

REVIEW OF THE 2012- 2013 INFLUENZA SEASON

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Infectious Disease Control Unit



July 11, 2013

LEARNING OBJECTIVE

- The participant will be able to...
 - Describe the timing and intensity of the Texas and US influenza peaks for the 2012-2013 season

OUTLINE

■ US

- Influenza surveillance components
- Review of 2012-2013 season
 - Viral surveillance
 - Outpatient illness surveillance
 - Mortality surveillance
 - Hospitalization surveillance
 - Geographic spread of influenza

■ Texas

- Influenza surveillance components
- Review of 2012-2013 season
 - Viral surveillance
 - Morbidity surveillance
 - Mortality surveillance

NATIONAL INFLUENZA SURVEILLANCE COMPONENTS

- 1. Viral surveillance**
 - a) Laboratory data
 - b) Novel influenza A surveillance
- 2. Outpatient illness surveillance**
- 3. Mortality surveillance**
 - a) Pneumonia & influenza deaths
 - b) Influenza-associated pediatric deaths
- 4. Hospitalization surveillance**
- 5. Summary of the geographic spread of influenza**

US FLU SEASON 2012-13: #1 - VIRAL SURVEILLANCE

a) Laboratory

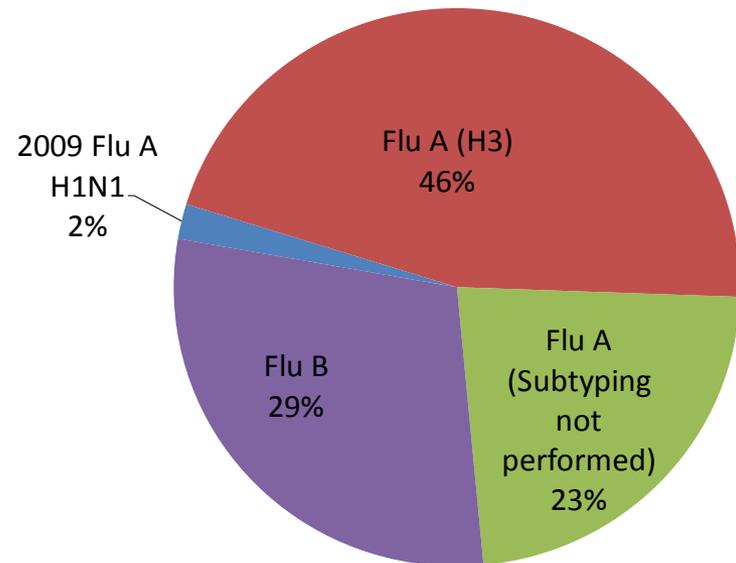
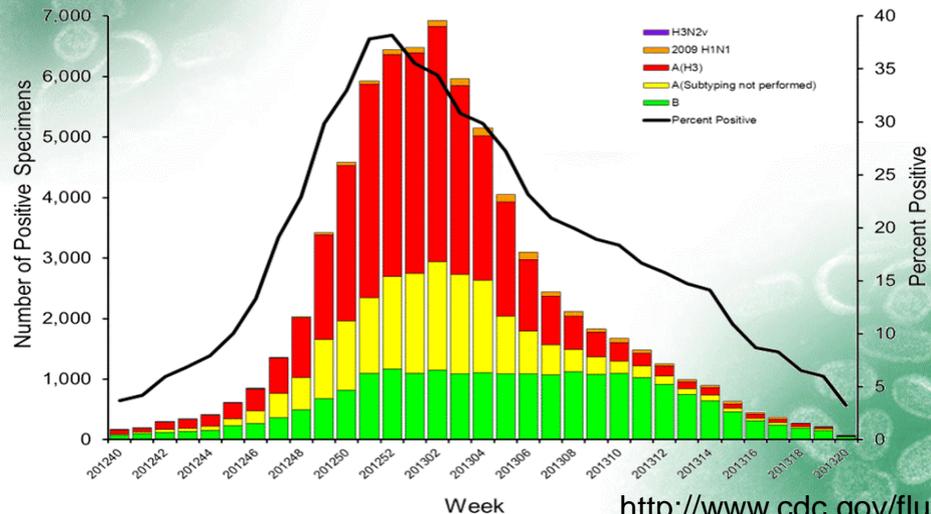
- Predominant subtype: Influenza A (H3N2)
- Peak week: 52 (week ending Dec 29)

b) Novel flu cases: 14 H3N2v (as of July 8, 2013)

FLUVIEW

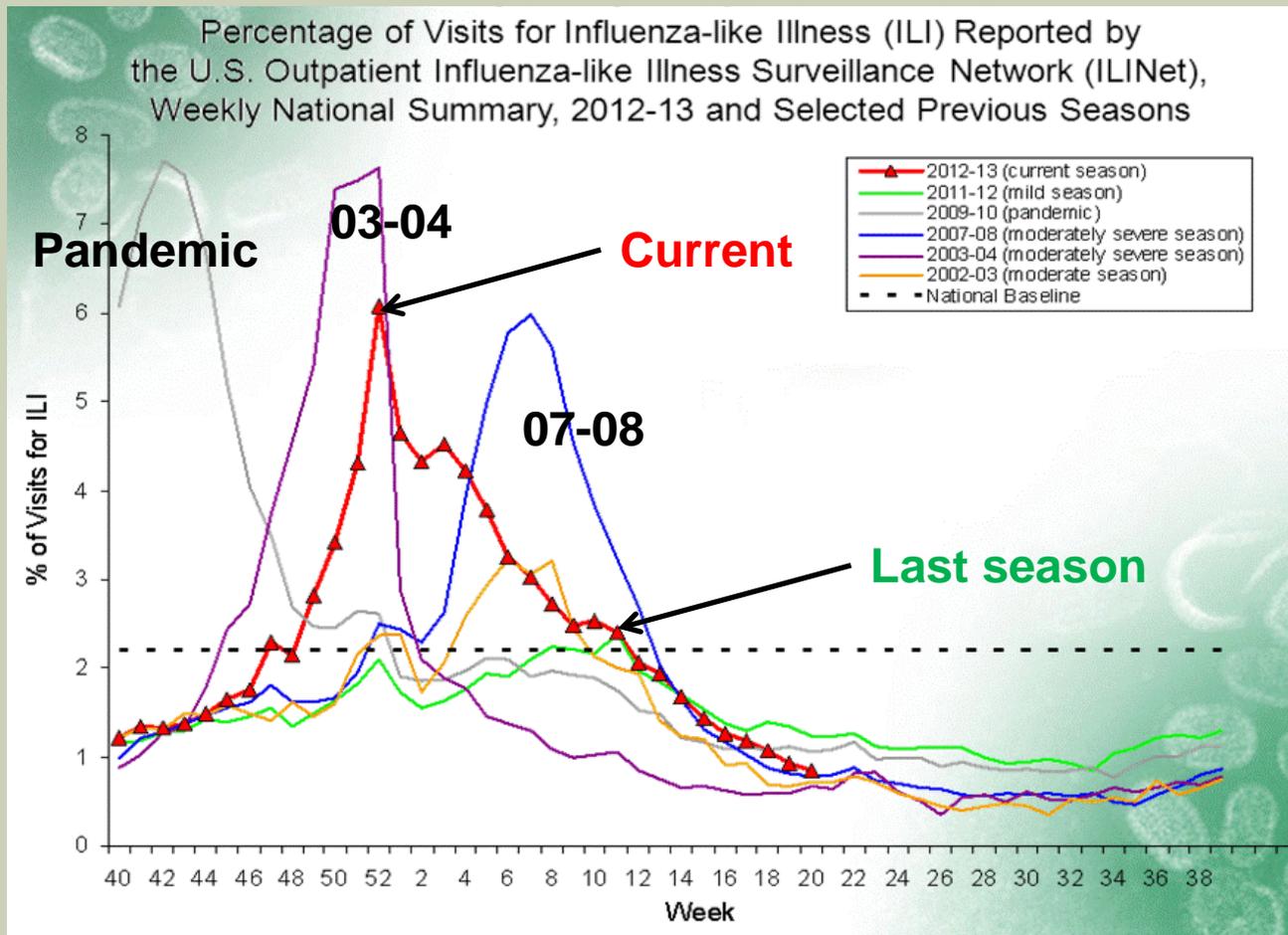
A Weekly Influenza Surveillance Report Prepared by the Influenza Division

Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2012-13



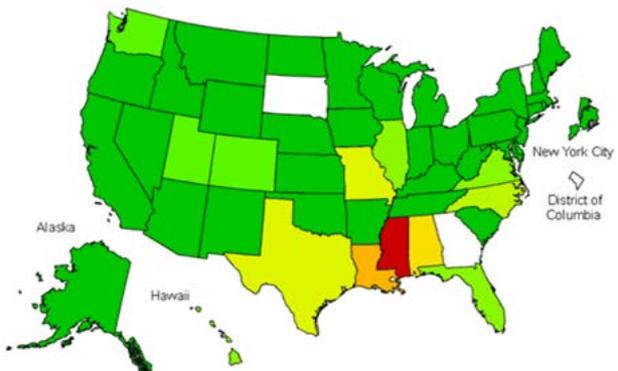
US FLU SEASON 2012-13: #2 - OUTPATIENT ILLNESS SURVEILLANCE

- US peak week: 52 (week ending Dec 29)

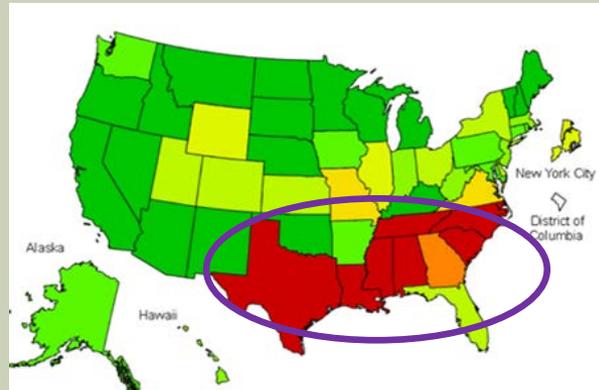


US FLU SEASON 2012-13: #2 - OUTPATIENT ILLNESS SURVEILLANCE

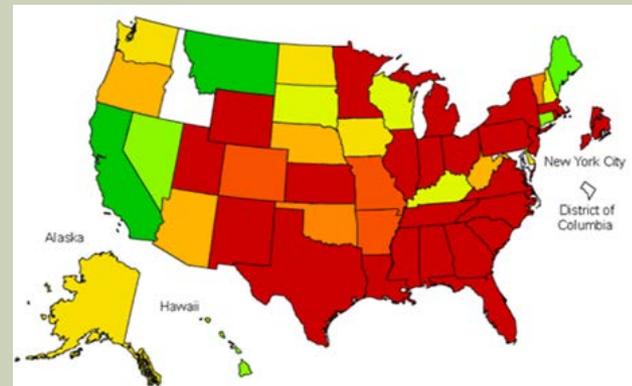
Week 46: Nov



Week 49: Dec



Week 52: Dec



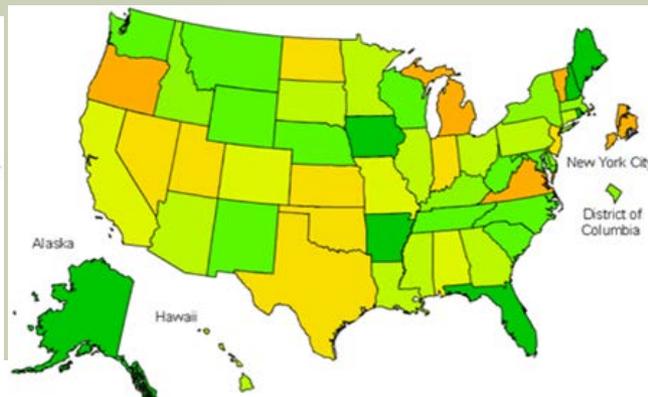
ILI Intensity (ILINet data)

<http://www.cdc.gov/flu/weekly/pastreports.htm>

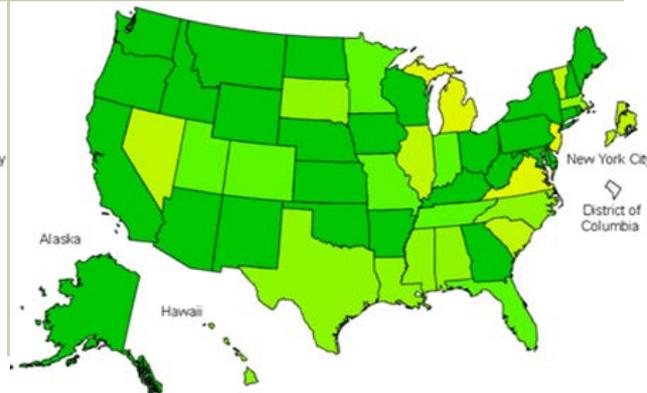
Week 4: Jan



Week 8: Feb



Week 13: Mar

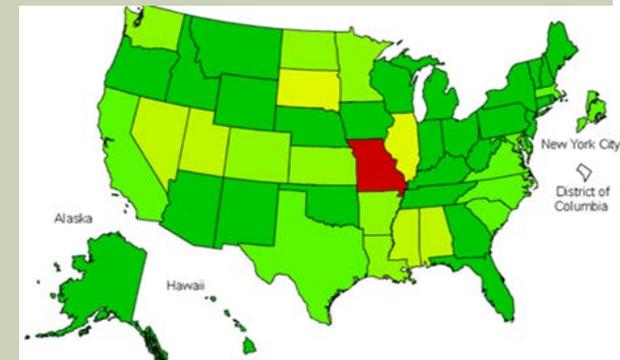
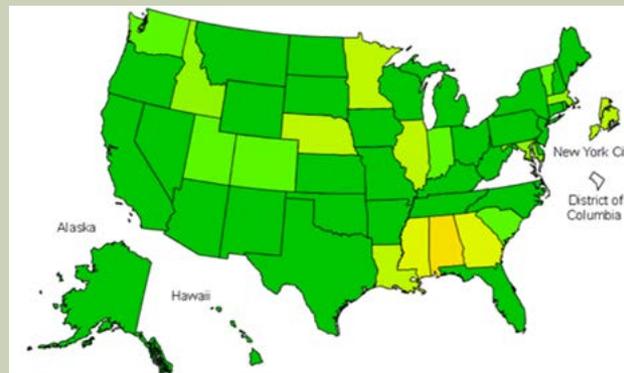
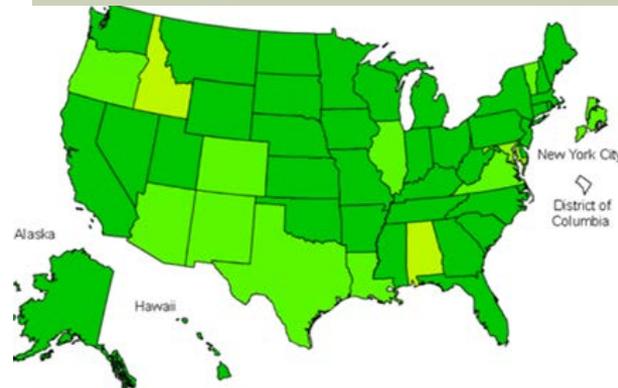


