

Influenza Surveillance Report

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Week 3 From 01/17/2010 To 01/23/2010

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 2,006 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 243,000. The state public health laboratory continues to test only hospitalized cases and specimens from sentinel outpatient physician's offices.

Page 2 : Influenza Sentinel Surveillance

Page 3 & 4: Distribution of the novel influenza strain by gender, age and time & geographical distribution

Page 5: ILI surveillance in 2009 & for the past 10 years

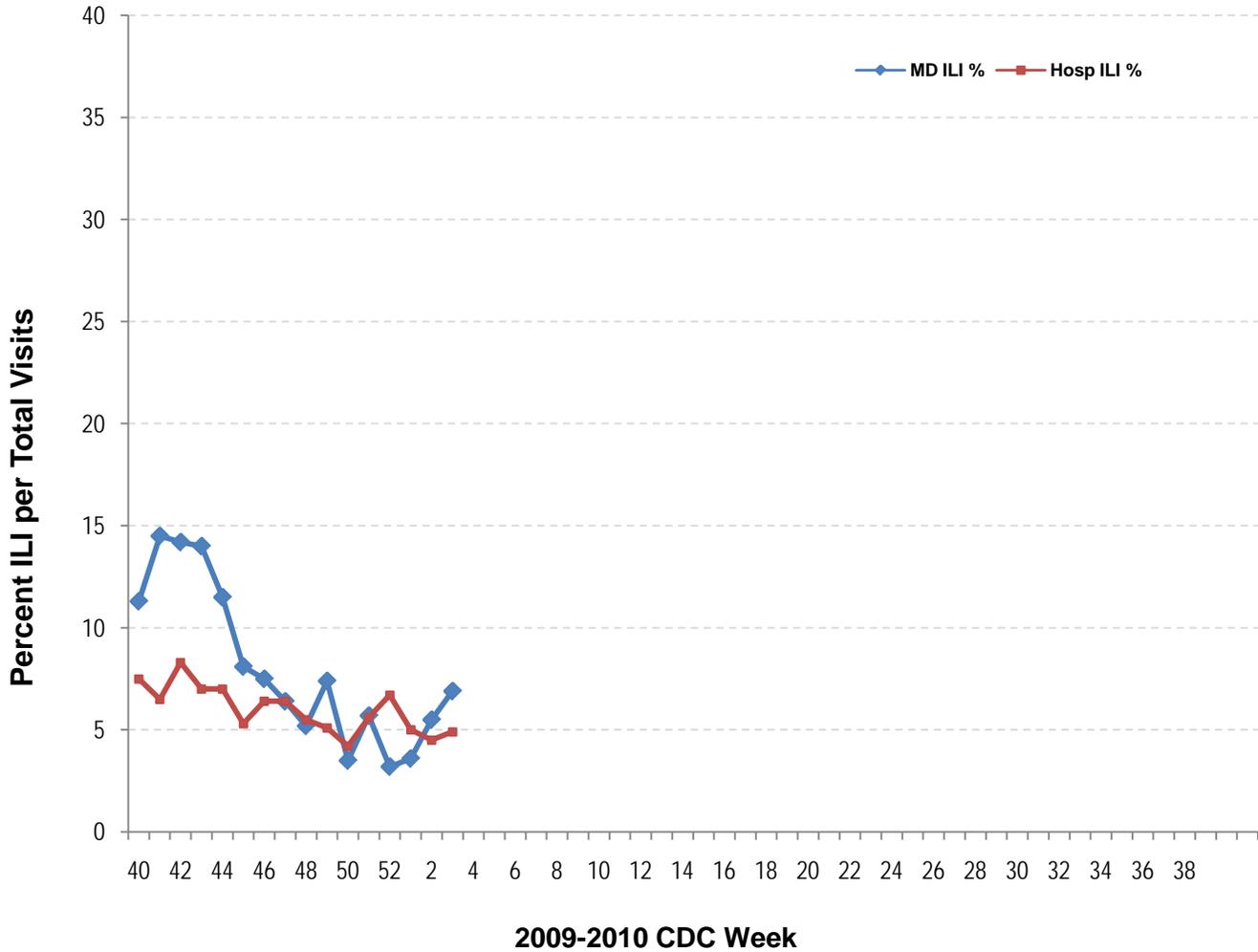
Page 6: Laboratory surveillance

Page 7: Summary of influenza activity in the USA

Page 8: Basics of influenza transmission, diagnosis, prophylaxis and treatment, prevention of transmission

