Louisiana Department of Health and Hospitals
Office of Public Health

Influenza Surveillance Report

www.infectiousdisease.dhh.louisiana.gov

Week 45 From 11/8/2009 To 11/14/2009

The Influenza Surveillance Summary Report describes the results of the tracking done by the Louisiana Office of Public Health Infectious Disease Epidemiology Section (IDEpi). This report relies on data supplied by sentinel surveillance sites, including hospital emergency department (ED), laboratories and physicians' offices. Sentinel sites provide weekly data on Influenza Like Illness (ILI) and/or laboratory confirmed cases.

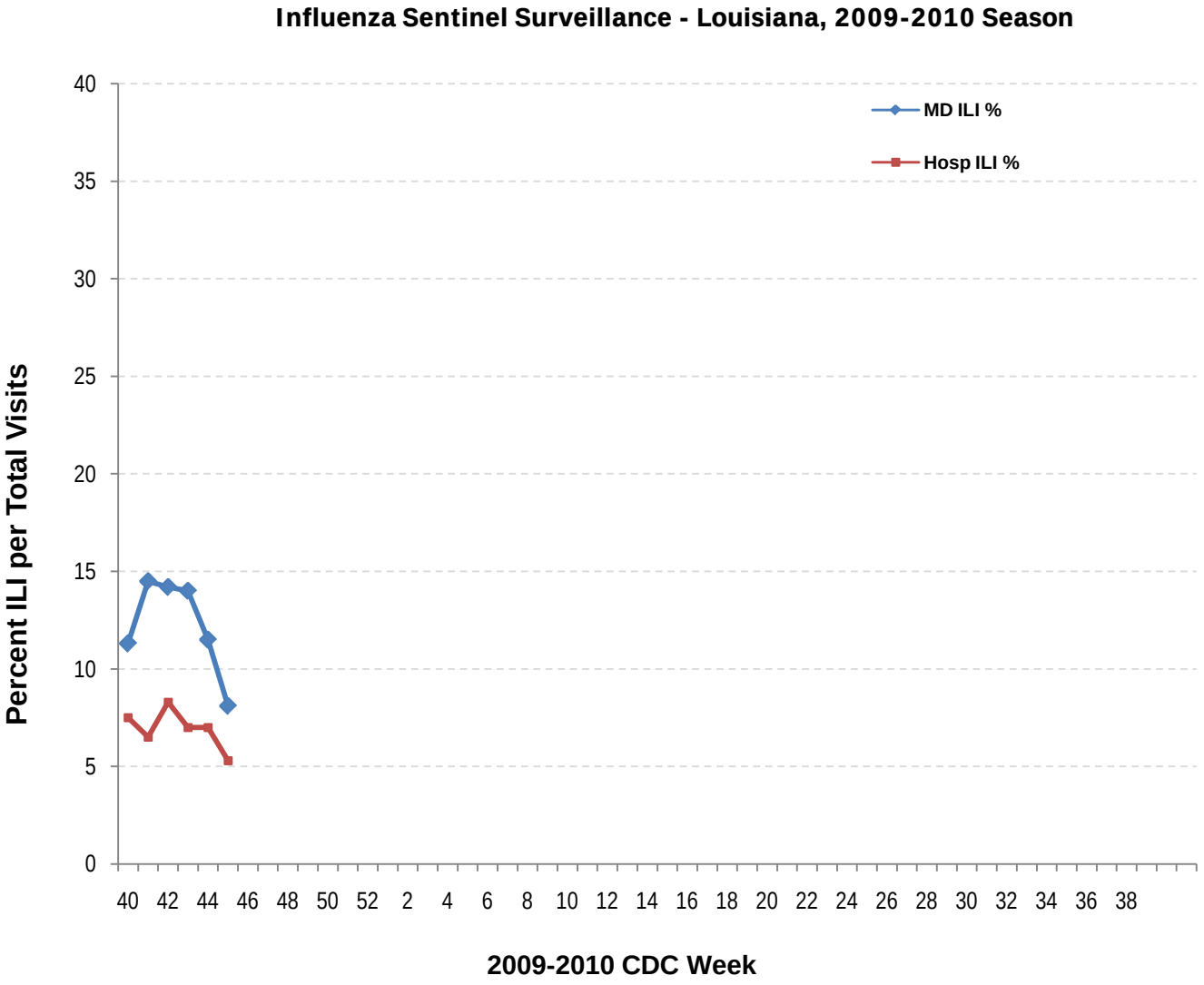
Taken together, ILI surveillance and laboratory surveillance provide a clear picture of the influenza activity occurring in Louisiana each week. If you have any questions about our surveillance system or would like more information, please contact Julie Hand at 504-219-4563 or julie.hand@la.gov.