US FLU SEASON 2011-12: #2 - OUTPATIENT ILLNESS SURVEILLANCE

Week 46: Nov

Week 52: Dec

Week 6: Feb



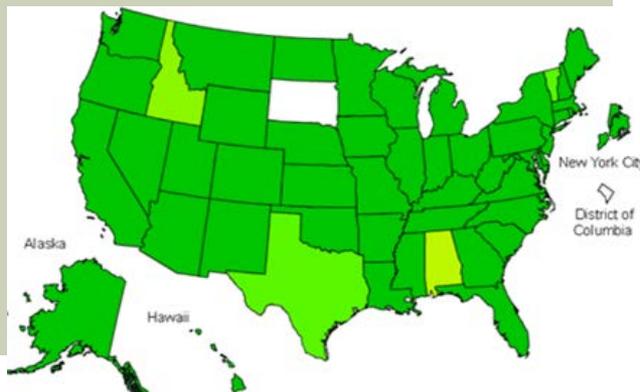
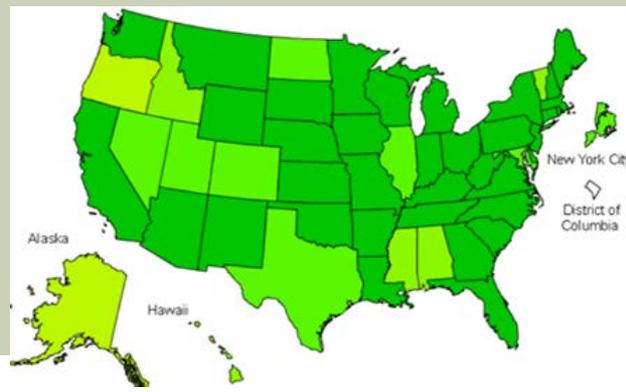
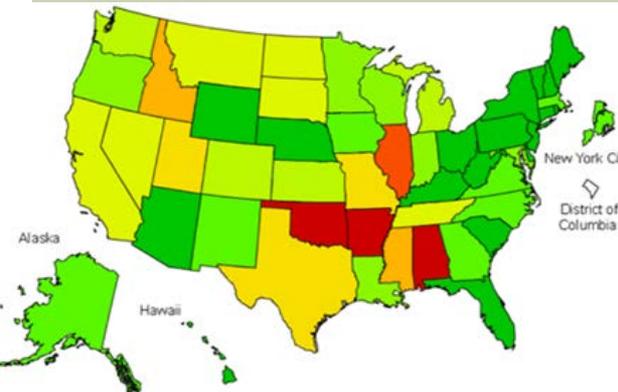
ILI Intensity (ILINet data)

<http://www.cdc.gov/flu/weekly/pastreports.htm>

Week 11: Mar

Week 15: Apr

Week 20: May



US FLU SEASON 2012-13: #3 - MORTALITY SURVEILLANCE

a) P&I deaths:

- 11 weeks above epidemic threshold

b) Pediatric deaths:

- 146 total
- 18* (12%) from TX

*Source: <http://www.cdc.gov/flu/weekly/weeklyarchives2012-2013/weekly20.htm>

FLUVIEW

A Weekly Influenza Surveillance Report Prepared by the Influenza Division



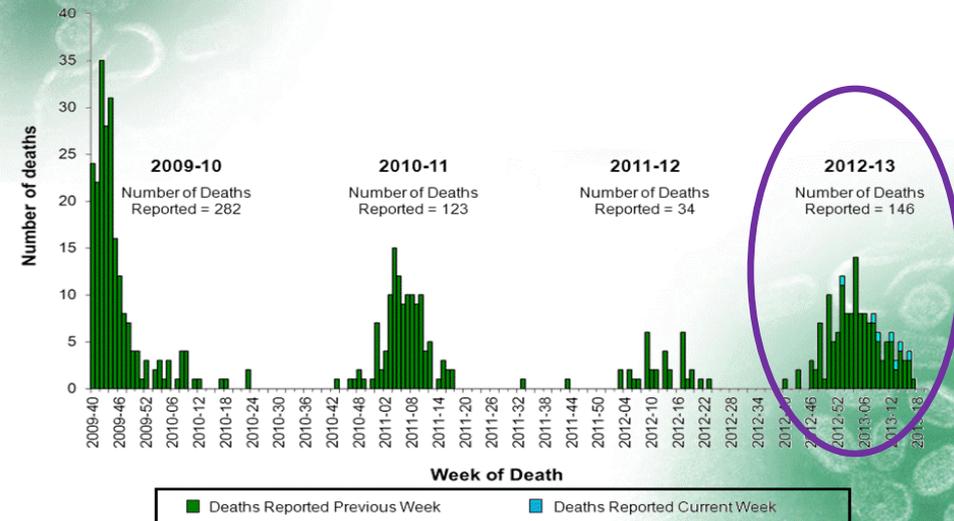
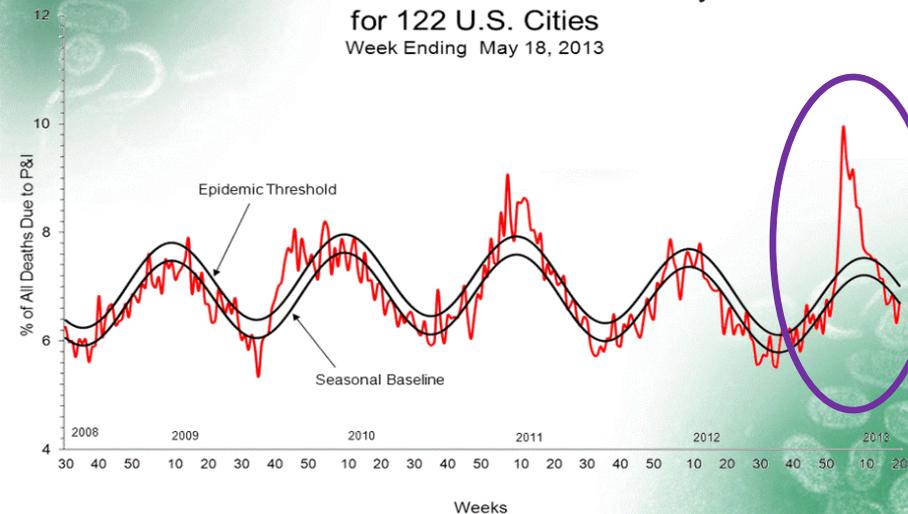
FLUVIEW

A Weekly Influenza Surveillance Report Prepared by the Influenza Division



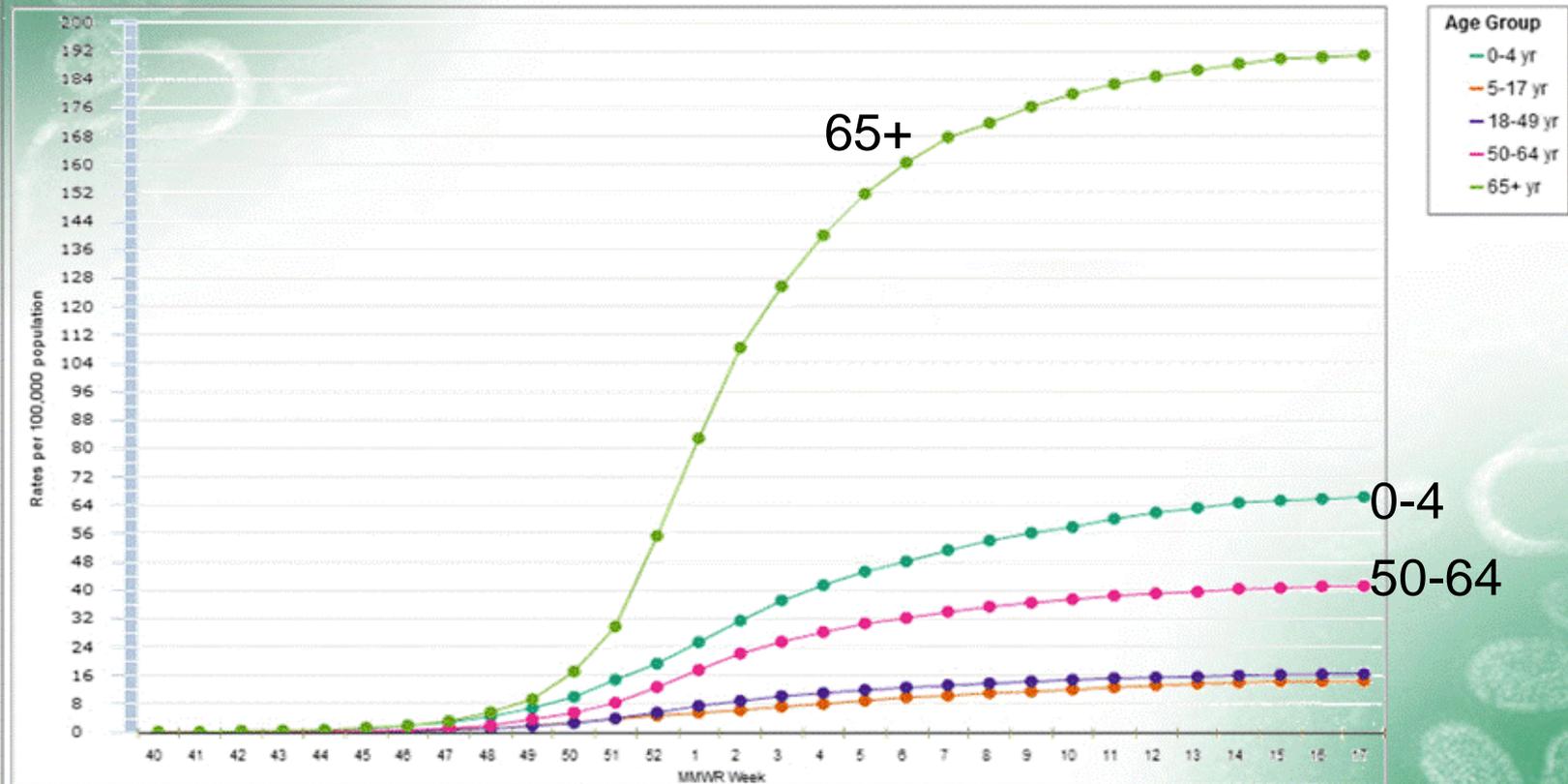
Pneumonia and Influenza Mortality
for 122 U.S. Cities
Week Ending May 18, 2013

