pregnant vaccine recipients

Important information

- Clear to slightly opaque liquid with some sediment that resuspends upon shaking.
- Multi dose vials contain 5ml or 10ml
- Multi dose vials
 - Storage - 2-8⁰ C
 - Must not be frozen
 - Protect from light
 - Discard within 24 hours after piercing the stopper (local recommendation - 6 hours)
 - Shelf life - 12 months in 2-8⁰ C