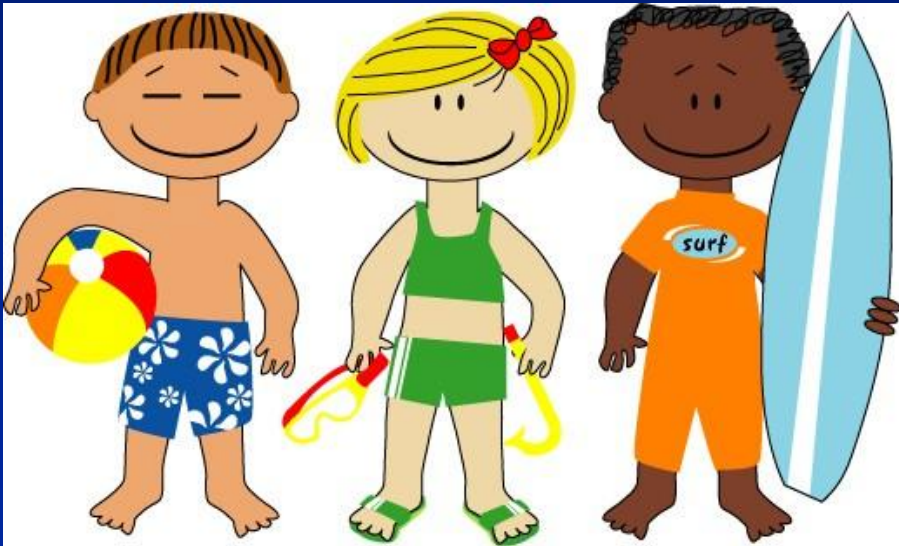


Flu 2013: Protect Yourself and Those You Care About



Meg Fisher, M.D.
Medical Director,
The Children's Hospital at

■ ■ **Monmouth Medical Center**
■ ■ *An affiliate of the Saint Barnabas Health Care System*

Disclosures

I have no disclosures.

If I mention off label uses of drugs
or vaccines, I will tell you it is an
off label use.

Objectives

- Counsel regarding influenza vaccination
- Recognize influenza
- Prescribe antiviral agents for children

“I had a little bird.
His name was Enza.
I opened the window.
And in flew Enza.”

A chant popular during the influenza pandemic of 1918

Influenza Viruses

- Orthomyxovirus
- Types A, B and C
- Yearly winter outbreaks of A and B
- Hemagglutinin (H)
- Neuraminidase (N)

Antigenic Changes

- Shift: Major change in surface
Pandemics
To date with A only
- Drift: Minor change in surface
Yearly outbreaks

Influenza Pandemics

1918: H1

1957: H2

1968: H3

1977: H1

2009: H1N1

Animal strains

- Birds: virus in the gut
- Pigs: virus in the respiratory tract
- Pig, avian and human influenza exchange genes to form novel strains: 2009 H1N1, H3N2v

Influenza: The Illness

- Symptoms: fever, chills, aches, malaise, myalgia, gastrointestinal in younger
- Signs: fever, pharyngitis, rhinitis, cough