Number of Influenza-Associated Pediatric Deaths
by Week of Death: 2009-10 season to present



US FLU SEASON 2012-13: #4 - HOSPITALIZATION SURVEILLANCE

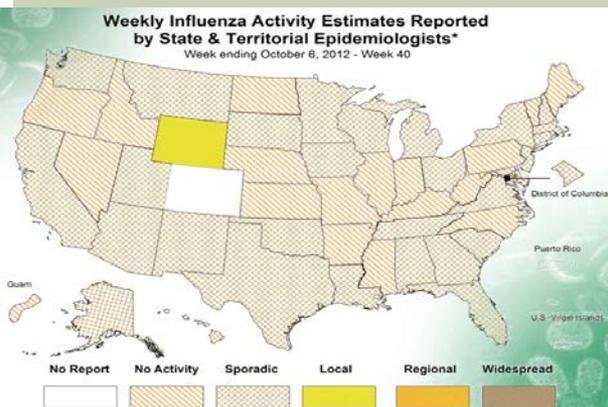
Laboratory-Confirmed Influenza Hospitalizations
Preliminary rates as of May 18, 2013



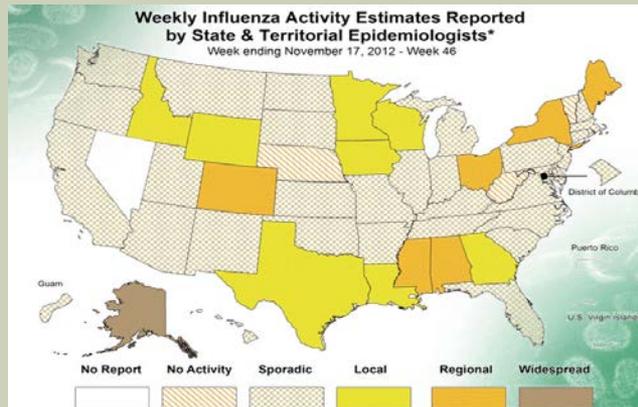
Data from the Influenza Hospitalization Surveillance Network (FluSurv-NET), a population-based surveillance for influenza related hospitalizations in children and adults in 15 US states. Incidence rates are calculated using the National Center for Health Statistics' (NCHS) population estimates for the counties included in the surveillance catchment area.

US FLU SEASON 2012-13: #5 - GEOGRAPHIC SPREAD

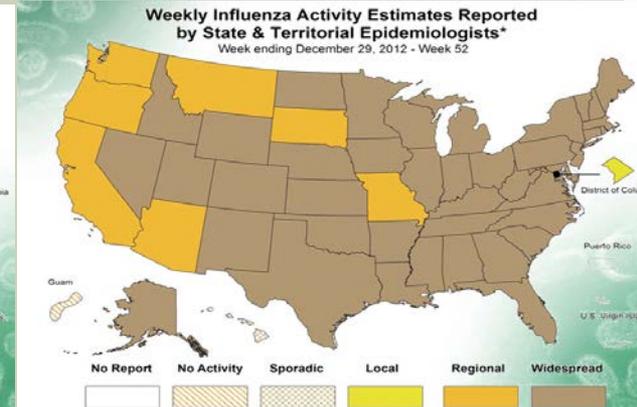
Week 40: Oct



Week 46: Nov

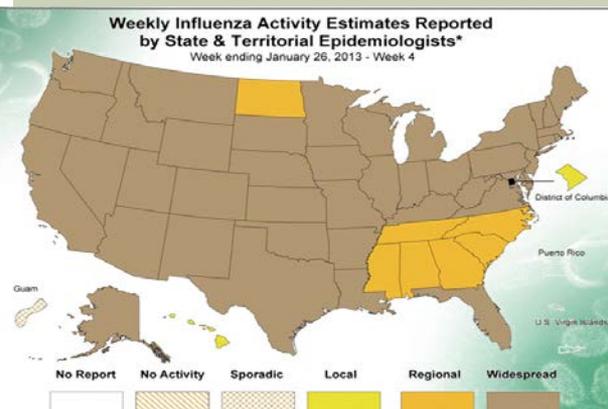


Week 52: Dec

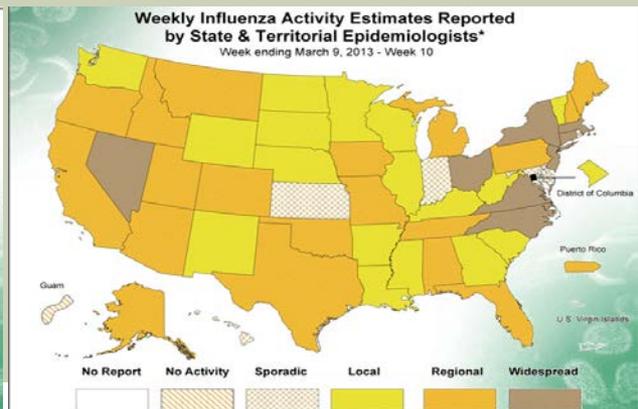


Source: <http://www.cdc.gov/flu/weekly/pastreports.htm>

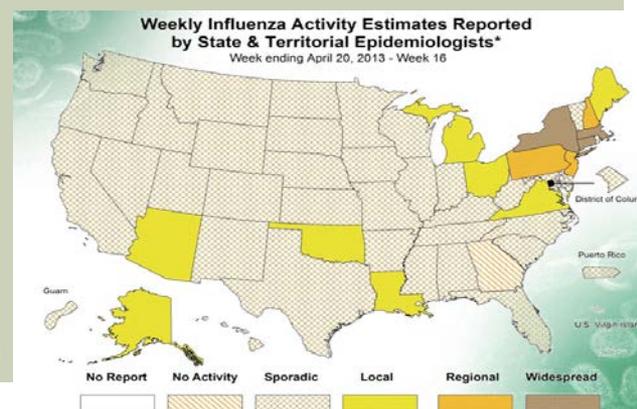
Week 4: Jan



Week 10: Mar



Week 16: Apr



TEXAS INFLUENZA SURVEILLANCE COMPONENTS

1. Viral surveillance

- a) Texas public health laboratory (PHL) data
- b) National Respiratory and Enteric Virus Surveillance System (NREVSS)

