TEXAS Department of State Health Services

Influenza Surveillance Systems in Texas 101

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Texas Department of State Health Services

Outline

- Overview of Influenza Surveillance
- Levels of Influenza Surveillance
- Components of Influenza Surveillance
- Supporting Influenza Surveillance

Key Terms

- Influenza Like Illness (ILI)
  - Fever ≥100ºF, plus:
    - Cough and/or
    - Sore throat
  - In the absence of another known cause
- Influenza A
  - May include both seasonal and novel/variant strains
- Influenza B
- 2009 H1N1
  - Also referred to as swine flu, pandemic flu and pandemic H1N1

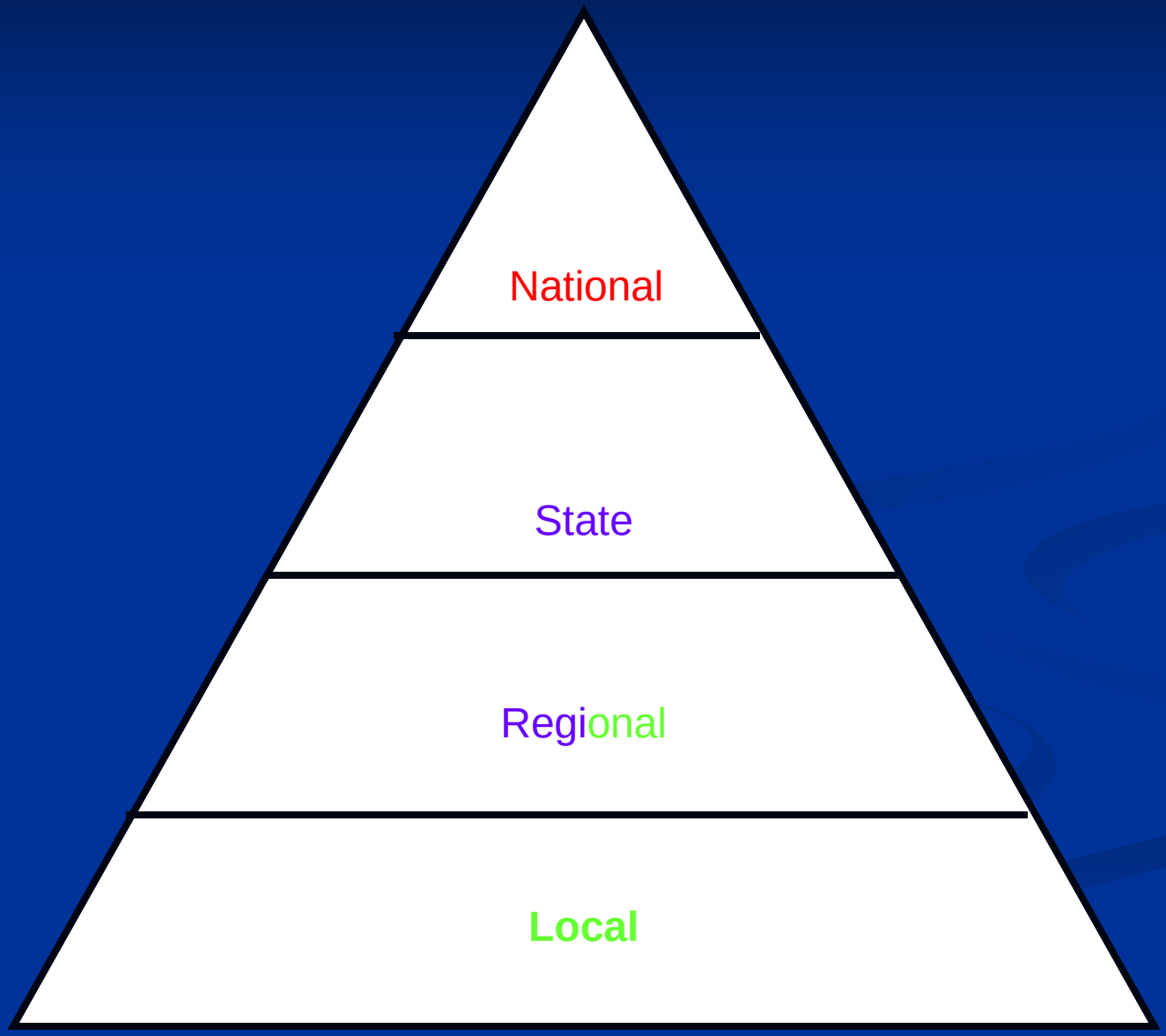
Influenza Surveillance

- The Influenza Surveillance System is a multi-component surveillance network with local, regional, state and national activities.
- Data collection is based on a reporting week that starts on Sunday and ends on Saturday of each week.
  - Designated as Week 32 or week ending 9/05
  - aka CDC MMWR week
- Reporting is voluntary except where noted