Influenza Sentinel Surveillance

Influenza Sentinel Surveillance - Louisiana, 2009-2010 Season

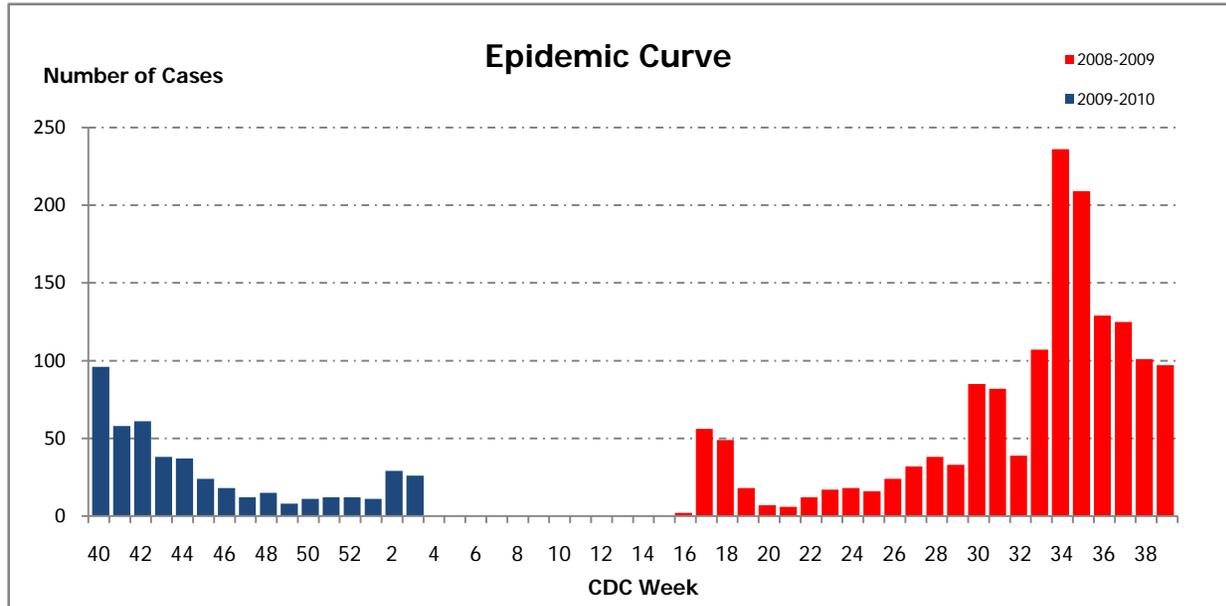


This graph shows the percentage of visits for ILI over the total number of visits for sentinel physicians' offices and emergency departments. This is the best approach to estimate the magnitude of influenza transmission. ILI counts do include some viral infections other than influenza, but experience 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 **2,006**



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	47%	53%	13%	70%	12%	4%	1%	100%
2009 H1N1 Hosp	46%	54%	16%	37%	27%	16%	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	74.5%	ILI = Fever + Cough /Sorethroat /Upper respiratory infection
Gastro-Intestinal	17.1%	Gastro-intestinal = Nausea, or vomiting, or diarrhea
Pneumonia /ARDS	14.7%	Pneumonia or ARDS = Acute Respiratory Distress Syndrome

*Cases may be counted in more than 1 category

Hospitalization

H1N1	LA	USA*
Number	557	246,000
rate/100K /year	16.5	109.3

Death

H1N1	LA	USA*
Number	43	11,160
per 100 Hosp	7.7	4.5

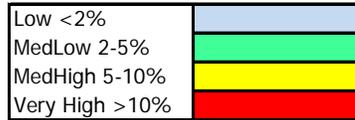
*CDC has developed a method to provide an estimate of the number of hospitalizations and deaths based on data collected through the Emerging Infections Program (EIP). These numbers will be updated every three to four weeks.