2. Morbidity

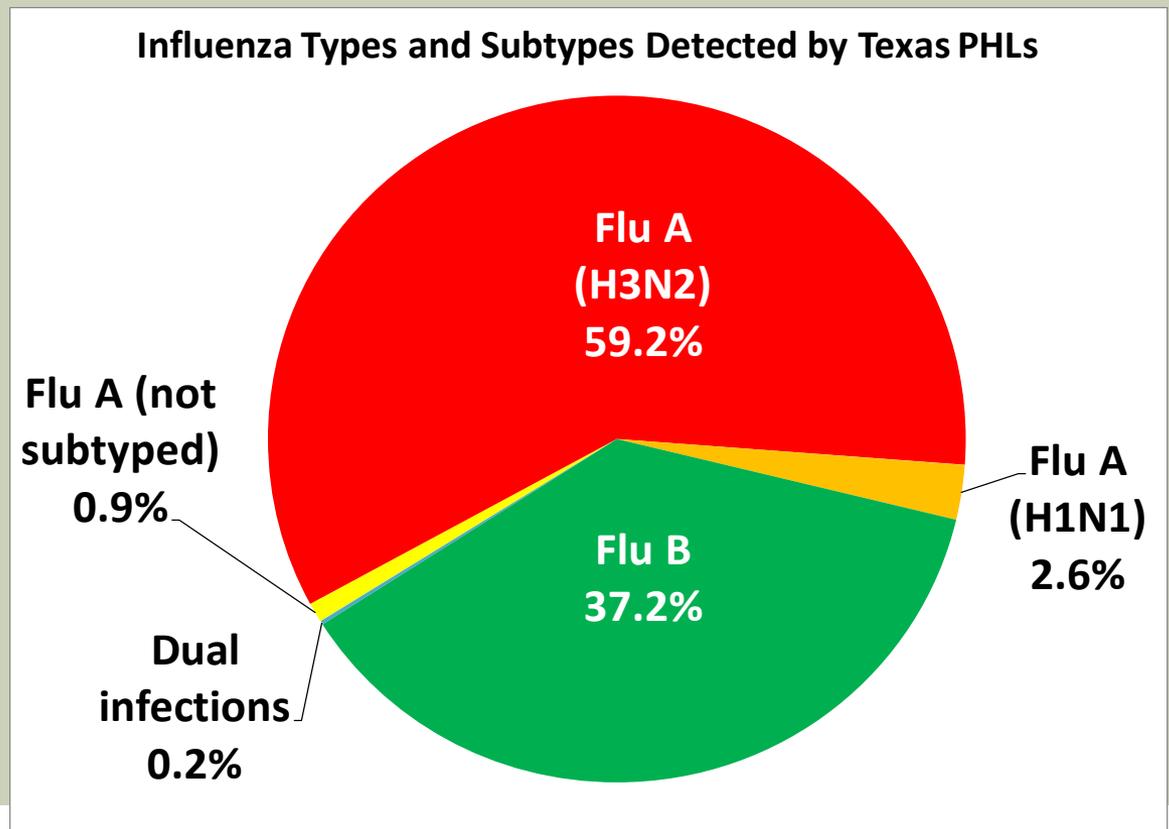
- a) US Outpatient Influenza-like Illness Surveillance Network (ILINet)
- b) ILI Activity
- c) Outbreaks
- d) Novel influenza cases

3. Mortality surveillance

- a) Influenza-associated pediatric deaths

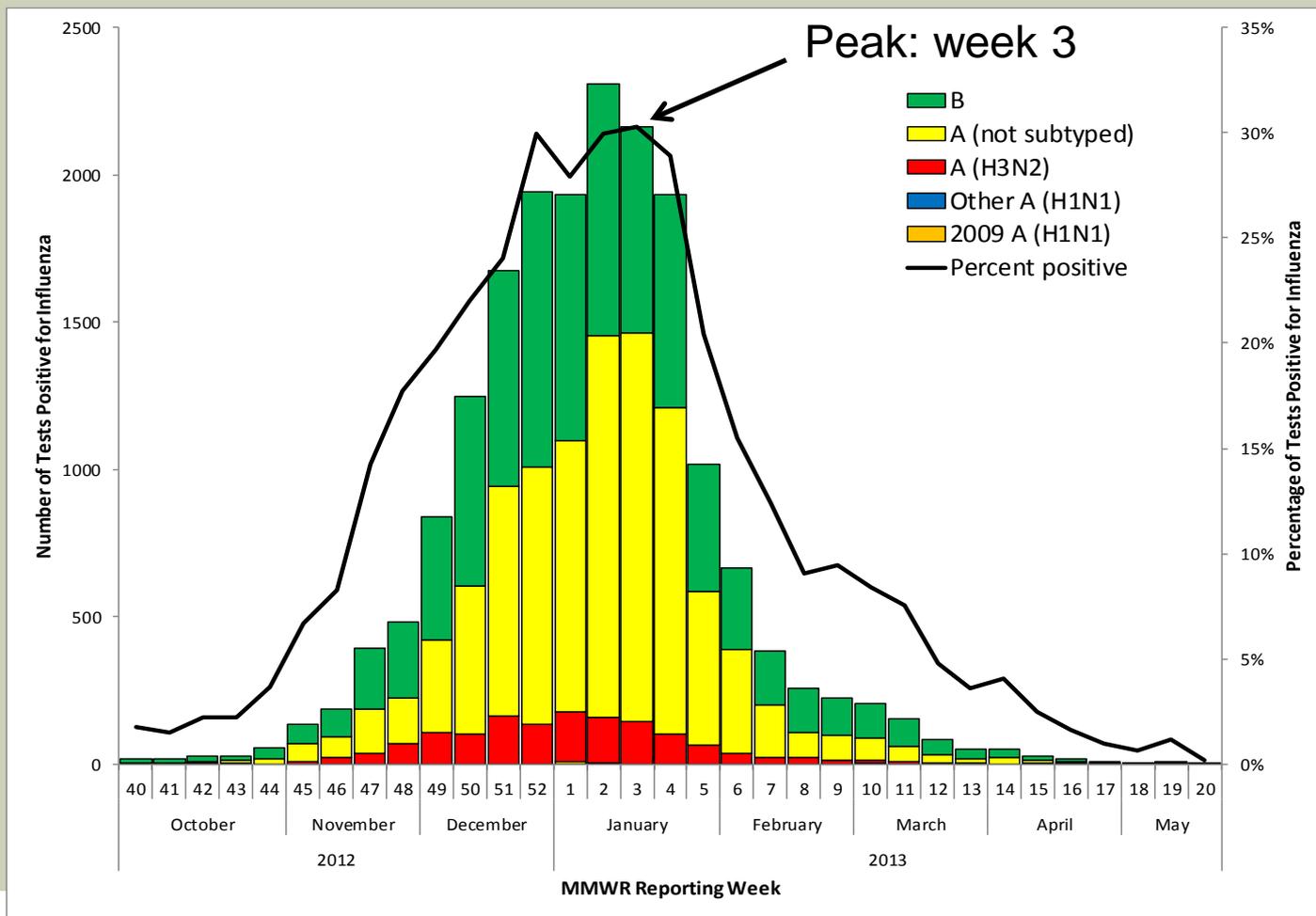
TEXAS FLU SEASON 2012-13: #1A - VIRAL SURVEILLANCE

- Predominant influenza type/subtype: Flu A (H3)
- DSHS & LRN peak weeks:
 - Actual peak: 51 (week ending Dec 22)
 - Secondary: 2 (week ending Jan 12)