ILI is defined as an illness characterized by cough and/or cold symptoms and a fever of 100˚ F or greater in the absence of a known cause. While not every case of ILI is a case of influenza, the CDC has found that trends in ILI from sentinel sites are a good proxy measure of the amount of influenza activity in an area. For this reason, all states and territories participating in the national surveillance program monitor weekly ILI ratios from their sentinel surveillance sites.

Laboratory testing: Not all sentinel sites have access to laboratory testing. However, many hospitals and physicians' offices do perform some influenza testing. Sites that test for influenza report the number of positive tests each week and the total number of tests performed each week. This information is included on page 5 of this report.

There are 1,840 lab confirmed cases of 2009 Influenza A (H1N1) in Louisiana. Based on an extrapolation from CDC data, the real case count in Louisiana is closer to 188,000. The state public health laboratory continues to test only hospitalized cases and specimens from sentinel outpatient physician's offices. Week 0940 marked the beginning of the 2009-2010 Influenza Season.

Influenza Sentinel Surveillance

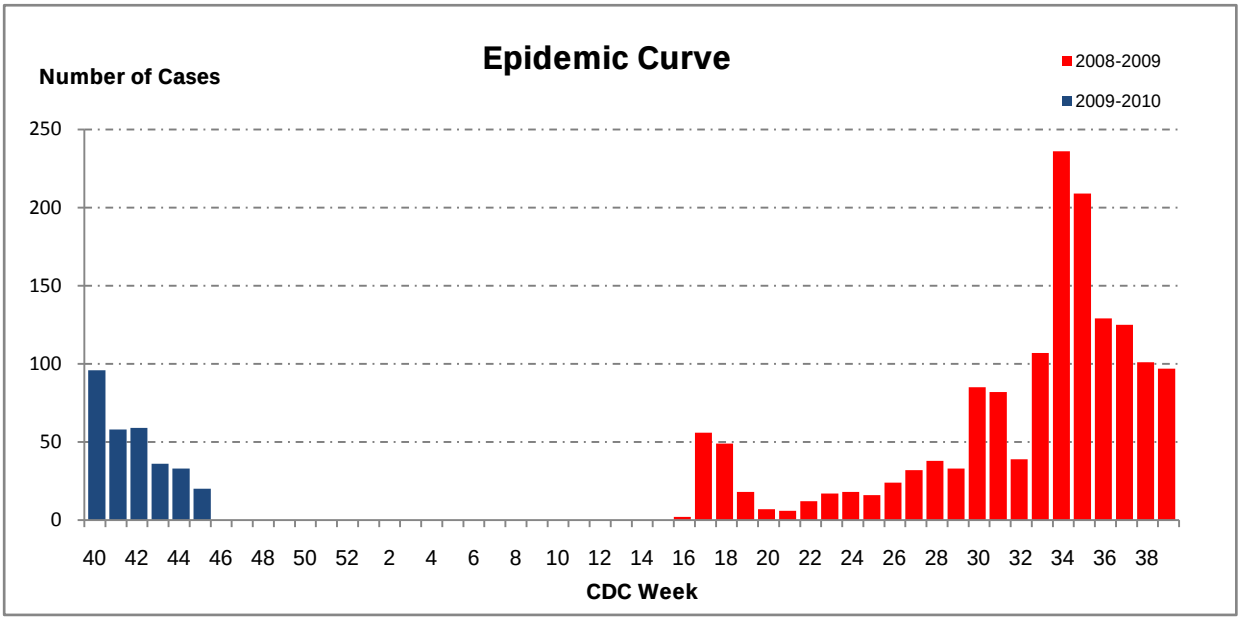


This graph shows the percentage of visits for ILI over the total number of visits for sentinel physicians' offices and emergency departments. This is the best approach to estimate the magnitude of influenza transmission. ILI counts do include some viral infections other than influenza, but experience over the past 50 years has shown that this approach is a reliable method to estimate influenza transmission. It does not show which strain of influenza virus is responsible. The page on lab surveillance does show the proportion of specimens attributable to each virus strain.

2009 Influenza A (H1N1)

This graph displays the sampling basis for the description of the H1N1 cases. It does not accurately depict the epidemic since only a small fraction of cases are tested for H1N1. The most accurate description of the epidemic is a combination of the ILI surveillance (ILI page) and the proportion of novel H1N1 over all influenza strains tested (Lab page).

The total number of cases of H1N1 reported is **1,840**



Age and Gender distribution

	Gender distribution		Age distribution					
	% M	% F	0_4	5_24	25_49	50_64	65+	
Population	48%	52%	7%	30%	34%	17%	12%	100%
2009 H1N1 OutPt	45%	55%	13%	70%	12%	4%	1%	100%
2009 H1N1 Hosp	47%	53%	17%	39%	25%	15%	4%	100%

The distribution by gender is similar to the population distribution by gender.
The distribution by age group shows the highest proportion of cases in the 5-24 age group.