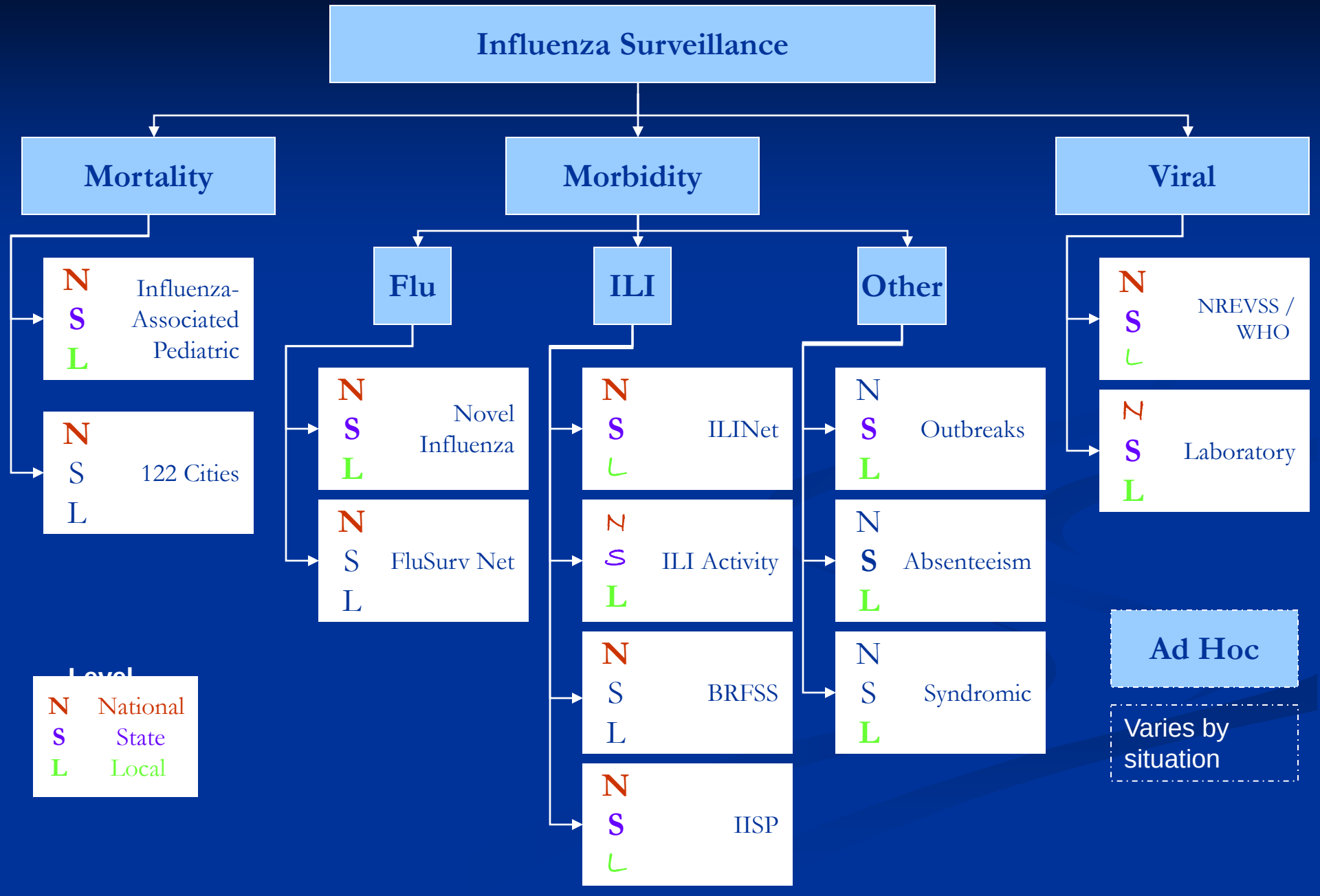
Goals of Influenza Surveillance

- Find out when and where influenza activity is occurring,
- Determine what type of influenza viruses are circulating,
- Detect changes in the influenza viruses,
- Track influenza-related illness and
- Measure the impact influenza is having on deaths in the United States.

Levels of Influenza Surveillance



Influenza Surveillance Components



Mortality

Mortality

N
S
L

Influenza
Associated
Pediatric

N

122 Cities

Influenza Pediatric Mortality

- **Activity**: Influenza-Associated Pediatric Mortality
- **Level:** National (2004); state, regional and local (2007)
- **Who:** As required by law in Texas
- **What:** Individual reports on influenza associated deaths in anyone <18 years old
- **How:** Individual report form faxed to health department within 1 work day

