

**Even when it comes to
Pandemic influenza planning...**
“Children are Not Little Adults!”



Prepared by:

Anne Matlow MD

Director, Infection Prevention and Control

Hospital for Sick Children, Toronto

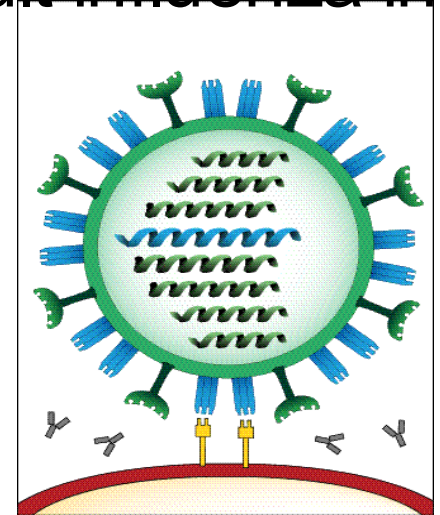
CAPHC Annual Meeting,

Vancouver, October 17, 2006



Objectives

- To contrast paediatric & adult influenza in the following categories:
 - Presentation
 - Transmission
 - Treatment
 - Prophylaxis
- To understand what the current human experience with avian influenza H5N1 can teach us about pandemic planning





Epidemic Influenza is a common, miserable & often serious illness

- Incidence: 5% to 20% of population
 - 15-42% in children
 - 1% of those children infected are hospitalized
- Acute respiratory illness
 - Abrupt onset of symptoms
- Spread by coughing and sneezing
- Serious fatality: 0.5 to 1 per 1000
 - Higher in elderly & very young

Presentation of Clinical Influenza Differs By Age Group

Sign/Symptom	Children	Adults	Elderly
Cough (nonproductive)	++	++++	+++
Fever	+++	+++	+
Myalgia	+	+	+
Headache	++	++	+
Malaise	+	+	+++
Sore throat	+	++	+
Rhinitis/nasal congestion	++	++	+
Abdominal pain/diarrhea	+	-	+
Nausea/vomiting	++	-	+

++++ Most frequent sign/symptom

+ Least frequent

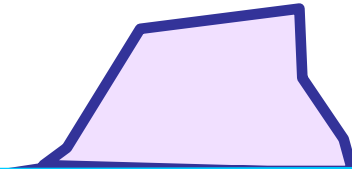
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Influenza Associated Deaths in Children: 2003-2004

<u>Age</u>	<u># (%)</u>	<u>Deaths/ 100,000 children</u>
< 6 mo	18 (12)	.89
6-11 mo	12 (8)	.59
1 y	31 (20)	.77
2 y	14 (9)	.35
3	9 (6)	.23
4	12 (8)	.31
5 -10 y	26 (17)	.11
11-17	31 (20)	.11

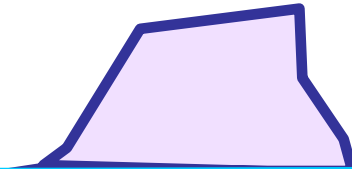
* 53% underlying chronic conditions NEJM Dec, 2005

Influenza Illness: *The Tip of the Iceberg*



Influenza Illness

Influenza Illness: *The Tip of the Iceberg*



Influenza Illness



Antiviral Prophylaxis

ADULTS

(AMANTADINE)
NEURAMINIDASE
INHIBITORS

- oseltamivir po ✓
- zanamivir (inhaled) ✓

CHILDREN

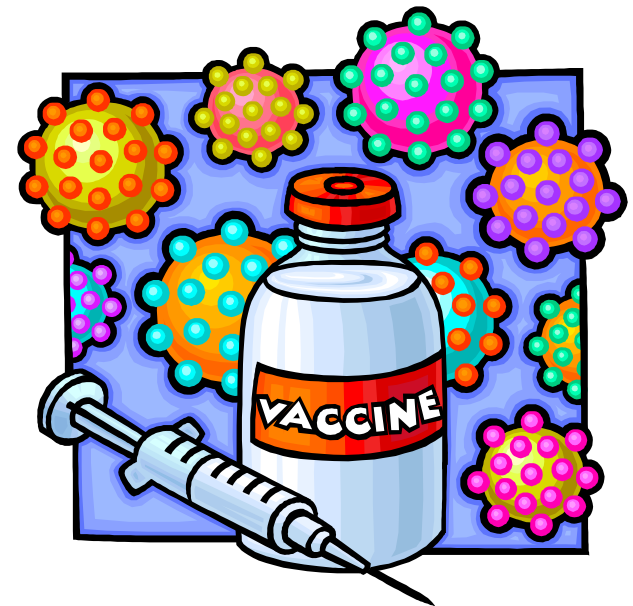
(AMANTADINE)
NEURAMINIDASE
INHIBITORS

- oseltamivir > 13 yr
- zanamivir > 1 yr



Key Prevention Strategy: Immunization

- Inactivated flu vaccine > 6 months
- Live attenuated (cold adapted) intranasal vaccine > 5 years