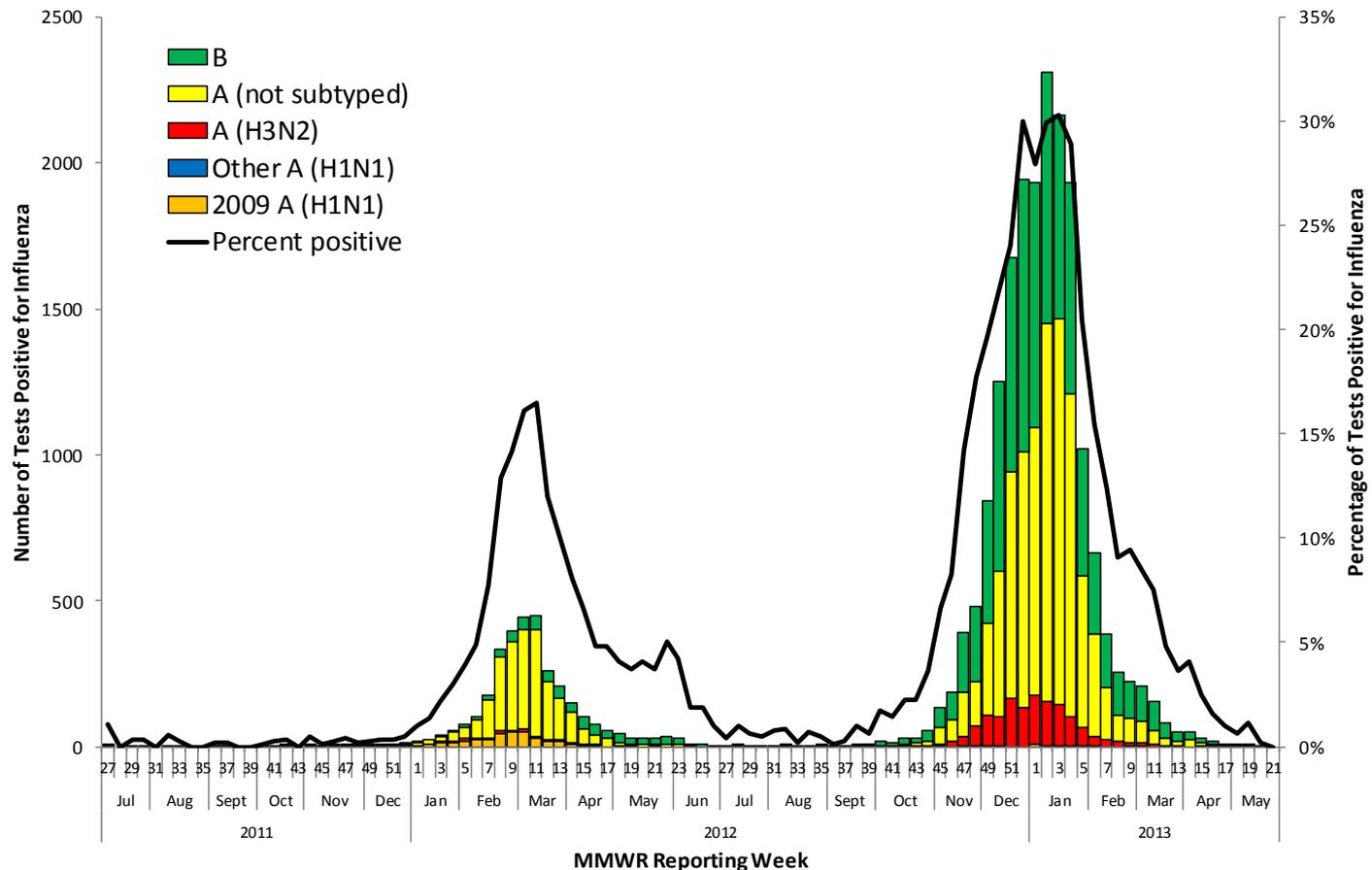
TEXAS FLU SEASON 2012-13: #1B - VIRAL SURVEILLANCE

Number and Percentage of Tests Positive for Influenza,
Texas NREVSS Laboratories



TEXAS FLU SEASON 2012-13: #1B – VIRAL SURVEILLANCE

Number and Percentage of Tests Positive for Influenza,
Texas NREVSS Laboratories, 2011-2013



TEXAS FLU SEASON 2012-13: #1 - VIRAL SURVEILLANCE

Antigenic characterization testing

- Results on 117 Texas influenza viruses tested by CDC
 - Influenza A (H1N1): 14 viruses tested
 - 100% match to vaccine strain
 - Influenza A (H3N2): 63 viruses tested
 - 100% match to vaccine strain
 - Influenza B: 42 viruses tested
 - 86% match to vaccine strain (Yamagata lineage)
 - 14% belonged to the Victoria lineage

TEXAS FLU SEASON 2012-13: #1 - VIRAL SURVEILLANCE

Antiviral Resistance Testing

- Texas specimens (n=125)

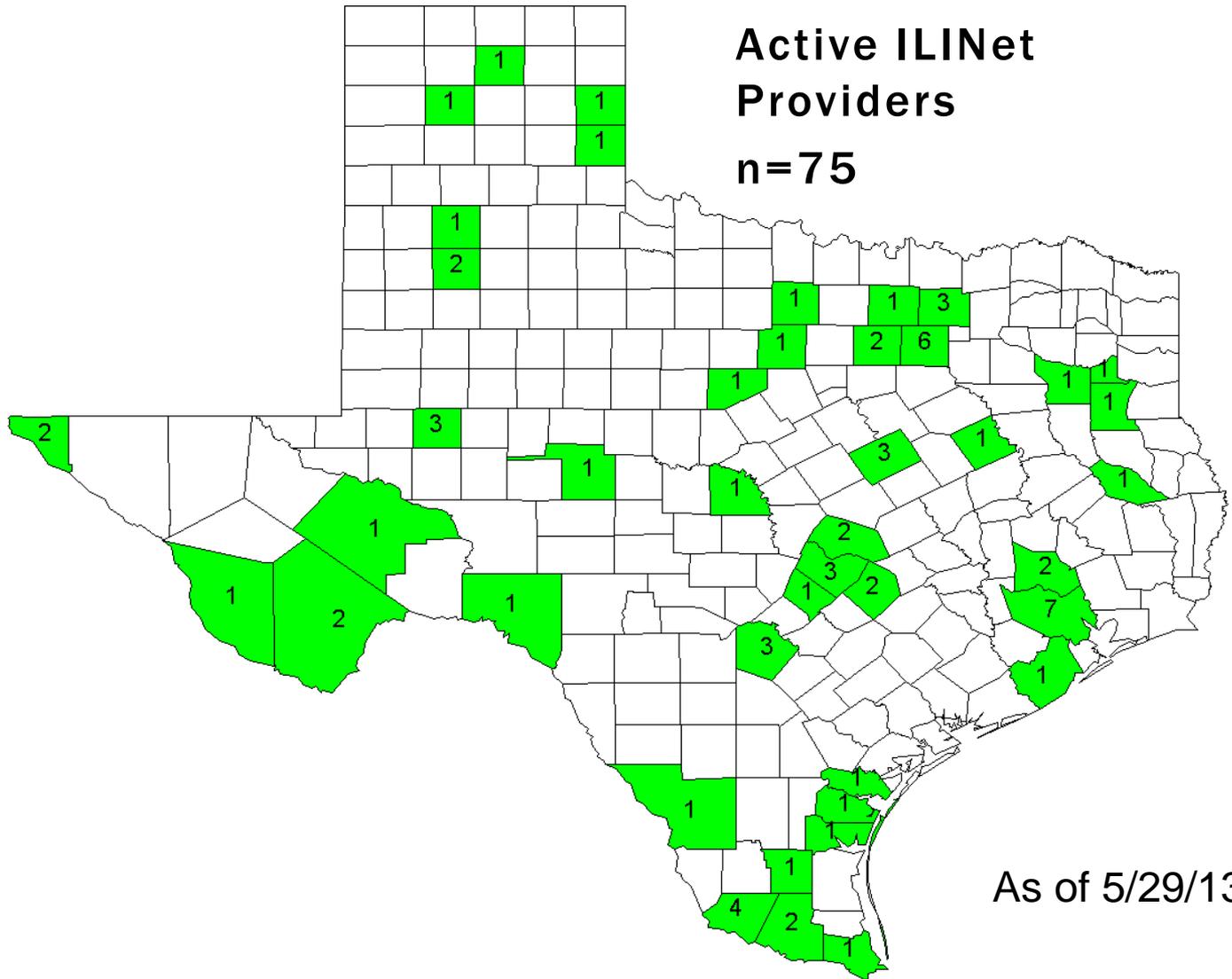
	Oseltamivir		Zanamivir	
	Virus samples tested (n)	Resistant viruses, number (%)	Virus samples tested (n)	Resistant viruses, number (%)
2009 influenza A (H1N1)	12	0 (0%)	12	0 (0%)
Influenza A (H3N2)	65	1 (1.5%)	65	0 (0%)
Influenza B	48	0 (0%)	48	0 (0%)