Clinical data

Fever	9.6%	Fever = Patients with fever only and no other symptoms
Influenza Like	76.0%	ILI = Fever + Cough /Sorethroat /Upper respiratory infection
Gastro-Intestinal	17.5%	Gastro-intestinal = Nausea, or vomiting, or diarrhea
Pneumonia /ARDS	13.1%	Pneumonia or ARDS = Acute Respiratory Distress Syndrome

*Cases may be counted in more than 1 category

Hospitalization

H1N1	LA	USA*
Number	474	98,000
rate/100K /year	18.9	58.6

Death

H1N1	LA	USA*
Number	37	3,900
per 100 Hosp	7.8	4.0

39 Deaths total
*CDC has developed a method to provide an estimate of the number of hospitalizations and deaths based on data collected through the Emerging Infections Program (EIP). These numbers will be updated every three to four weeks.

Risk Factors	OP	Hosp
Aspirin LT	0.0%	0.0%
Asthma	5.3%	6.1%
Cancer	0.6%	1.2%
Chr Cardiac	0.7%	1.9%
Chr Endocrino	0.2%	0.1%
Chr Liver	0.0%	0.0%
Chr Metabolic	0.0%	0.1%
Chr Neuro	0.6%	1.0%
Chr Pulmonary	0.5%	4.2%
Chr Renal	0.3%	1.4%
Congenital	0.5%	1.2%
Diabetes	0.1%	2.3%
HIV	0.2%	0.4%
Obesity	0.9%	3.4%
Pregnant	0.4%	4.5%
Sickle Cell	0.1%	0.9%
Steroid	0.0%	0.6%
Transplant	0.2%	0.9%
Total	10.3%	30.3%

Spatial Distribution of Influenza

Region	Parish	H1N1*	% ILI**		% Absent†
Region 1	Jefferson	190	0.9		12.3
	Orleans	118	4.8		7.4
	Plaquemines	27			
	St Bernard	17	5.1		5.3
	All Region 1	**352**	**3.1**		**8.3**
Region 2	Ascension	11			5.5
	East Baton Rouge	150	13.5		4.6
	East Feliciana	1	1.8		3.8
	Iberville	7			5.5
	Pointe Coupee	5			7.1
	West Baton Rouge	7			5.1
	West Feliciana	2			4.8
	All Region 2	**183**	**11.1**		**5.1**
Region 3	Assumption	1			6.3
	Lafourche	66	2.7		6.3
	St Charles	31			7.7
	St James	6			5.3
	St. John	13			7.0
	St. Mary	23	7.0		5.8
	Terrebonne	23	6.5		5.8
	All Region 3	**163**	**4.6**		**6.3**
Region 4	Acadia	15			6.2
	Evangeline	12			5.3
	Iberia	39	27.7		4.5
	Lafayette	142	3.7		5.9
	St Landry	28			4.9
	St Martin	17			4.6
	Vermilion	18			4.6
	All Region 4	**271**	**12.8**		**5.1**
Region 5	Allen	2	3.4		6.1
	Beauregard	8			5.7
	Calcasieu	77	10.3		5.0
	Cameron	0			6.0
	Jefferson Davis	4	8.2		4.9
	All Region 5	**91**	**8.7**		**5.6**
Region 6	Avoyelles	4			6.8
	Catahoula	6	5.6		6.4
	Concordia	1	2.6		5.5
	Grant	6			5.1
	LaSalle	10	14.9		6.2
	Rapides	119	29.8		5.8
	Vernon	37	14.2		5.4
	Winn	0	16.8		5.7
	All Region 6	**183**	**21.0**		**5.8**
Region 7	Bienville	7			5.6
	Bossier	80			5.2
	Caddo	179	19.4		5.2
	Claiborne	1			4.5
	DeSoto	20			7.1
	Natchitoches	8	13.4		5.3
	Red River	2			6.2
	Sabine	50			5.3
	Webster	9			5.2
	All Region 7	**356**	**18.4**		**5.5**