Risk Factors	OP	Hosp
Aspirin LT	0.0%	0.0%
Asthma	6.4%	7.2%
Cancer	0.6%	1.6%
Chr Cardiac	0.9%	3.1%
Chr Endocrino	0.2%	0.1%
Chr Liver	0.0%	0.2%
Chr Metabolic	0.0%	0.1%
Chr Neuro	0.6%	1.1%
Chr Pulmonary	0.5%	5.3%
Chr Renal	0.3%	1.7%
Congenital	0.5%	1.7%
Diabetes	0.3%	3.3%
HIV	0.2%	0.6%
Obesity	1.1%	4.5%
Pregnant	0.5%	5.6%
Sickle Cell	0.1%	1.0%
Steroid	0.0%	0.6%
Transplant	0.2%	1.0%
Total	12.5%	38.8%

Spatial Distribution of Influenza

Region	Parish	H1N1*	%ILI**	% Absent†
Region 1	Jefferson	208	0.3	10.2
	Orleans	138	3.9	9.3
	Plaquemines	27		
	St Bernard	28	2.3	4.9
	All Region 1	401	2.3	8.7
Region 2	Ascension	12		5.4
	East Baton Rouge	159	8.4	4.1
	East Feliciana	1	0.4	4.6
	Iberville	8		5.4
	Pointe Coupee	6		6.8
	West Baton Rouge	7		5.6
	West Feliciana	3		7.1
	All Region 2	196	7.0	4.9
Region 3	Assumption	1		5.8
	Lafourche	68	6.0	7.0
	St Charles	32		6.0
	St James	6		4.8
	St. John	13		4.4
	St. Mary	30	4.0	5.4
	Terrebonne	24	8.0	5.8
	All Region 3	174	6.4	5.5
Region 4	Acadia	17		6.7
	Evangeline	12		6.0
	Iberia	41		4.8
	Lafayette	162	1.3	7.2
	St Landry	32		4.5
	St Martin	17		4.8
	Vermillion	19		5.0
All Region 4	300	1.3	5.4	
Region 5	Allen	4	4.3	7.0
	Beauregard	8		6.3
	Calcasieu	85	1.2	5.3
	Cameron	0		6.5
	Jefferson Davis	4	7.7	5.4
All Region 5	101	3.0	6.2	
Region 6	Avoyelles	4	2.2	6.9
	Catahoula	6		7.3
	Concordia	4	3.2	
	Grant	6		5.2
	LaSalle	10	11.1	7.4
	Rapides	125	23.8	5.4
	Vernon	37		5.8
	Winn	0		5.8
All Region 6	192	7.9	6.1	
Region 7	Bienville	7		6.1
	Bossier	83		
	Caddo	186	12.7	5.8
	Claiborne	2		6.1
	DeSoto	22		7.4
	Natchitoches	8	9.2	5.0
	Red River	2		6.1
	Sabine	50		5.7
Webster	15		6.5	
All Region 7	375	11.9	6.2	