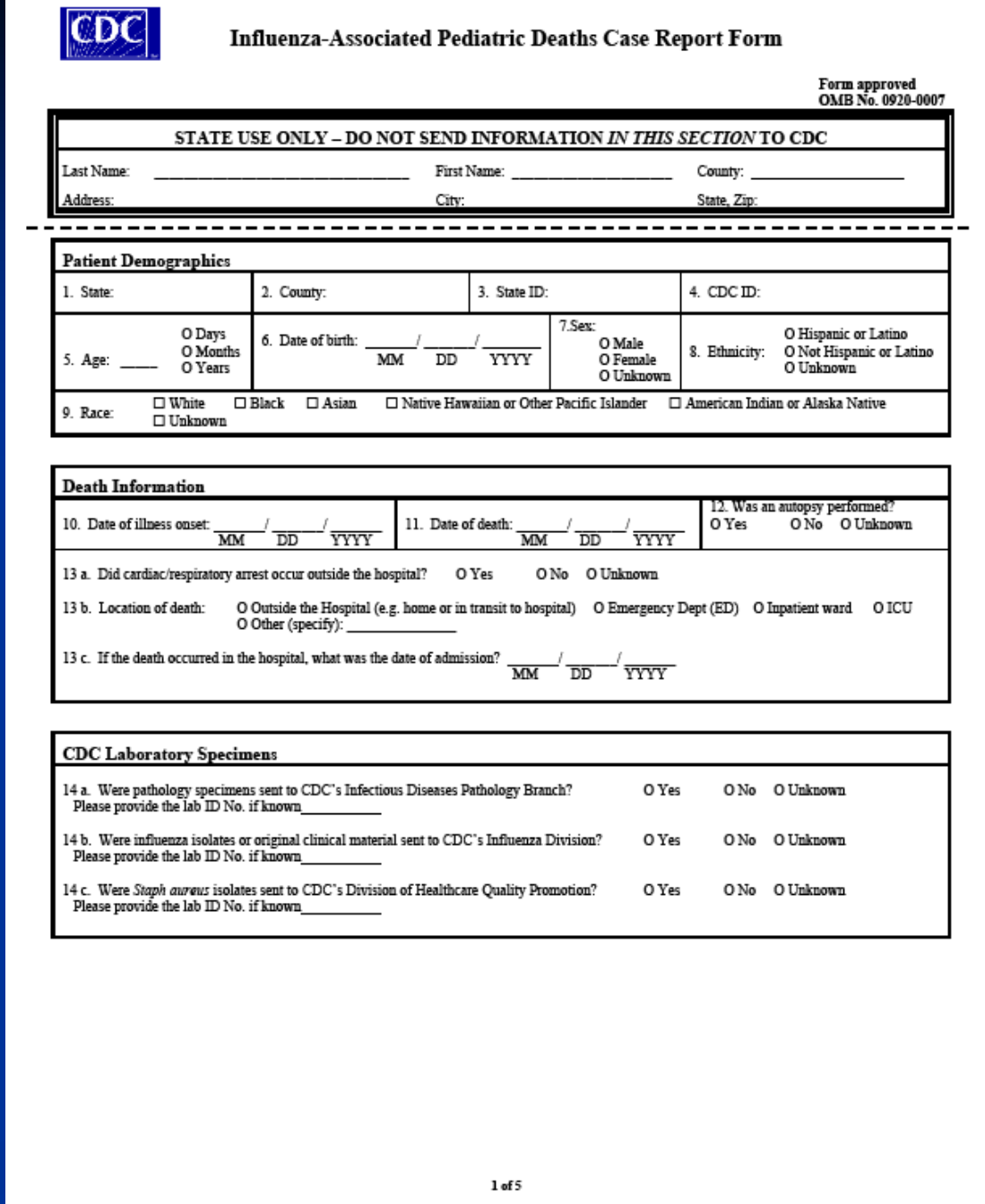
Year Round Reporting

Handbook section IVf

Influenza-Associated Pediatric Mortality

Report form available on the DSHS website at

http://www.dshs.state.tx.us/idcu/investigation/forms/PedFlu.pdf



CDC

Influenza-Associated Pediatric Deaths Case Report Form

Form approved
OMB No. 0920-0007

STATE USE ONLY – DO NOT SEND INFORMATION *IN THIS SECTION* TO CDC

Last Name: _____ First Name: _____ County: _____

Address: City: State, Zip:

Patient Demographics

1. State:	2. County:	3. State ID:	4. CDC ID:
5. Age: ____ O Days O Months O Years	6. Date of birth: ____/____/____ MM DD YYYY	7.Sex: O Male O Female O Unknown	8. Ethnicity: O Hispanic or Latino O Not Hispanic or Latino O Unknown

9. Race: ☐ White ☐ Black ☐ Asian ☐ Native Hawaiian or Other Pacific Islander ☐ American Indian or Alaska Native ☐ Unknown

Death Information

10. Date of illness onset: ____/____/____ MM DD YYYY	11. Date of death: ____/____/____ MM DD YYYY	12. Was an autopsy performed? O Yes O No O Unknown

13 a. Did cardiac/respiratory arrest occur outside the hospital? O Yes O No O Unknown

13 b. Location of death: O Outside the Hospital (e.g. home or in transit to hospital) O Emergency Dept (ED) O Inpatient ward O ICU O Other (specify): _____

13 c. If the death occurred in the hospital, what was the date of admission? ____/____/____ MM DD YYYY

CDC Laboratory Specimens

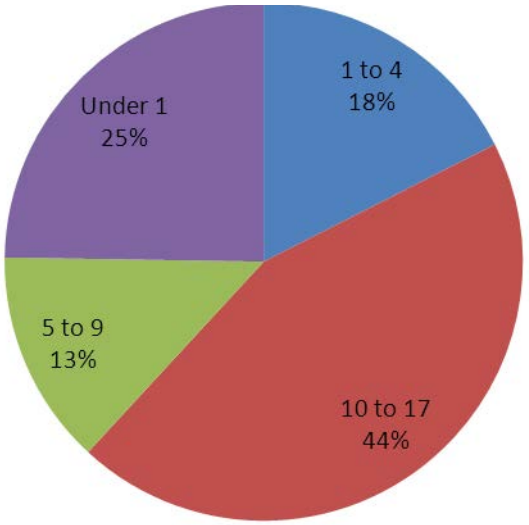
14 a. Were pathology specimens sent to CDC's Infectious Diseases Pathology Branch? O Yes O No O Unknown
Please provide the lab ID No. if known_____