Epidemiology

Usually winter outbreaks

Cruise ship outbreaks - Alaska in summer

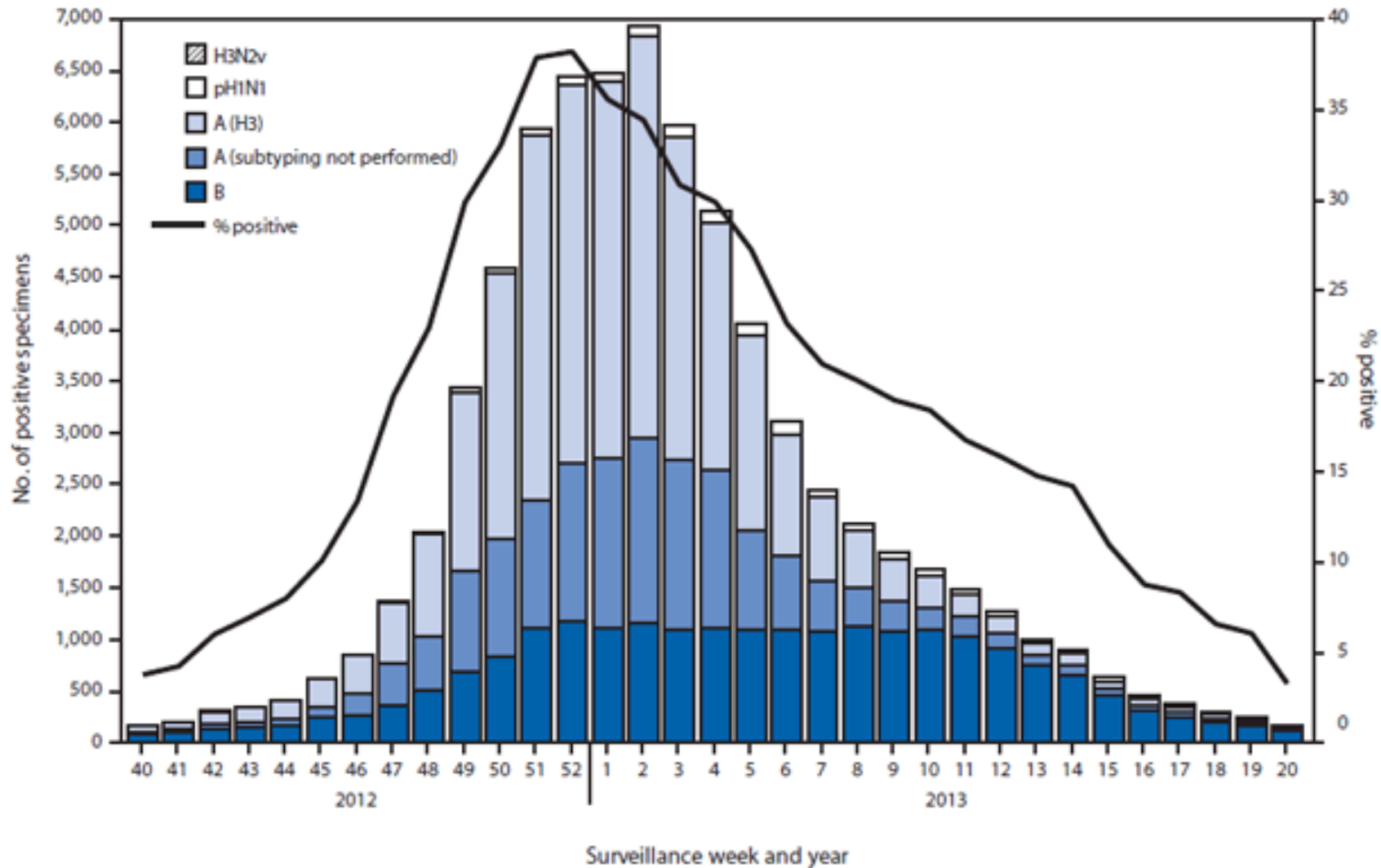
Children - major role as transmitters

Droplet and contact spread

Contagious 1 day before to 7 days after

Incubation 1 to 3 days

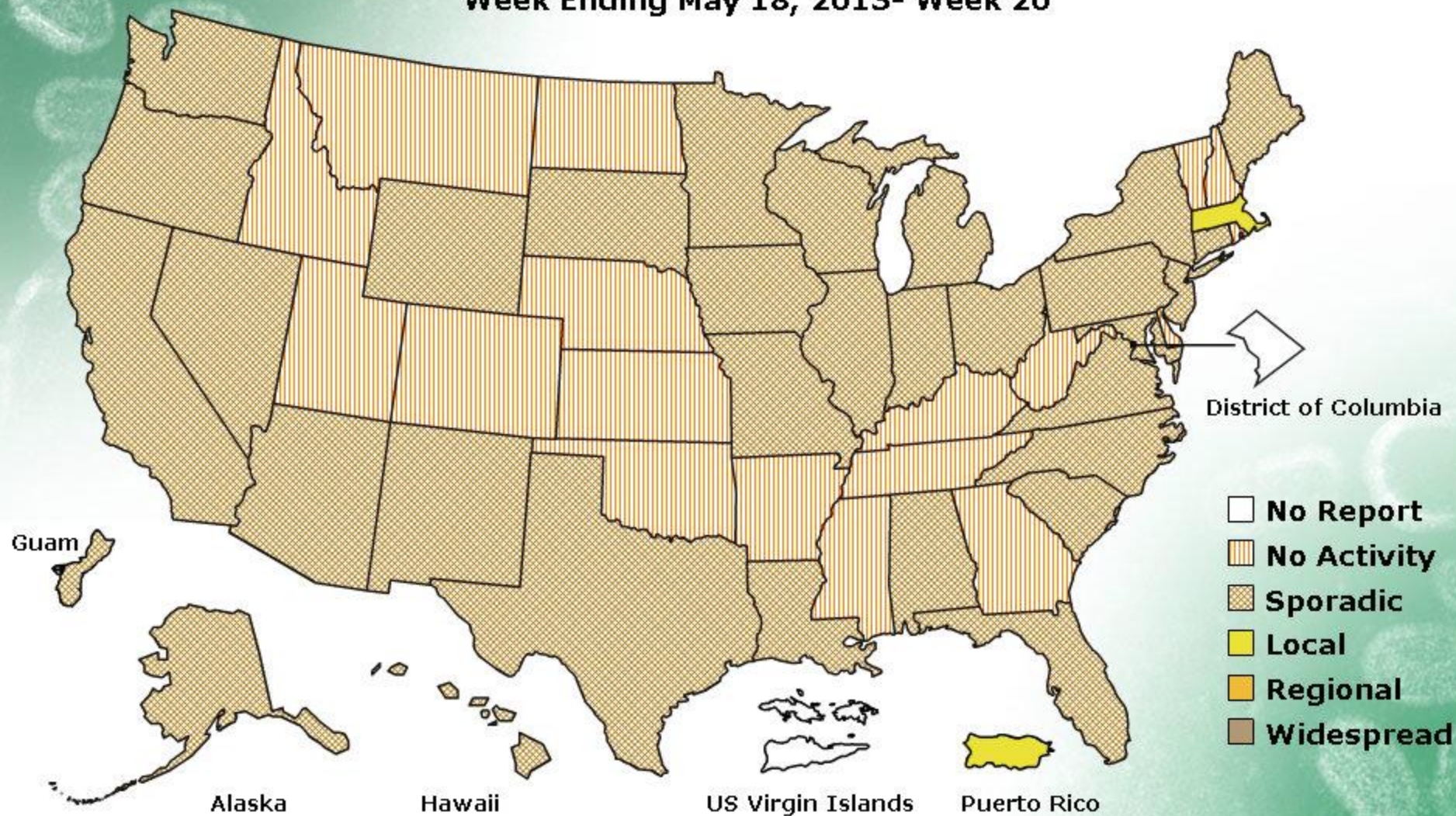
2012 to 2013 Season



FLUVIEW

A Weekly Influenza Surveillance Report Prepared by the Influenza Division
Weekly Influenza Activity Estimates Reported by State and Territorial Epidemiologists*

Week Ending May 18, 2013- Week 20



Children and Influenza

- Highest attack rates: 15-42% yearly
- Highest hospitalization rates
- Major transmitters: shed higher titers for longer times, poor hygiene and less control of nasal excretions

Complications of Influenza

- Bacterial superinfection: pneumonia, otitis media, sinusitis
- Reye syndrome
- Triggers asthma
- Myositis
- Encephalitis

Influenza Diagnosis

- Clinical
- Culture: throat gargle or nasal wash
- Antigen detection: rapid but lacks sensitivity (70% at best)
- Serology not clinically useful

Management of Influenza

- Symptomatic:

Antipyretics may prolong viral shedding

Aspirin contraindicated

- Complementary therapies abound

- Antivirals: several available

Antivirals for Influenza

- Consider for children with underlying problems which increase risk
- Severe illness
- Special circumstances
- Start early for maximal effect

Children at Risk

- Underlying diseases: the usual suspects
- Neuromuscular and developmental
- Obese
- Age under 5 but especially under 2 years

Zanamivir (Relenza)

- Neuraminidase inhibitor, prevents viral entry
- Effective for influenza A and B
- Dose: 10 mg bid, inhaled
- Precaution in patients with bronchospasm

Oseltamivir (Tamiflu)

- Neuraminidase inhibitor, prevents viral entry
- Effective for influenza A and B
- Dose: varies by age and weight: 3 mg/kg/day under 1 yr; 45 mg bid if 15 to 23 kg; 60 if 23 to 40 kg; 75 if over 40 kg