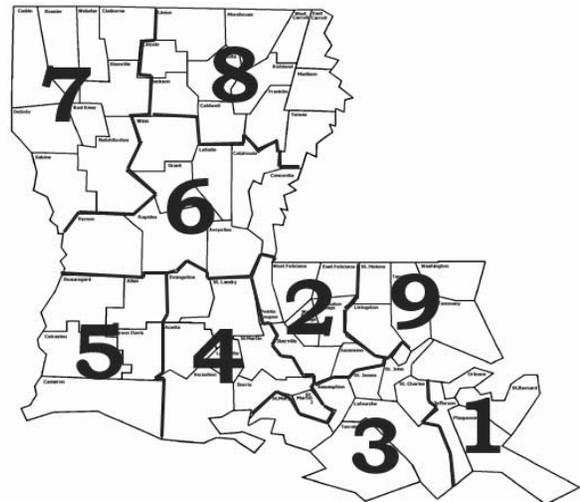
Region	Parish	H1N1	%ILI	% Absent†
Region 8	Caldwell	8		6.0
	East Carroll	1		4.1
	Franklin	0		7.3
	Jackson	1		6.4
	Lincoln	6		5.7
	Madison	1		4.6
	Morehouse	10		5.6
	Ouachita	66	5.7	5.4
	Richland	12		5.9
	Tensas	0		6.2
	Union	10	0.3	5.9
	West Carroll	4		7.1
All Region 8	119	3.2	5.8	
Region 9	Livingston	19	10.8	6.3
	St. Helena	0	3.3	5.2
	St Tammany	63	2.6	5.4
	Tangipahoa	30	8.1	5.9
	Washington	36	2.4	5.3
All Region 9	148	5.8	5.5	
To be determined		0		
Grand Total		2006		



* Cumulative number from week 16 to present

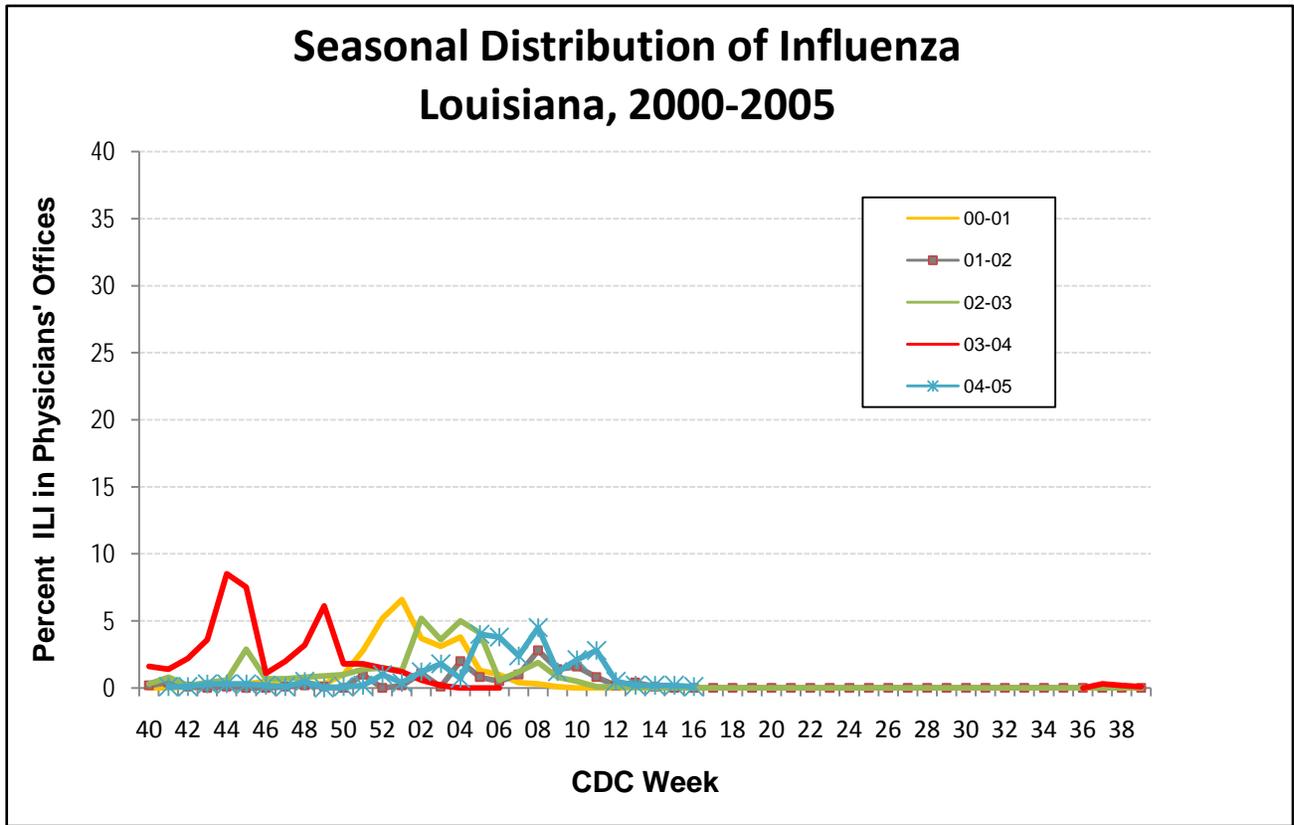
** Last 4 week average % ILI based on sentinel surveillance data