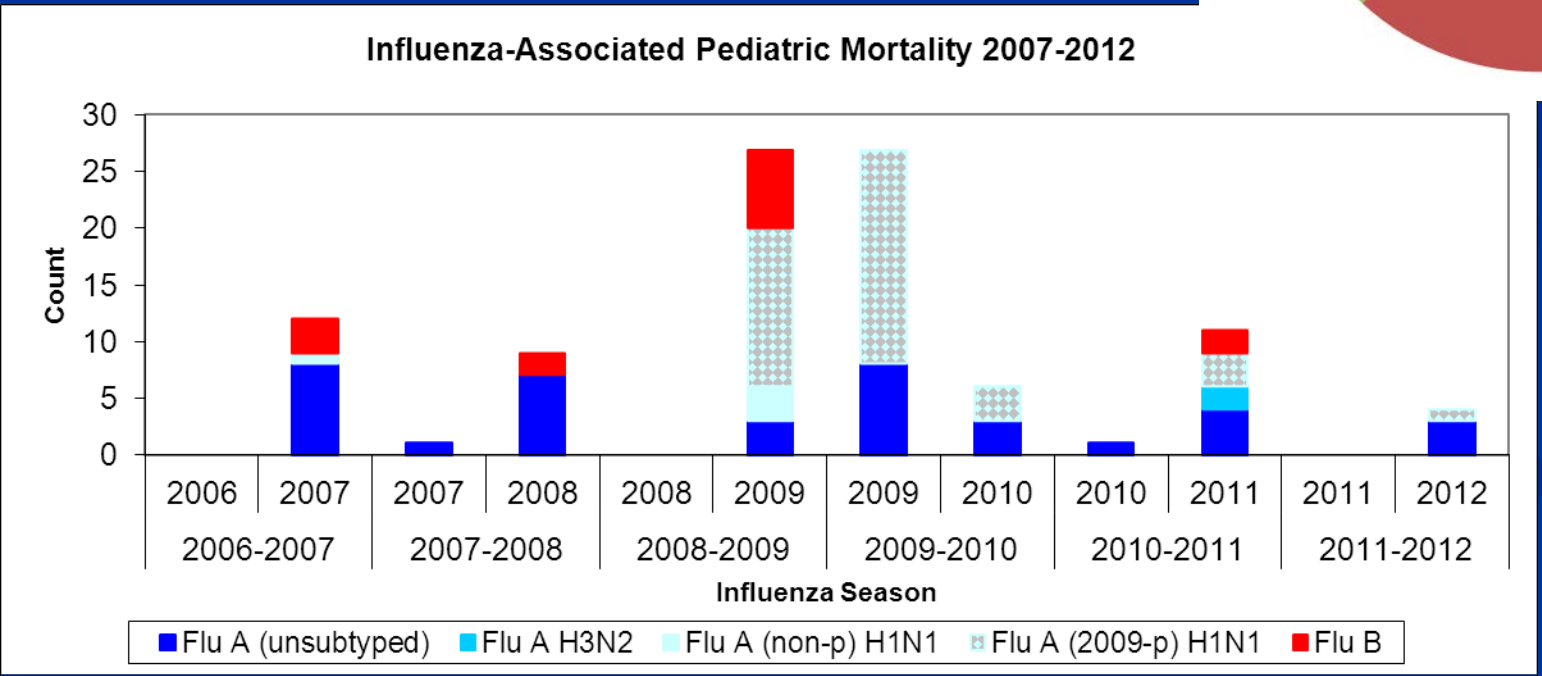
14 b. Were influenza isolates or original clinical material sent to CDC's Influenza Division? O Yes O No O Unknown
Please provide the lab ID No. if known_____

14 c. Were *Staph aureus* isolates sent to CDC's Division of Healthcare Quality Promotion? O Yes O No O Unknown
Please provide the lab ID No. if known_____

Pediatric Flu Data

- Expect 10 – 12 deaths a year
- Vaccine status:
  - 53% unvaccinated
  - 25% unknown
  - 11 % not eligible





122 Cities

- **Activity** : 122 Cities Mortality Reporting System
- **Level:** National
- **Who:** Vital Statistics offices in 122 US cities (7 cities in Texas)
- **What:** total number of death certificates received by age group and the number citing influenza and/or pneumonia
- **How:** Weekly to CDC

Year Round Reporting

Other Potential Mechanisms

- Vital Statistics reports directly to health departments / state
- Reports of all influenza associated deaths
- Reports of select influenza associated deaths (pregnancy / post partum)

Morbidity - Influenza

Morbidity

Flu

N
S
L — Novel Influenza

N
S
L — FluSurv Net

Novel (Variant) Influenza

- **Activity : E**xotic disease reporting
- **Level:** State, regional and local
- **Who:** As required by law in Texas; typically laboratories
- **What:** Individual reports of any outbreak, exotic disease, or unusual group expression (Includes novel strains of influenza)
- **How:** Call to local health department

Year Round Reporting

Handbook section IVg

Special Reporting

2009 H1N1

- **Activity :** Enhanced influenza surveillance
- **Level:** State, regional and local
- **Who:** Hospitals and/or healthcare providers
- **What:**
  - Aggregate Reporting of Confirmed Cases
    - Hospitalized by age group and county
  - Individual Reports of Confirmed Cases
    - ICU
    - Deaths
- **How:** Faxed or emailed weekly to health department

Discontinued at the end of May 2010

Special Reporting

Morbidity - ILI

Morbidity

ILI

N S L	ILINet
N *S* *L*	ILI Activity
N	BRFSS
N S L	IISP

ILINet

- **Activity :** US Outpatient Influenza-Like Illness Surveillance Network
- **Level:** National with a state level coordinator
- **Who:** ~ 2,500 providers were enrolled in this network during the 2007-08 influenza season nationwide; 130 were in Texas
- **What:** Aggregate count all patients seen and of ILI patients by age group
- **How:** Reported weekly through the CDC website