As of March 2013

TEXAS FLU SEASON 2012-13: #2A - MORBIDITY SURVEILLANCE

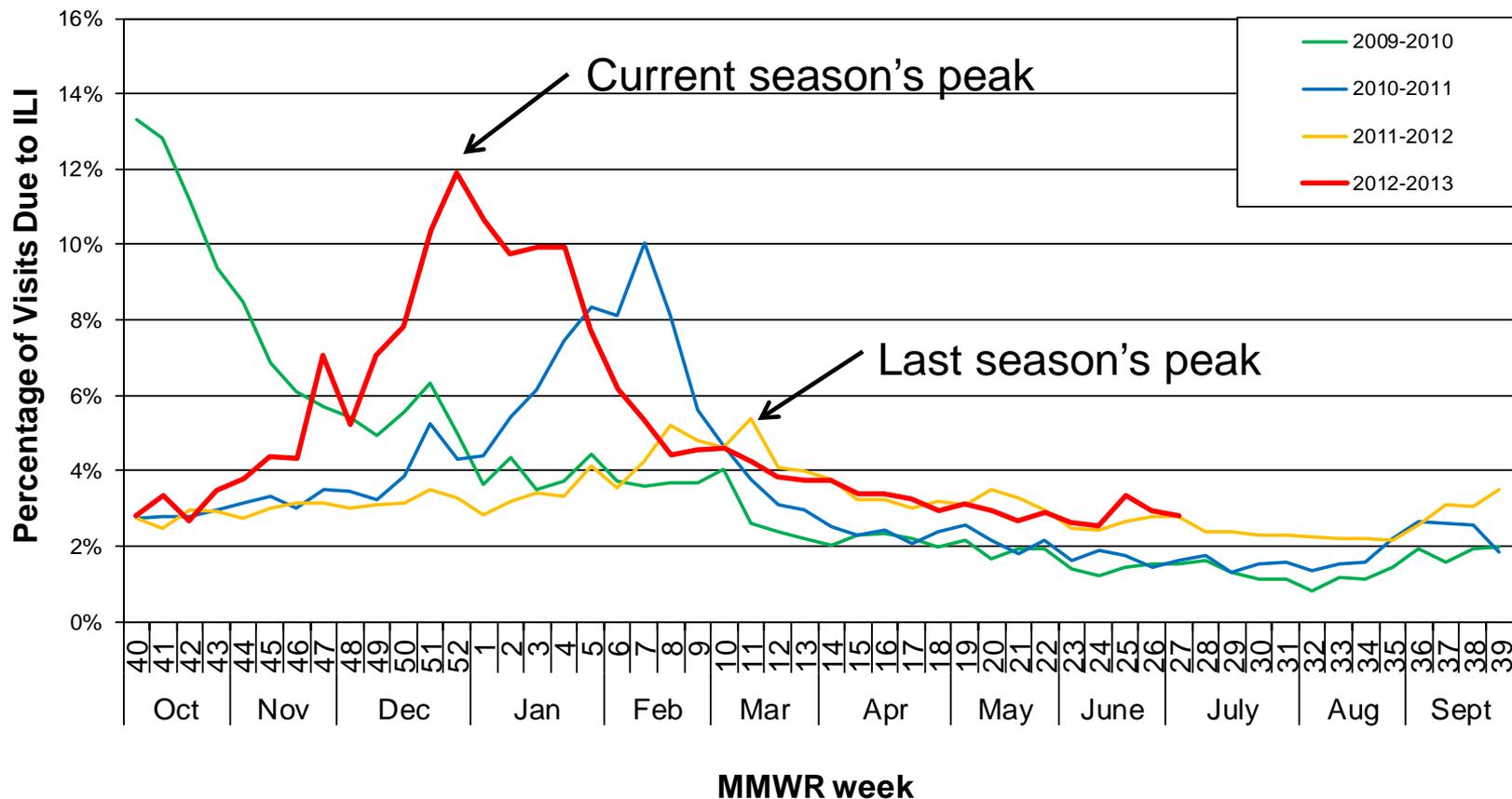
- US Outpatient Influenza-like Illness Surveillance Network
 - CDC project
 - Project ongoing since 1997-1998 season
 - Texas ILINet coordinator funded by CDC
 - Data reporting:
 - Providers report total number of patients seen each week and number of patients with ILI by age group

TEXAS FLU SEASON 2012-13: #2A - MORBIDITY SURVEILLANCE



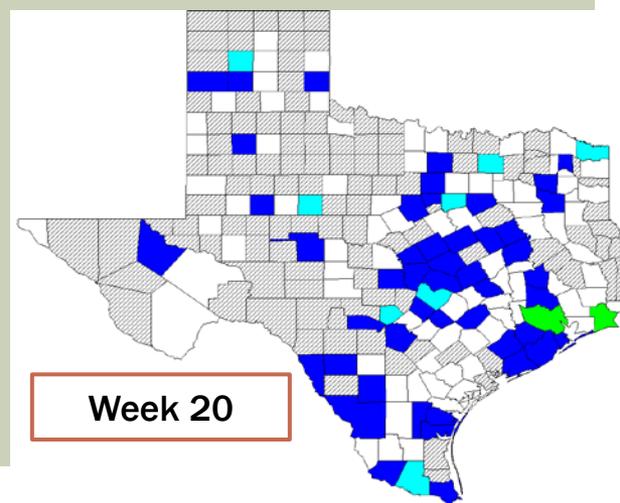
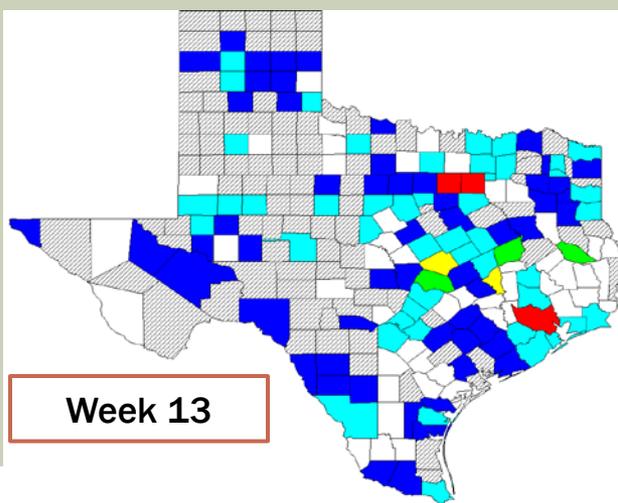
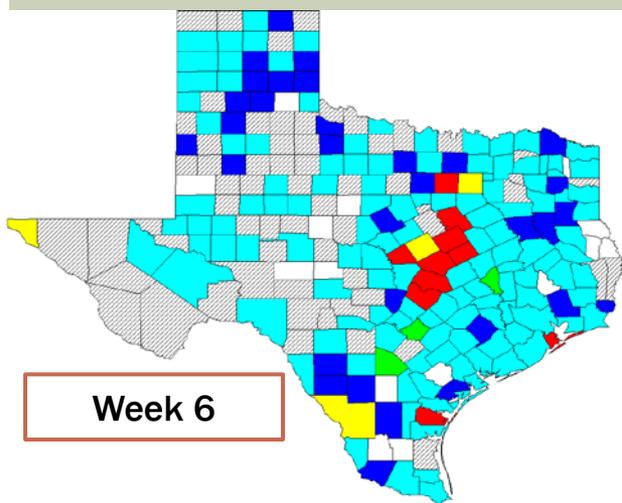
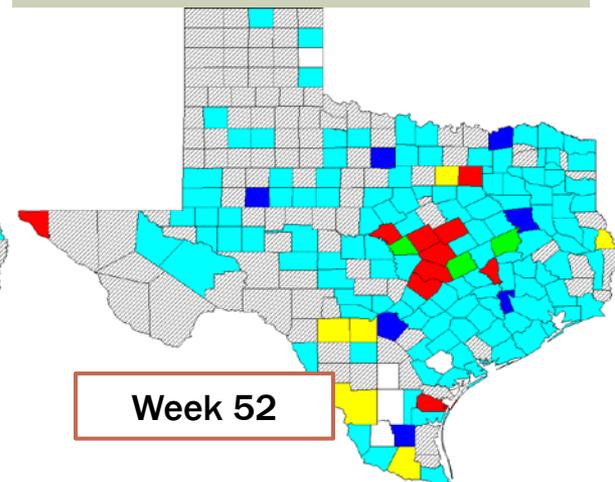
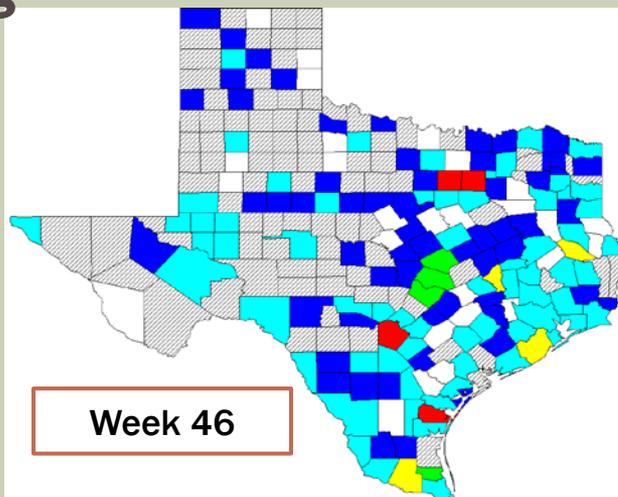
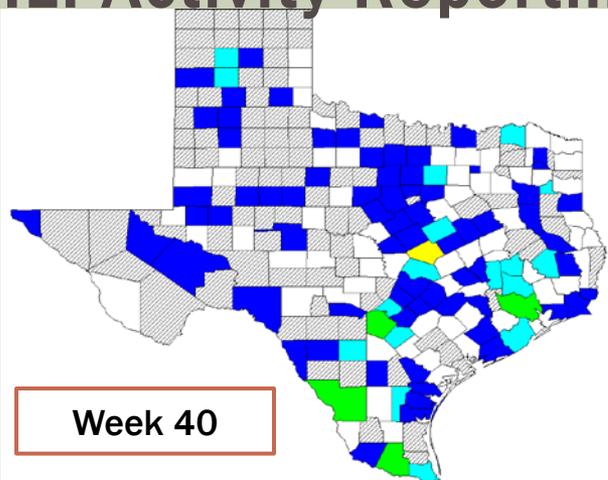
TEXAS FLU SEASON 2012-13: #2A - MORBIDITY SURVEILLANCE