† % School absenteeism for week 0946 due to Thanksgiving Holiday

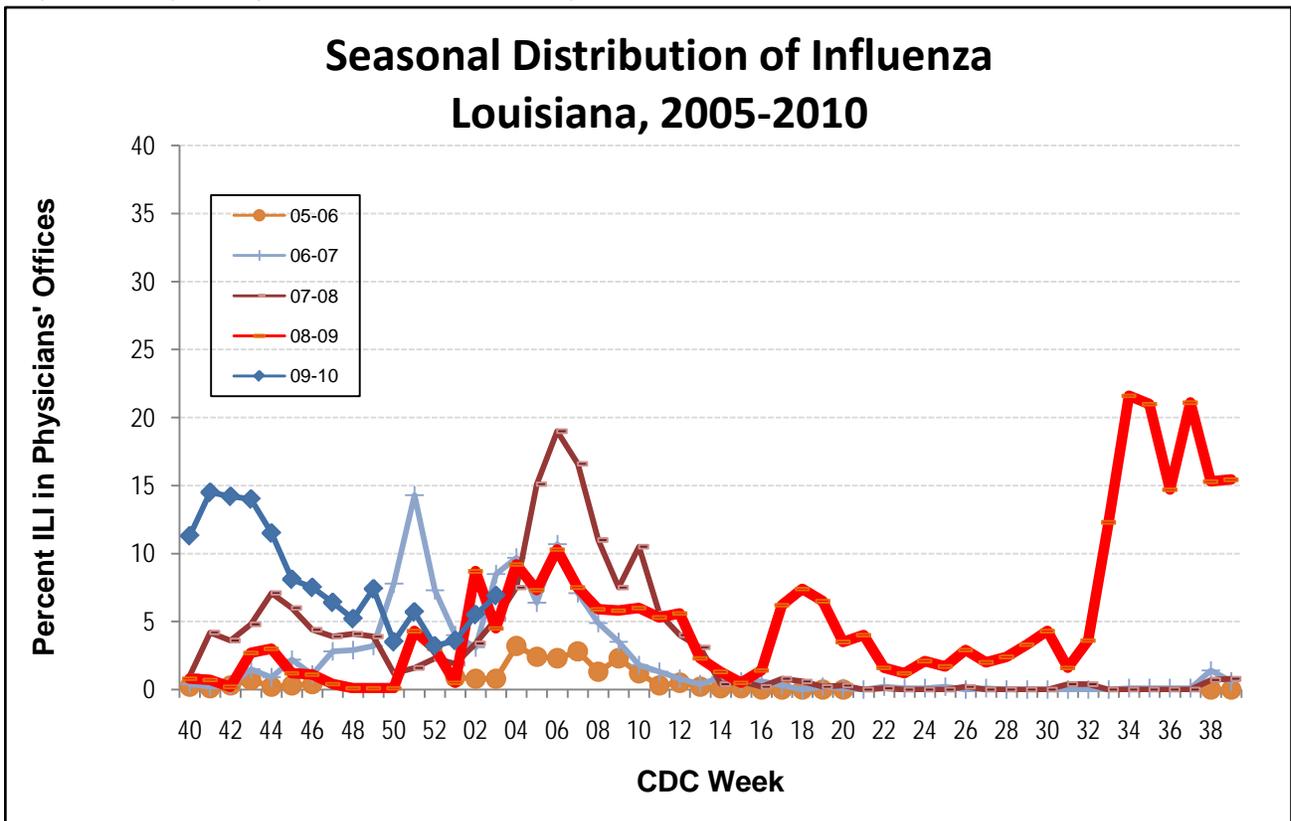


This chart displays the intensity of influenza activity throughout the state. There are differences between regions. Although not representative of the exact occurrence of H1N1 throughout the state, it appears that H1N1 is spread in all areas of the state and both in urban and rural areas.