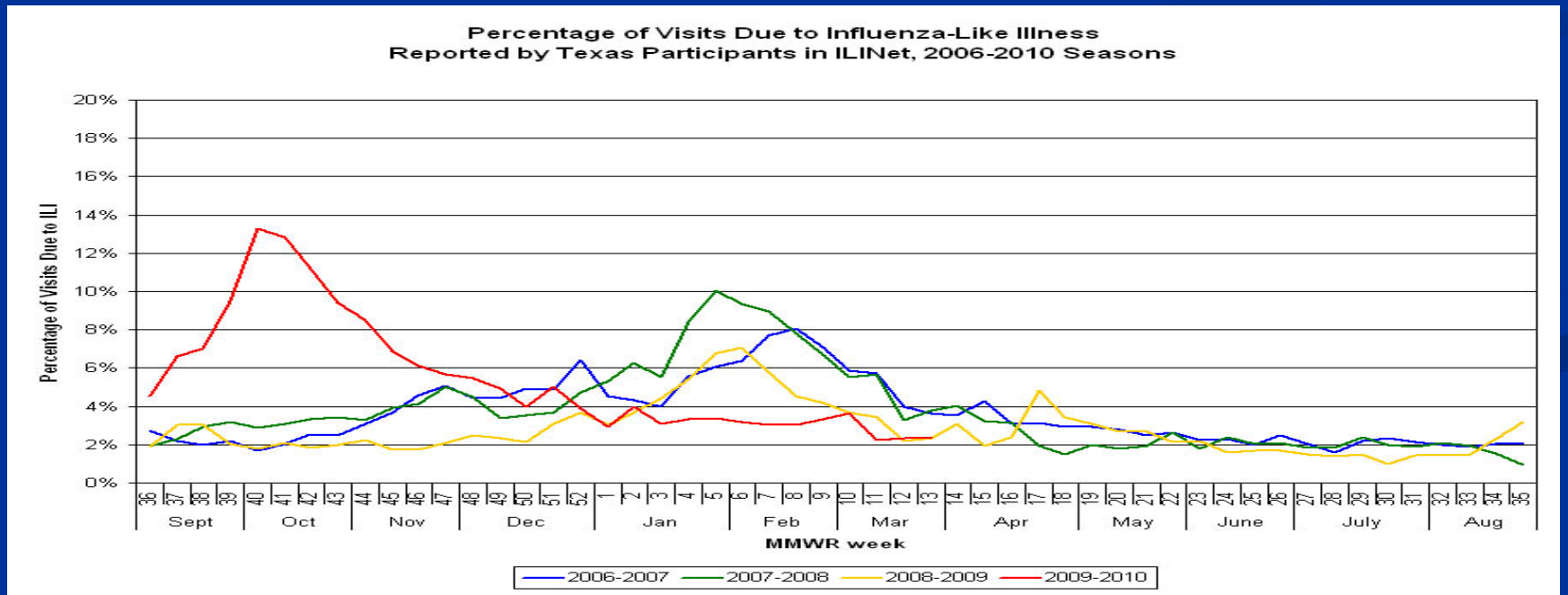
Year Round Reporting

Handbook section IVa

ILINet

Percentage of Visits for Influenza-like Illness reported by the US Outpatient Influenza-like Illness Surveillance Network (ILINet) in the Texas State (9/18/2009 11:11:36 AM)

Week	# of Reporters	Age 0-4	Age 5-24	Age 25-64	Age ≥64	Total ILI	Total Patients	% ILI
200930	54	25	41	23	11	100	9861	1.01
200931	57	55	91	83	9	238	17480	1.36
200932	53	54	108	76	9	247	17183	1.44
200933	50	46	107	124	13	290	18628	1.56



ILI Activity

- **Activity :** Health Department Seasonal Influenza Surveillance
- **Level:** Regional and local
- **Who:** private providers, clinics, hospitals and others
- **What:** Aggregate count of ILI and Flu (rapid tests: Flu A, Flu B and Undifferentiated Flu) by county
- **How:** Faxed or emailed weekly to health department

Seasonal Reporting

Handbook section IVc

Sample ILI Surveillance Forms

FACSIMILE TRANSMITTAL SHEET

To: Sandi Henley RN, CIC	FAX NUMBER: 254-899-0405
COMPANY: Texas Department of State Health Services	TOTAL NO. OF PAGES INCLUDING COVER: 1
PHONE NUMBER: 254-778-6744	INFLUENZA REPORTING

2009-2010
CLNIC WEEKLY ILI/FLU REPORT
Submit by 3:00 each Monday for the week prior (Sunday – Saturday)

ENTER TOTAL NUMBER OF PATIENTS SEEN FOR THE WEEK →

Name (Clinic**):**_____

Name of Reporter: _____

Phone Number:_____**Email of Reporter:** _____

Week Ending :_____

Definitions:

- Flu case confirmed by rapid test, culture, antigen detection, or PCR (Flu A, Flu B, Not Differentiated Flu). **and/or**,
- Influenza-like illness activity (ILI): ILI is defined as fever over 100°F and cough and/or sore throat in the *absence of another diagnosis*.

Please complete the table listing the number of flu and ILI cases seen in your facility

County *(Residence of patient)*	# of patients seen w/positive Flu A test	# of patients seen w/ positive Flu B test	# of patients seen w/positive flu test that is ND*	# of patients seen with ILI (not tested)

*ND = Not Differentiated Flu

Please email report to HSR7.Epi@dshs.state.tx.us . The report may also be faxed to 254-899-0405.
You may call 254-778-6744 with questions or comments. Thank you!

Due each Monday by 3 PM!

FACSIMILE TRANSMITTAL SHEET

To: Sandi Henley RN, CIC	FAX NUMBER: 254-899-0405
COMPANY: Texas Department of State Health Services	TOTAL NO. OF PAGES INCLUDING COVER: 1
PHONE NUMBER: 254-778-6744	INFLUENZA REPORTING

2009-2010
SCHOOL WEEKLY FLU REPORT

Name (School**):**._____

Name of Reporter: _____

Phone Number:_____**Email of Reporter:** _____

WEEK ENDING:_____

Flu activity is defined as:

- Lab confirmed case: Flu case confirmed by rapid test, culture, antigen detection, or PCR (Flu A, Flu B, Not Differentiated Flu). **and/or**,
- Influenza-like illness activity (ILI): ILI is defined as fever (temperature of ≥100°F [37.8°C]) and a cough and/or a sore throat in the *absence of another known diagnosis*.