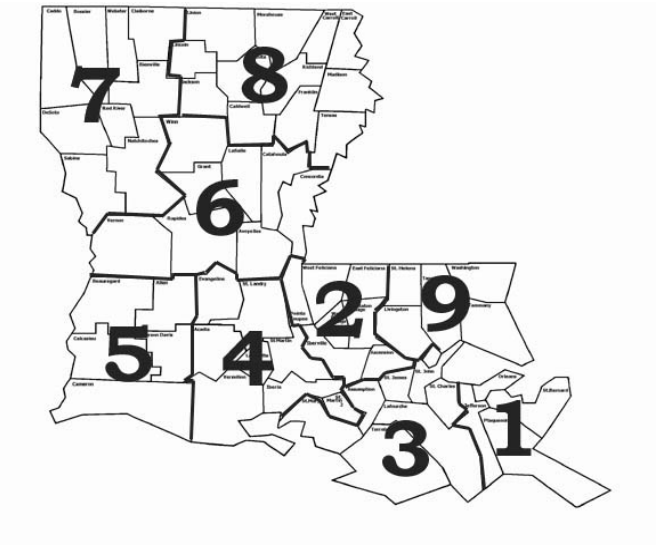
Region	Parish	H1N1	% ILI		% Absent†
Region 8	Caldwell	7			5.2
	East Carroll	1			4.1
	Franklin	0			6.7
	Jackson	1			5.3
	Lincoln	4			3.9
	Madison	1			5.9
	Morehouse	10	3.9		5.3
	Ouachita	58	15.3		5.1
	Richland	10			5.4
	Tensas	0			4.1
	Union	7	0.9		6.4
	West Carroll	4			6.3
	All Region 8	**103**	**10.2**		**5.3**
Region 9	Livingston	16	19.0		5.2
	St. Helena	0	0.4		4.3
	St Tammany	59	3.9		5.2
	Tangipahoa	27	15.6		6.1
	Washington	36	3.9		5.4
	All Region 9	**138**	**8.2**		**5.3**
To be determined		0			
Grand Total		**1840**			

Low <2%	
MedLow 2-5%	
MedHigh 5-10%	
Very High >10%	

* Cumulative number from week 16 to present

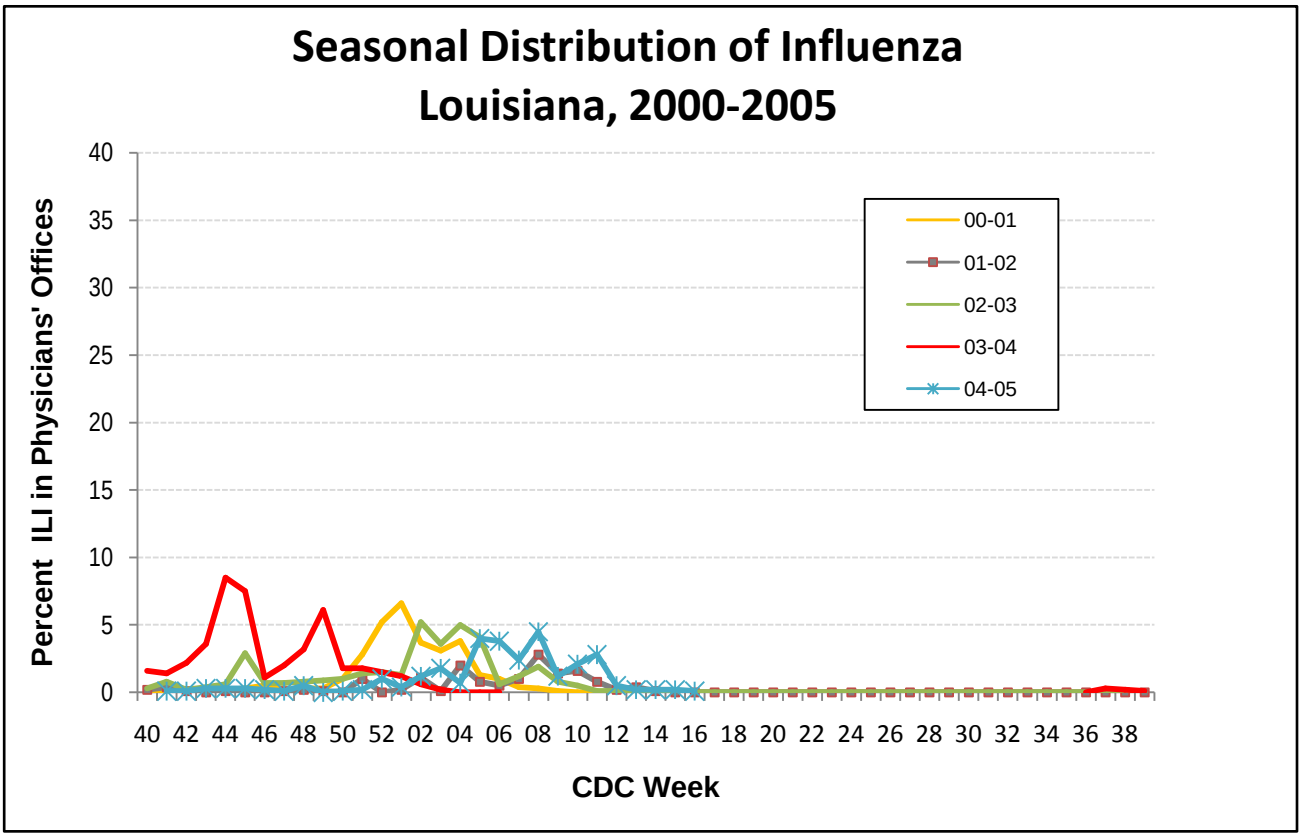
** Last 4 week average % ILI based on sentinel surveillance data