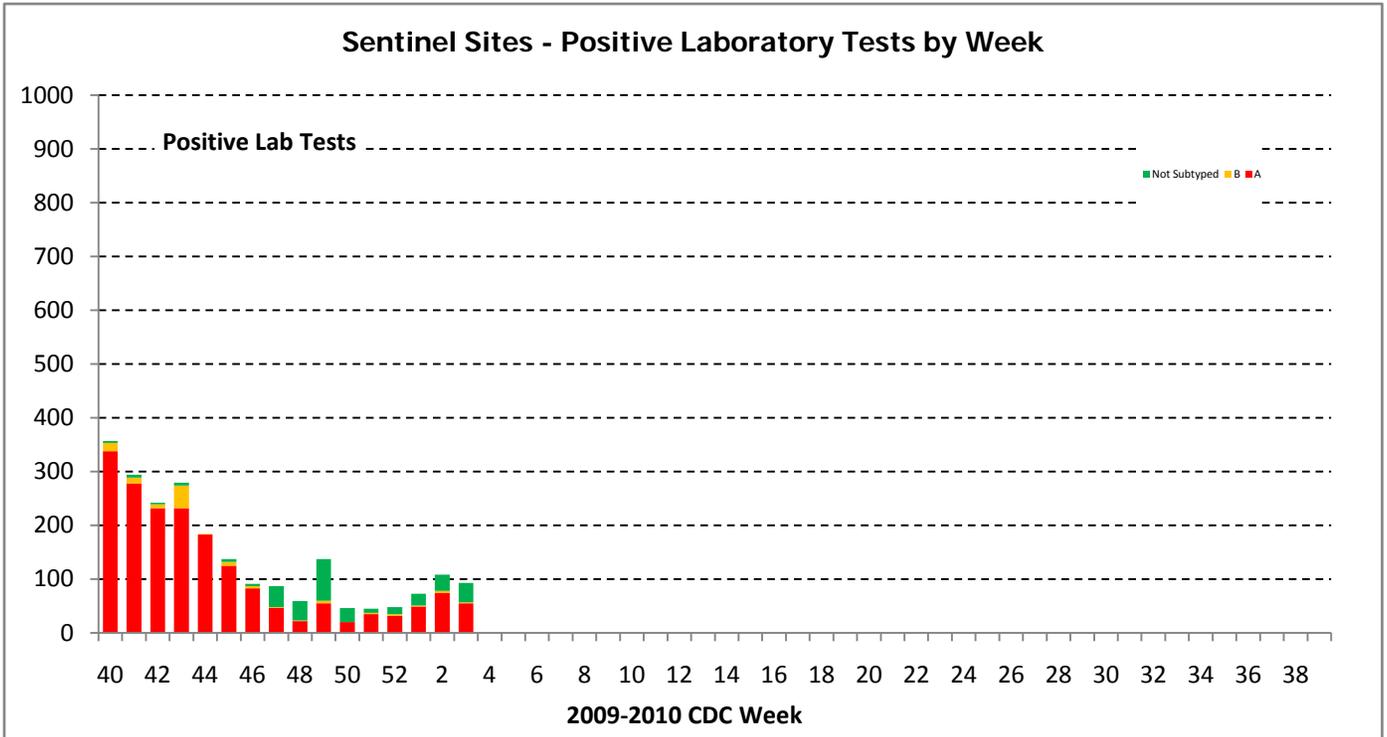
Historical Data on Influenza in Louisiana