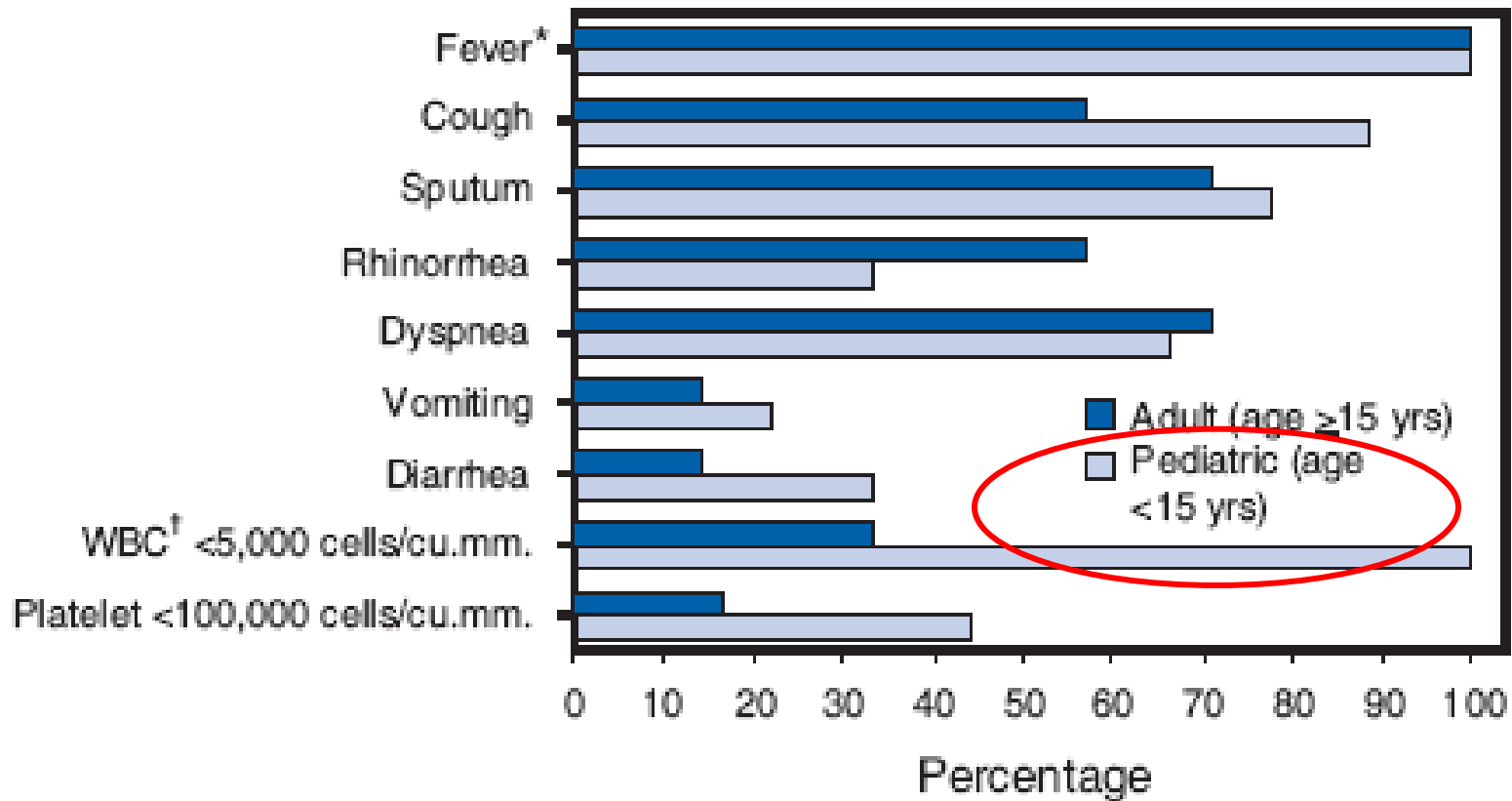
H5N1
AVIAN
FLU

Cumulative Number of Confirmed Human Cases of Avian Influenza A/(H5N1) Reported to WHO: October 3,2006

Country	2005		2006		Total	
	cases	deaths	cases	deaths	cases	deaths
Azerbaijan	0	0	8	5	8	5
Cambodia	4	4	2	2	6	6
China	8	5	12	8	21	14
Djibouti	0	0	1	0	1	0
Egypt	0	0	14	6	14	6
Indonesia	19	12	50	40	69	52
Iraq	0	0	3	2	3	2
Thailand	5	2	3	3	25	17
Turkey	0	0	12	4	12	4
Vietnam	61	19	0	0	93	42
Total	97	42	105	70	252	148

PRESENTATION OF AVIAN INFLUENZA

FIGURE 2. Clinical manifestations of influenza A (H5N1) patients from onset of illness to hospital admission, by symptom and age — Thailand, December 2003–October 2004



* Body temperature of $>100.4^{\circ}\text{F}$ ($>38^{\circ}\text{C}$).

† White blood cell.



Age-related outcome of avian influenza in Thailand

- Of the 16 patients included in the study, nine (56%) were aged <15 years.
- Overall mortality was 75%
- Mortality <15 years was 90%,
- Mortality >15 years was 57%,

(OR = 6.4; CI = 0.4--204.2)



In Conclusion...

- Children will be affected hard
- We must be prepared!