Please complete the table listing the number of flu absences seen in your school/s. *Only count a student's' absence one time (i.e. if you put in the section "Absences due to parental report of influenza" don't put in "absences due to ILI")*

County *(Residence of Students)*	*Absences due to ILI*	*Absences due to parental report of influenza*

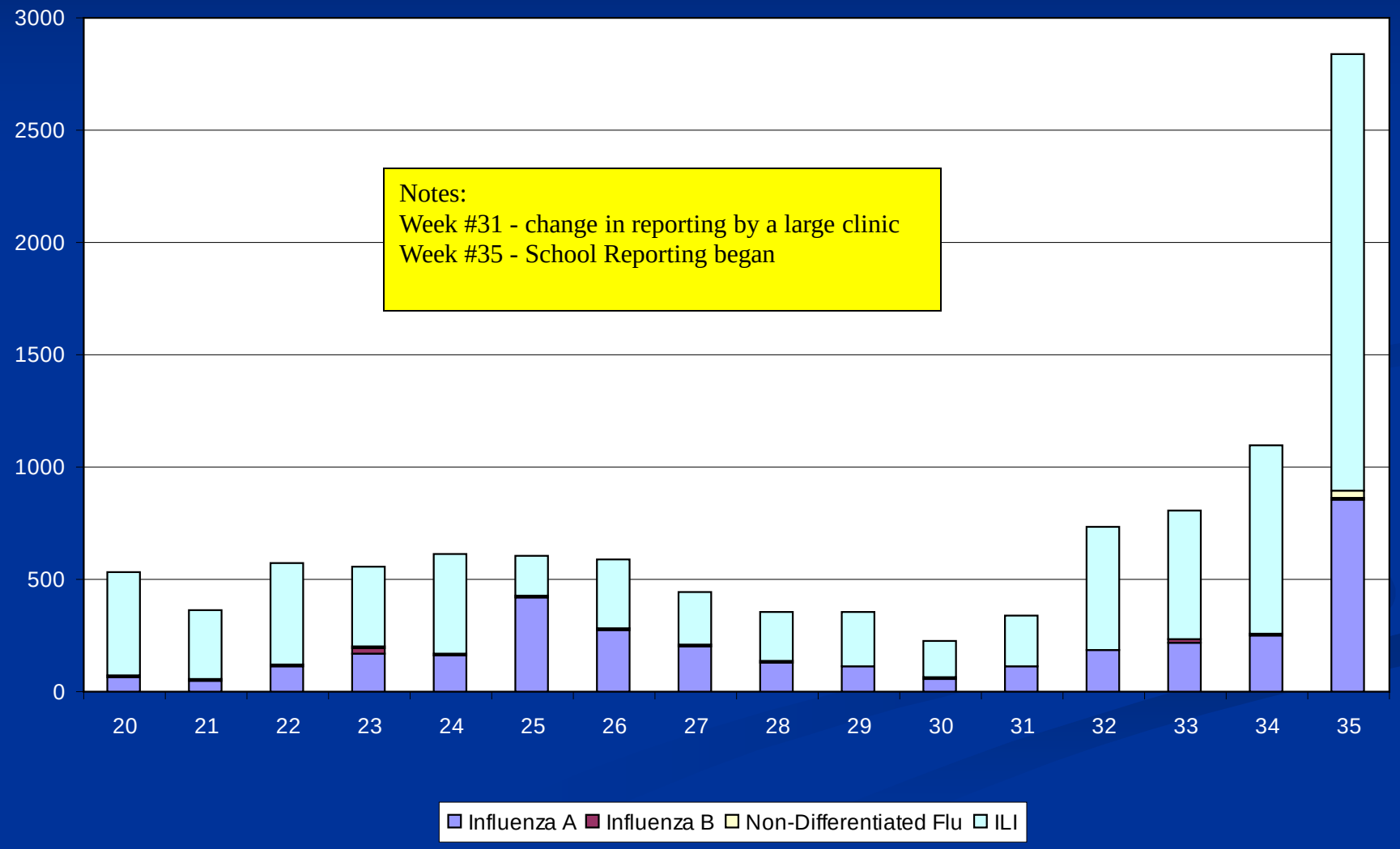
If you have had a school closure please complete table below:

School Closures	Date Closed	#f Absences due to ILI necessitating closure	Total number of students	Date Re-Opened

Please email report to: hsr7.epi@dshs.state.tx.us by 3 p.m. on Mondays. If Monday is a holiday, send ASAP. The report may also be faxed to 254-899-0405 to Sandi's attention. You may call 254-778-6744 with questions or comments. If sending additional information for a previously submitted report, please highlight the changes being made. Thank you!

ILI Surveillance

Surveillance of Influenza Activity
Texas Department of State Health Service Region 7



BRFSS

- **Activity :** Behavioral Risk Factor Surveillance System
- **Level:** National
- **Who:** General public
- **What:** Recent ILI
- **How:** ILI assessment questions added to the BRFSS survey. Survey conducted through random digit dialing.