† % School absenteeism for the current reporting week

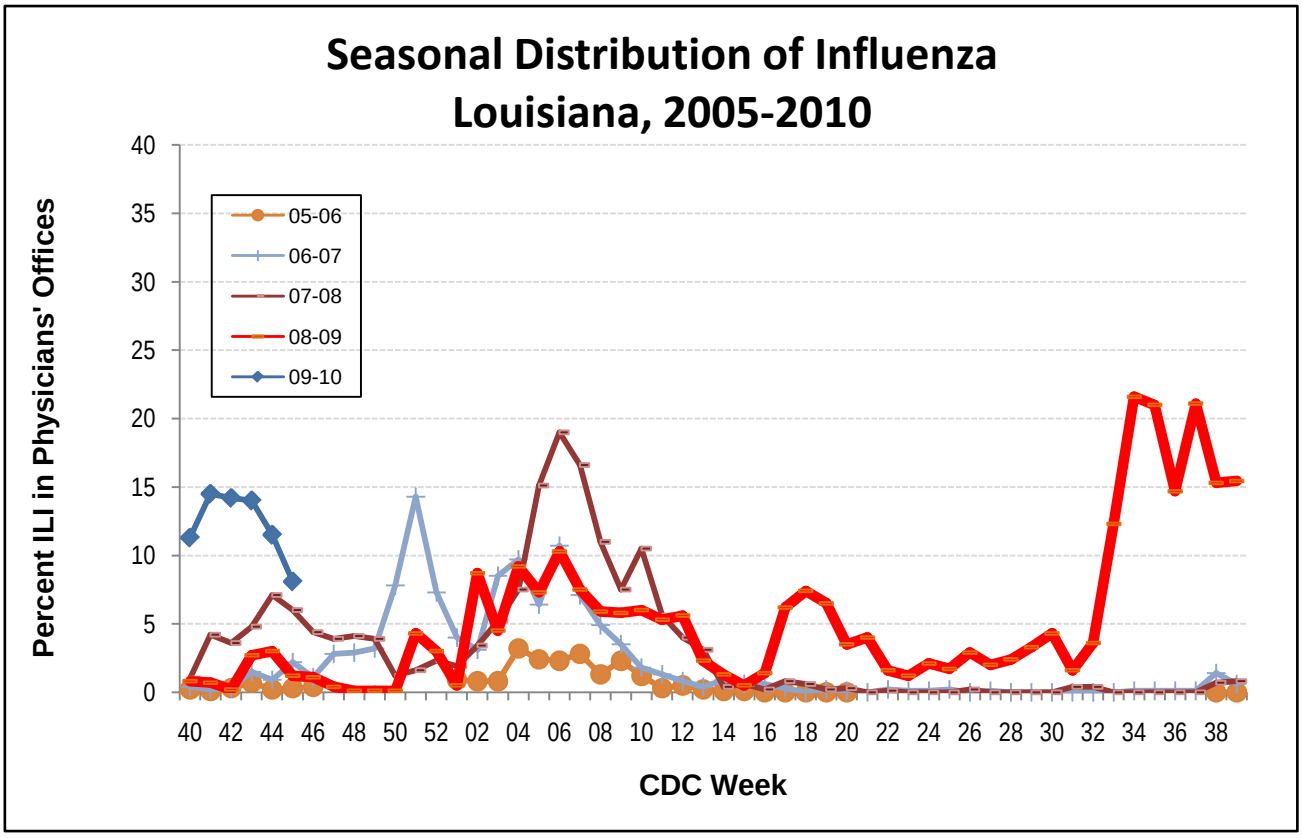


This chart displays the intensity of influenza activity throughout the state. There are differences between regions. Although not representative of the exact occurrence of H1N1 throughout the state, it appears that H1N1 is spread in all areas of the state and both in urban and rural areas.