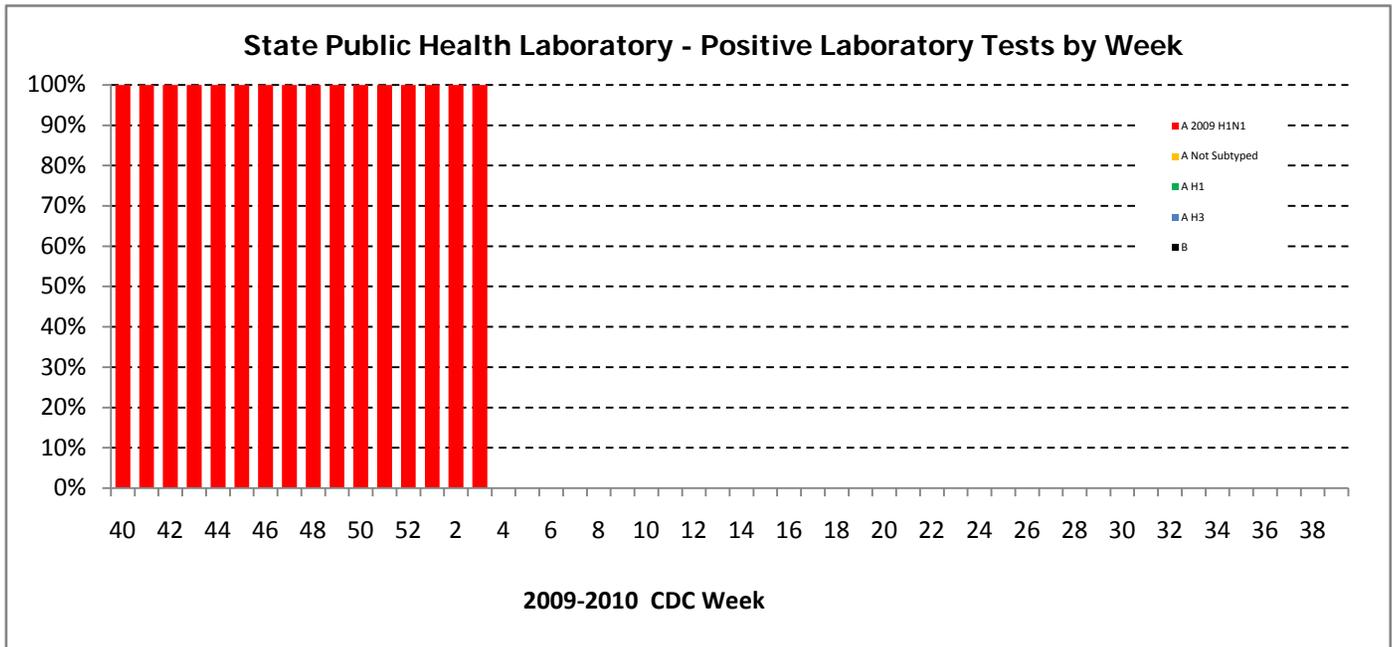
The purpose of this page is to show the data on ILI surveillance among sentinel physicians' over the past 10 years to enable comparisons with previous years and better estimate the amplitude of this season's influenza transmission.



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 3 influenza activity remained at approximately the same levels this week in the United States. 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.

Five influenza-associated pediatric deaths were reported. Four deaths were associated with 2009 influenza A (H1N1) virus infection and one was associated with an influenza A virus for which the subtype is undetermined.

Proportion of outpatient visits for influenza-like illness (ILI) was 1.7% which is below the national baseline of 2.3%. Two of the 10 regions reported ILI equal to their region-specific baseline levels.

Lab Data:

3,588	Specimens tested
164 (4.6%)	Influenza positive
162 (98.8%)	Influenza A
2 (1.2%)	Influenza B

Influenza A:

98 (60.5%)	2009 H1N1
0 (0.0%)	Seasonal H1
0 (0.0%)	Seasonal H3
62 (38.3%)	Unsubtyped
2 (1.2%)	Untypable