Special Reporting

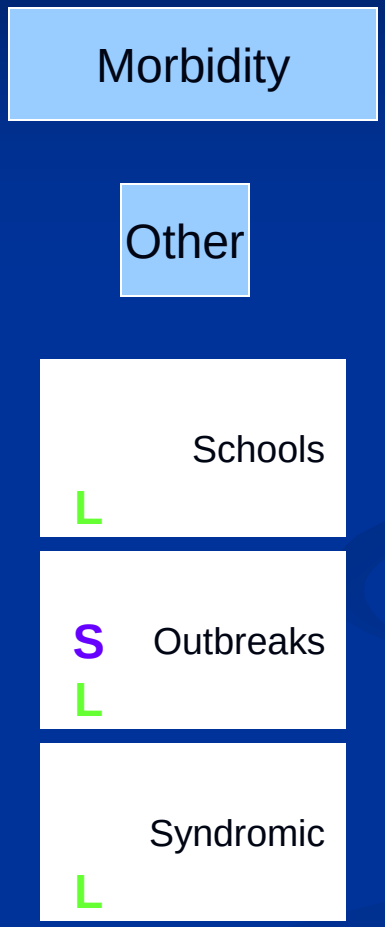
IISP

- **Activity :** Influenza Incidence Surveillance Project
- **Level:** National with a state level coordinator
- **Who:** 12 awardees in the US including Texas; 5-6 providers in Texas
- **What:** Aggregate count by age group of all patients seen and of patients with ILI; specimens submitted on first 10 patients seen each week
- **How:** Reported weekly via fax or email to DSHS

Year Round Reporting

Handbook section IVb

Morbidity - Other



School Surveillance

- **Activity :** Varies
- **Level:** Regional and local
- **Who:** School nurses and/or attendance clerks
- **What:** number of students sent home with ILI and/or who called in sick with ILI or in general
- **How:** Faxed or emailed weekly to health department; some electronic systems are available

Seasonal Reporting

Handbook section IVi

Outbreaks

- **Activity :** Outbreak reporting
- **Level:** Local, regional, state
- **Who:** As required by law
- **What:** Report of suspected outbreak or cluster of illness
- **How:** Call to health department ; Surveillance data analysis

Year Round Reporting

Handbook section VII

Syndromic Surveillance

- **Activity :** Syndromic programs: ESSENCE, RODS, BioSense etc
- **Level:** Regional and local
- **Who:** Hospitals with emergency rooms
- **What:** emergency room visits categorized by syndrome, age, zip code, date (de-identified)
- **How:** Electronic data automatically sent from hospital to syndromic servers. Frequency of reports may occur hourly, daily or weekly.

Year Round Reporting

Handbook section IVi

Data current as of: 10/30/2007 01:50 PM EDT

Refresh Data

Custom Settings

Select Data

Select Options

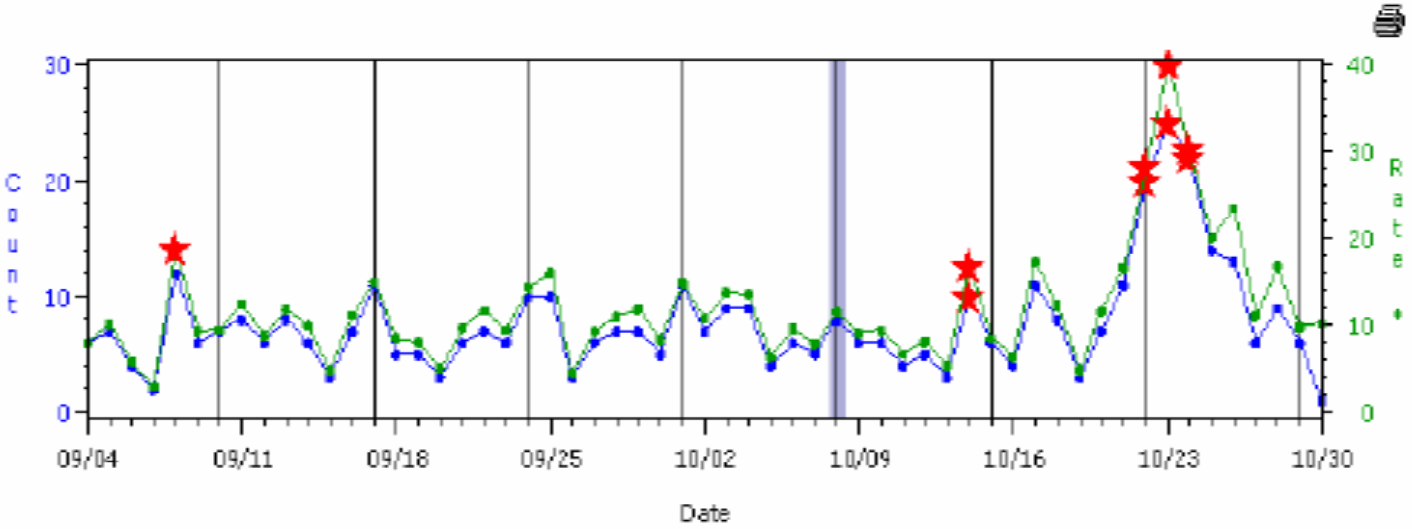
Time Series

Asthma Sub-Syndrome, Emergency, Chief Complaint Data.

Hospital Data, All Facilities, **from 09/04/2007 to 10/30/2007.**

Analysis: **W2, 100** Days Recurrence Interval Threshold.