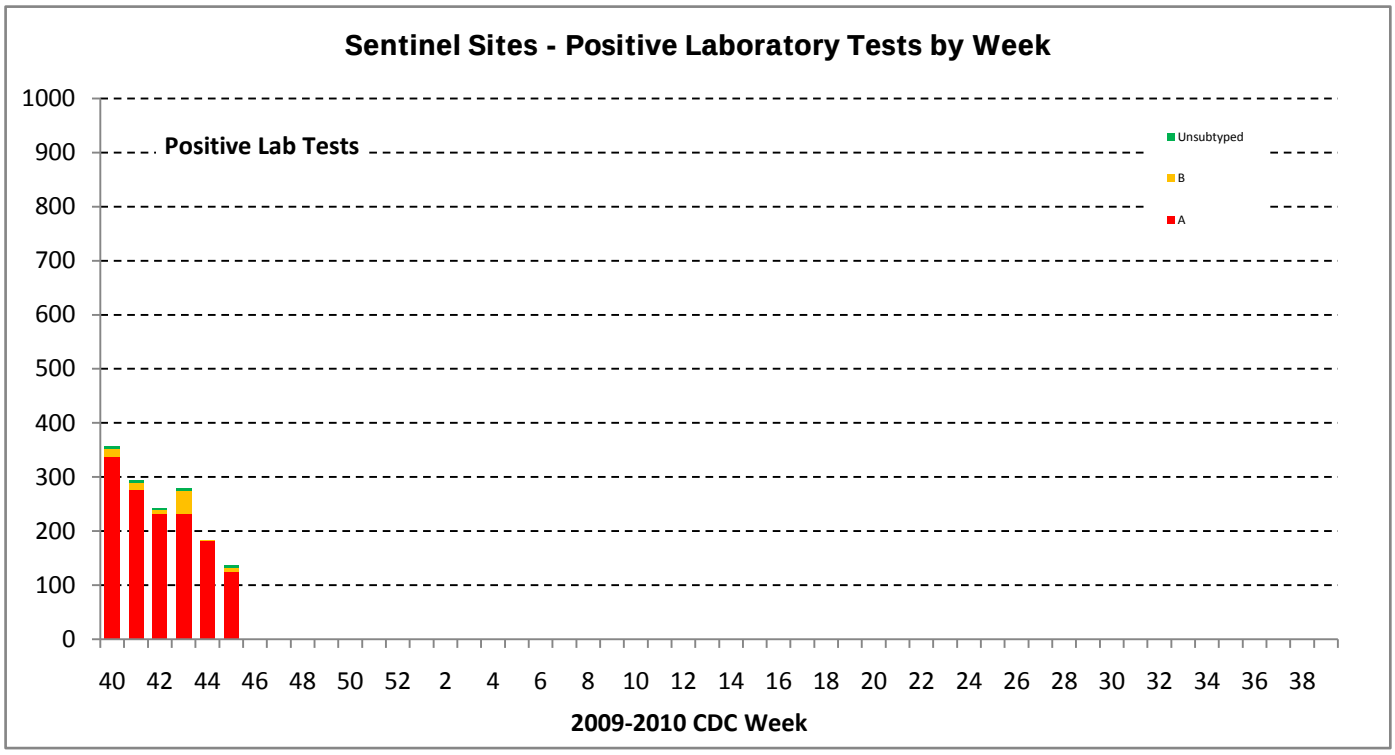
Historical Data on Influenza in Louisiana



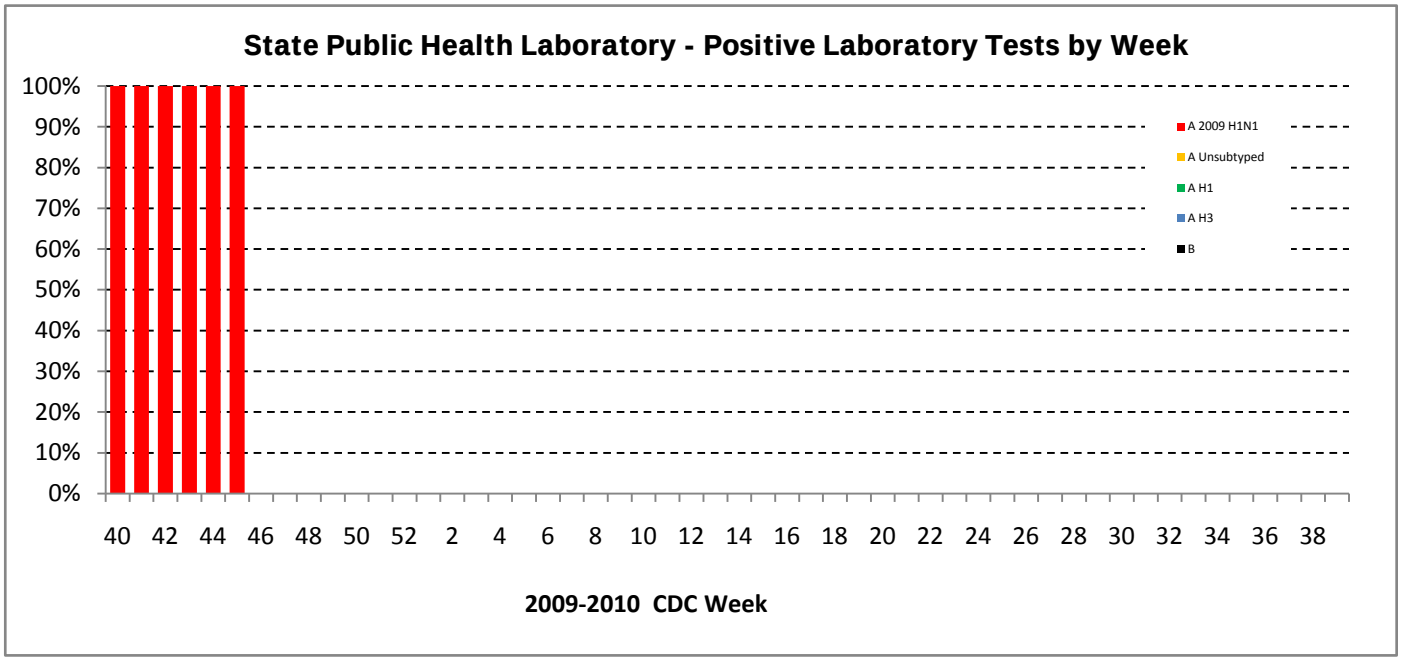
The purpose of this page is to show the data on ILI surveillance among sentinel physicians' over the past 10 years to enable comparisons with previous years and better estimate the amplitude of this season's influenza transmission.