- Side effects mild, gastrointestinal

Prevention of Influenza

Infection control:

- Hand washing and hand hygiene
- Isolation: masks/goggles – patients/staff
- Limit visitors/triage patient visits
- Respiratory hygiene: tissues and sleeves
- Keep your distance: 3 to 6 feet
- Stay home when you are sick

2013-2014 Vaccines

- One formulation of live attenuated: nasal
- Eleven formulations of inactivated: 10 given intramuscular; one intradermal
- Dose for intramuscular: <3years - 0.25 ml; 3+ - 0.5 ml
- Formulations licensed for various ages

<http://www.cdc.gov/flu/professionals/acip/2013-interim-recommendations.htm>

Live Attenuated Vaccine

- Cold adapted virus (LAIIV)
- Won't survive body temperature
- Same process as seasonal
- For ages 2 to 49 years
- Not for use in those with risks
- This year quadrivalent: 2 A + 2 B

Inactivated Influenza Vaccines

- Composition altered yearly
- Three or four strains: 2 A, 1 or 2 B
- For use in all over 6 months
- Multiple formulations; age matters
- Egg antigen content varies
- Cell culture/recombinant; age >18 yr

Inactivated Influenza Vaccines

- IIV3: Afluria (9+); Fluarix (3+); Flucelvax (18+); FluLaval (18+); Fluvirin (4+); Fluzone (6mo +); Fluzone Intradermal (18-64); Fluzone High-Dose (65+)
- IIV4: Fluarix Quad. (3+); Fluzone Quad (6mo+)
- REV3: FluBlok (18-49)

Seasonal Influenza Vaccine Schedule

- Yearly – start as soon as you get it
- Children under 3 years: lower dose
- Child under 9: two doses first season
- Contraindicated in persons with anaphylaxis to chicken or eggs

Chemoprophylaxis

- Agents: Oseltamivir, Zanamivir
- Indications: unable to vaccinate, pending response to vaccine, following household exposure, outbreak control

Resources

www.cdc.gov/flu/

www.aap.org – members – search takes you
to

Preparing Your Practice for Providing
Influenza Vaccines

Table with vaccines and codes

www.cdc.gov/vaccinesafety/