Number of Visits = **432**



*** Rate per 1000 visits**

Date	Day	Count	Rate per 1,000 Visits	All Visits	Links	Comments
10/30	Tues	1	10.2	98	map / patient list	
10/29	Mon	6	9.9	609	map / patient list	
10/28	Sun	9	16.9	533	map / patient list	
10/27	Sat	6	11.1	540	map / patient list	
10/26	Fri	13	23.5	553	map / patient list	
10/25	Thur	14	20.1	698	map / patient list	
10/24	Wed	22	30.3	726	map / patient list	
10/23	Tues	25	40.0	625	map / patient list	

Other Possible Morbidity Mechanisms

- Absenteeism / ILI surveillance with large businesses
- Absenteeism / ILI surveillance with first responders
- Pharmacy based surveillance
- Nurse call center surveillance
- Poison Control cough/cold medication overdose calls

Viral Surveillance

Viral

N **S** *L*	NREVSS / WHO
N **S** **L**	Laboratory

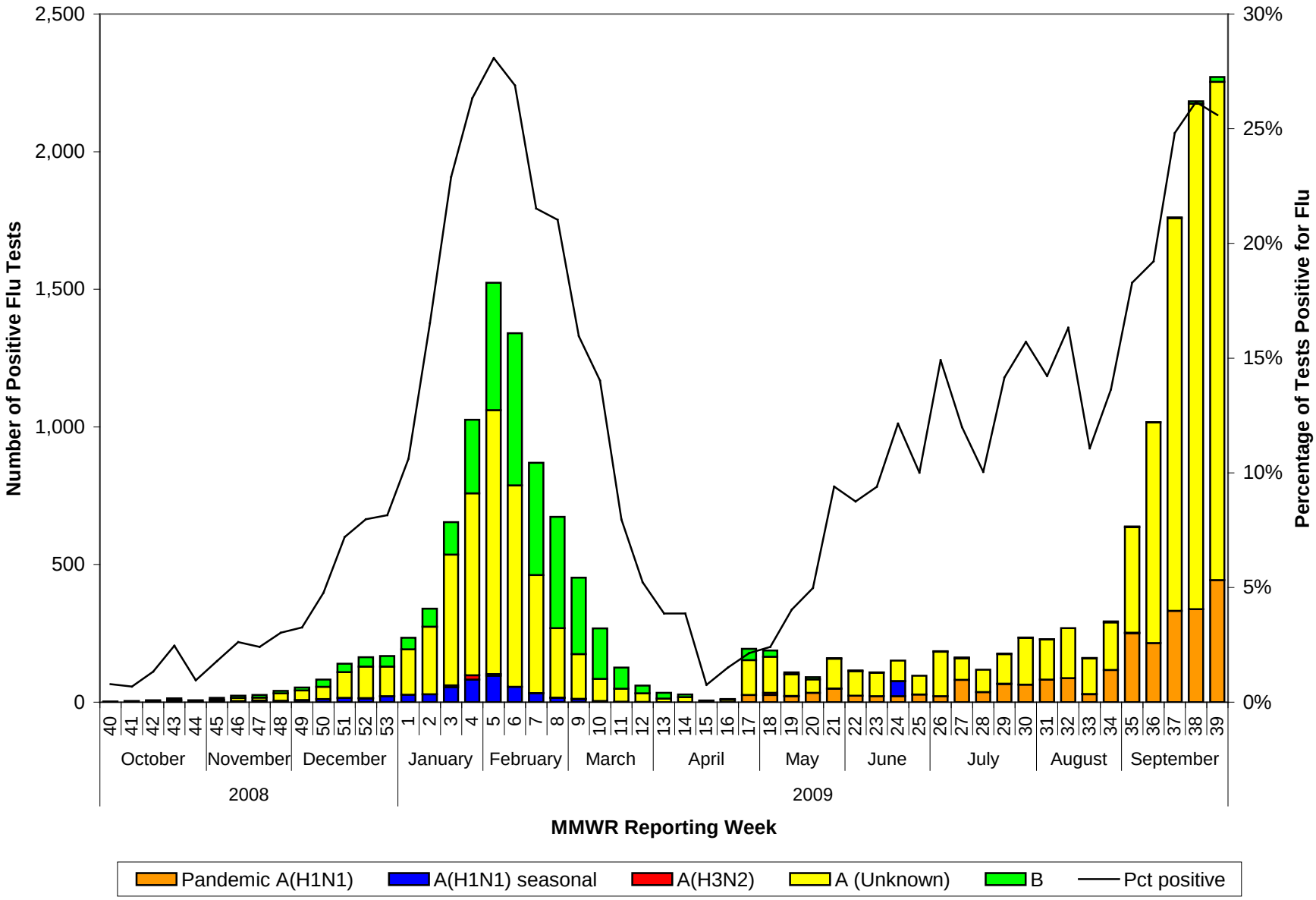
NREVSS / WHO

- **Activity :** National Respiratory and Enteric Virus Surveillance System and WHO Collaborating Labs
- **Level:** National coordination
- **Who:** Volunteer public health and hospital laboratories
- **What:** Total number of respiratory specimens tested and number of positives
- **How:** Reported weekly to CDC
- **Note:** Tracks multiple respiratory pathogens. Not all labs report all pathogens.

Year Round Reporting

Handbook section IVe

Texas NREVSS Data 2008-2009 Season



Laboratory Surveillance

- **Activity :** Influenza Laboratory Surveillance (PCR)
- **Level:** State, regional, and local coordination
- **Who:** Selected providers
  - Identified by health departments
  - May include ILINet providers
- **What:** Specimens from patients suspected of having influenza
- **How:** Specimens sent to the DSHS lab or LRNs
- **Note:** Subset of submitted specimens sent every two weeks to CDC for further testing

Year Round Reporting

Handbook sections IVd and VI

Reporting

- Email for DSHS flu team
  - flutexas@dshs.state.tx.us
- Flu reports
  - DSHS flu reports and information:
    - www.TexasFlu.org
    - http://www.dshs.state.tx.us/idcu/disease/influenza/
  - CDC FluView: www.cdc.gov/flu/weekly/