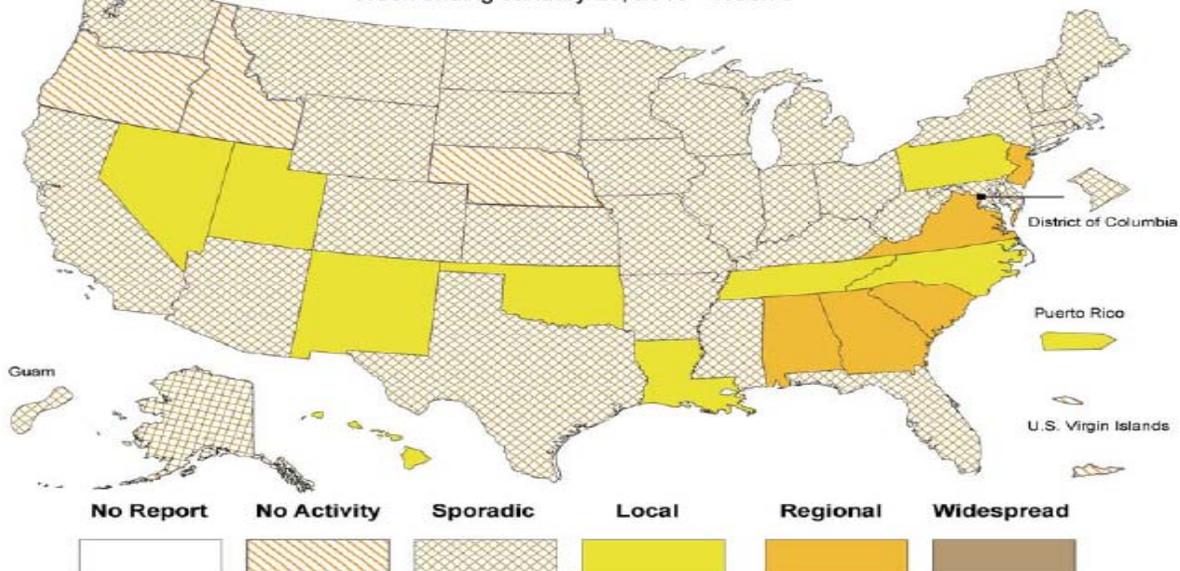
Antiviral Resistance Data:

	2009 Influenza A (H1N1)	Seasonal Influenza A (H1N1)	Influenza A (H3N2)	Influenza B
# tested	3,026	1	8	6
Oseltamivir	41 (1.4%)	1 (100%)	0 (0%)	0 (0%)
# tested	858	0	0	0
Zanamivir	0 (0%)	0 (0%)	0 (0%)	0 (0%)
# tested	1,056	1	10	N/A*
Adamantanes	1,053 (99.7%)	0 (0%)	10 (100.0%)	N/A*

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

Weekly Influenza Activity Estimates Reported by State & Territorial Epidemiologists*

Week ending January 23, 2010 - Week 3



TRANSMISSION

Source: Humans mostly Respiratory tract secretions Transmission: --Large <u>droplets</u> -- <u>Airborne</u> : limited to few feet -- <u>Direct contact</u> : with nasal or throat secretion. -- <u>Fomites</u> : 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	<div style="background-color: red; color: white; padding: 2px;">Respiratory Tract Infection 1 wk</div> fever, cough, sore throat, body aches, headache, chills and fatigue. <div style="background-color: lightgreen; padding: 2px;">Communicability</div> 1 day before Symptoms to End of Fever (+1 day) <div style="background-color: white; padding: 2px;">Exclusions</div> --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)
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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 $\geq 37.8^{\circ}\text{C}$ [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 <u>Respiratory hygiene</u> <u>Cough etiquette</u> --Cover cough, sneeze --Use tissues, dispose safely --Wear mask --Spatial separation 3 ft Early triage to institute Respiratory hygiene	<div style="background-color: red; color: white; padding: 2px;">Modified Droplet* & Contact Precautions</div> Modified Droplet = Personal respirator (N95) /instead of surgical mask High risk of airborne transmission: Aerosol producing procedures: --bronchoscopy USE AIRBORNE PRECAUTIONS --intubation PRECAUTIONS --nebulization Personal Resp N95 --suction Neg pressure room ≥ 12 air exchange
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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