Percentage of Visits Due to Influenza-like Illness
Reported by Texas Participants in ILINet, 2009–2013 Seasons



TEXAS FLU SEASON 2012-13: #2B - MORBIDITY SURVEILLANCE

ILI Activity Reporting



TEXAS FLU SEASON 2012-13: #2C - MORBIDITY SURVEILLANCE

- Institutional outbreaks – 19 total
 - Timeframe: November – March
 - Hospital: 2 outbreaks (ILI only)
 - Correctional facility: 1 outbreak (H3N2)
 - Long-term care facilities: 16 outbreaks
 - 88% of LTC outbreaks were due to Flu A
 - 50% were subtyped; all were H3N2
- School outbreaks – 4 total
 - Timeframe: October – January
 - Agents: ILI, flu A, flu B
 - No school closures



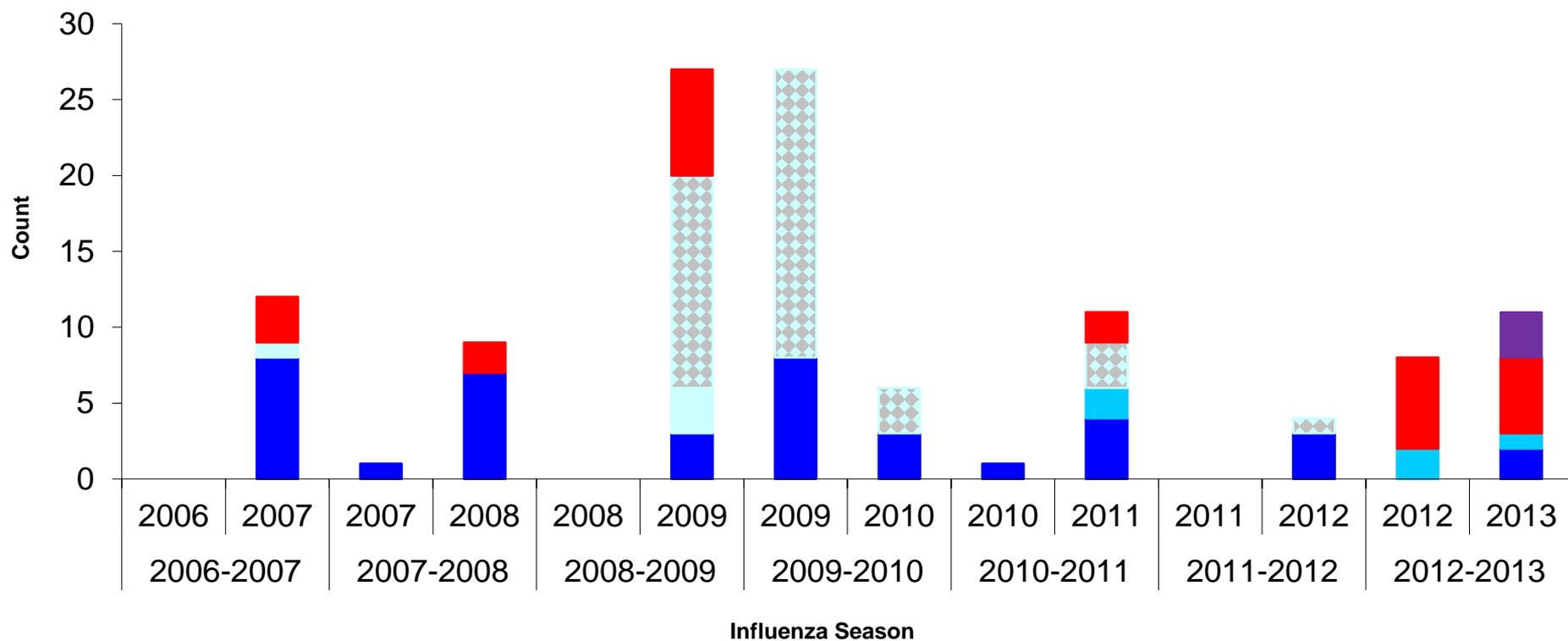
TEXAS FLU SEASON 2012-13: #3A - MORTALITY SURVEILLANCE

Influenza-associated pediatric mortality

- Definition:
 - Child <18 years of age with clinically compatible illness
 - Positive lab/diagnostic test
 - No complete recovery between illness and death
 - No alternative agreed upon cause of death*
- 19 total deaths (so far)
- Age range: 2 months to 17 years of age
- Timeframe: November – April
- Majority associated with influenza B
- 79% had an underlying medical condition or co-infection
- 86% not vaccinated for flu

TEXAS FLU SEASON 2012-13: #3A - MORTALITY SURVEILLANCE

Influenza-Associated Pediatric Mortality, Texas, 2007–2013



■ Flu A (unsubtyped)
 ■ Flu A H3N2
 ■ Flu A (non-p) H1N1
 ■ Flu A (2009-p) H1N1
 ■ Flu B
 ■ Flu A and B

CONTACT US

- Sign up for flu report notifications:

<http://www.dshs.state.tx.us/idcu/disease/influenza/surveillance/2013/>



- DSHS Austin's Flu Team mailbox:
flutexas@dshs.state.tx.us