Laboratory Surveillance



These graphs show the distribution by virus type. Early in the season types were seldom determined, then followed a mixture of influenza A and B. Starting at week 17, Influenza A (novel H1N1) started to appear and has progressed regularly. **Influenza A and 2009 Influenza A (H1N1) may overlap.**



Louisiana novel H1N1 specimens from week 17, 26 and 27 were tested at CDC and found to be resistant to Adamantanes and Sensitive to Oseltamivir and Zanamivir.

National Data Summary

During week 0945 influenza activity slightly decreased in the United States. Over 99% of all subtyped influenza A viruses being reported to CDC this week were 2009 influenza A (H1N1) viruses.

Proportion of deaths attributed to pneumonia and influenza (P&I) was above the epidemic threshold for the seventh consecutive week.

Twenty-one influenza-associated pediatric deaths were reported. Fifteen of these deaths were associated with 2009 influenza A (H1N1) virus infection, and six were associated with an influenza A virus, for which subtype is undetermined.

Proportion of outpatient visits for influenza-like illness (ILI) was 5.5% which is above the national baseline of 2.3%. All 10 regions reported ILI above region-specific baseline levels.

Lab Data:

10,803	Specimens tested
3,106 (28.8%)	Influenza positive
3,103 (99.9%)	Influenza A
19 (0.5%)	Influenza B

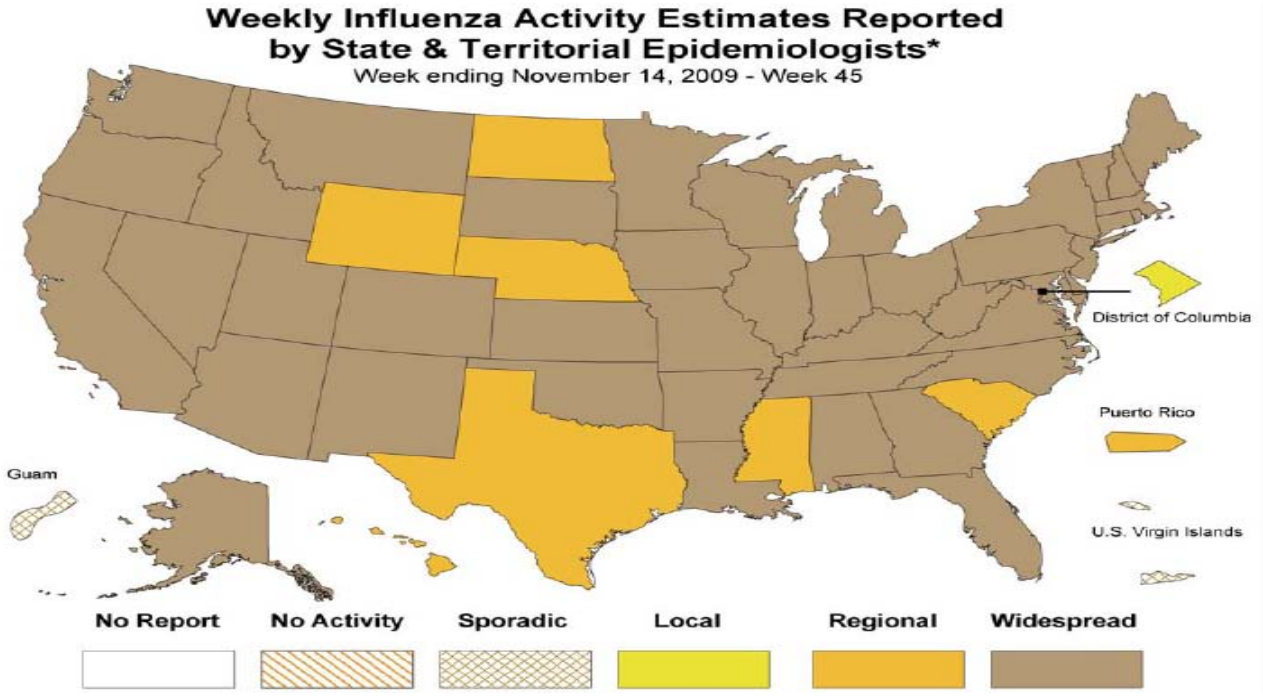
Influenza A:

2,468 (79.5%)	2009 H1N1
1 (0.1%)	Seasonal H1
0 (0.0%)	Seasonal H3
624 (20.1%)	Unsubtyped
10 (0.3%)	Untypable

Antiviral Resistance Data:

	2009 Influenza A (H1N1)	Seasonal Influenza A (H1N1)	Influenza A (H3N2)	Influenza B
# tested	1,209	0	4	4
Oseltamivir	10 (0.8%)	0 (0%)	0 (0%)	0 (0%)
# tested	353	0	0	0
Zanamivir	0 (0%)	0 (0%)	0 (0%)	0 (0%)
# tested	182	0	1	N/A*
Adamantanes	181 (99.5%)	0 (0%)	1 (100%)	N/A*

*The adamantanes (amantadine and rimantadine) are not effective against influenza B viruses.



TRANSMISSION

Source:
Humans mostly
Respiratory tract secretions
Transmission:
--Large droplets
--Airborne: limited to few feet
--Direct contact: with nasal or throat secretion.
--Fomites: Article freshly soiled with nasal or throat secretion.
Attack rate
HH= 25%, moderate

Incubation
2-5 (1-7) days

Close contact
30 mn within 6 feet of a symptomatic

Respiratory Tract Infection 1 wk
fever, cough, sore throat, body aches, headache, chills and fatigue.

Communicability
1 day beforeSymptoms to End of Fever (+1 day)

Exclusions
--Until fever subsides (100oF) + 1 day*
--Longest of onset to end of S x + 1day*
* HCP who work with high risk patients - exclude for 7 days
-- HCP = Health Care Practitioner
--Exposed : Watch for Sx , then exclude as above
--If contact with high risk (Exp + 1 to +7)

Complication
- Viral or bacterial pneumonia
-Aggravation of chronic pulmonary, cardiac, renal, hepatic, hematologic or metabolic disorders

High risk of severe illness and complications:
• aged 6 months–4 years; or 65 and older
• residents of chronic-care facilities;
• long-term aspirin therapy
• chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, hematological or metabolic disorders (including diabetes);
• immunosuppressed (immunosuppression caused by meds or by HIV)
• any condition (cognitive dysfunction, spinal cord injuries, seizure disorders, or other neuromuscular disorders that compromise respiratory function or handling of respiratory secretions or that increase aspiration risk

DIAGNOSIS

Clinical criteria: influenza-like illness =
-fever ≥ 37.8°C [100°F] & (cough or sore throat) or
-acute respiratory illness = recent onset of at least 2 of : rhinorrhea or nasal congestion, sore throat , cough, fever
-Hospitalization for acute lower respiratory tract infection and no other cause for this infection
Test results come too late to be of use for case or contact management

Use **rapid influenza test** when it is important for treatment decisions, if not it is not so useful. Assuming sensitivity=70%, specificity=95%, the predictive value of a positive test is 5% at the beginning and end of the season and 90% at the peak. The predictive value of a negative test is 75%.

TREATMENT & PROPHYLAXIS

Oseltamivir Roche Pharmaceuticals (Tamflu®—tablet
Zanamivir GlaxoSmithKline (Relenza®—inhaled powder).

Antivirals indicated mostly for high risk, severe disease and hospitalized individuals

Prophylaxis - 10 days Only contacts that are at high risk of severe illness and complications.
Treatment - 5 days:
• Severe disease
• High risk of severe illness and complications.

PREVENTION OF TRANSMISSION - INFECTION CONTROL

Prevent emission
Respiratory hygiene
Cough etiquette
--Cover cough, sneeze
--Use tissues, dispose safely
--Wear mask
--Spatial separation 3 ft
Early triage to institute
Respiratory hygiene

Modified Droplet* & Contact Precautions
Modified Droplet = Personal respirator (N95) /instead of surgical mask

High risk of airborne transmission: Aerosol producing procedures:
--bronchoscopy
--intubation
--nebulization
--suction

USE AIRBORNE PRECAUTIONS
Personal Resp N95
Neg pressure room
≥ 12 air exchange

Restrict hospitalization: Hospitalization is NOT for quarantine or diagnostics. Hospitals provide care for acutely ill

DO
- Use hand sanitizers between each patient contact or wash hands if visibly soiled
- Wear gloves when touching patient and patient areas
- Wear mask when closer than 3 ft from patient
- Know what is “clean”, what is “contaminated “and keep them apart

DO NOT
- Touch eyes, nose or mouth with contaminated hands (gloved or ungloved).
- Make adjustments to the PPE during patient care or removal; Careful placement of PPE before patient contact
- Touch contaminated environmental surfaces not directly related to patient care (door knobs, light switches)
- Touch pen, glasses and other personal items during patient care