

Influenza Surveillance Report

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Week 39 From 9/27/2009 To 10/3/2009

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 1,472 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 97,000. The state public health laboratory continues to test only hospitalized cases and specimens from sentinel outpatient physician's offices. School absenteeism data has been added on page 4.

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

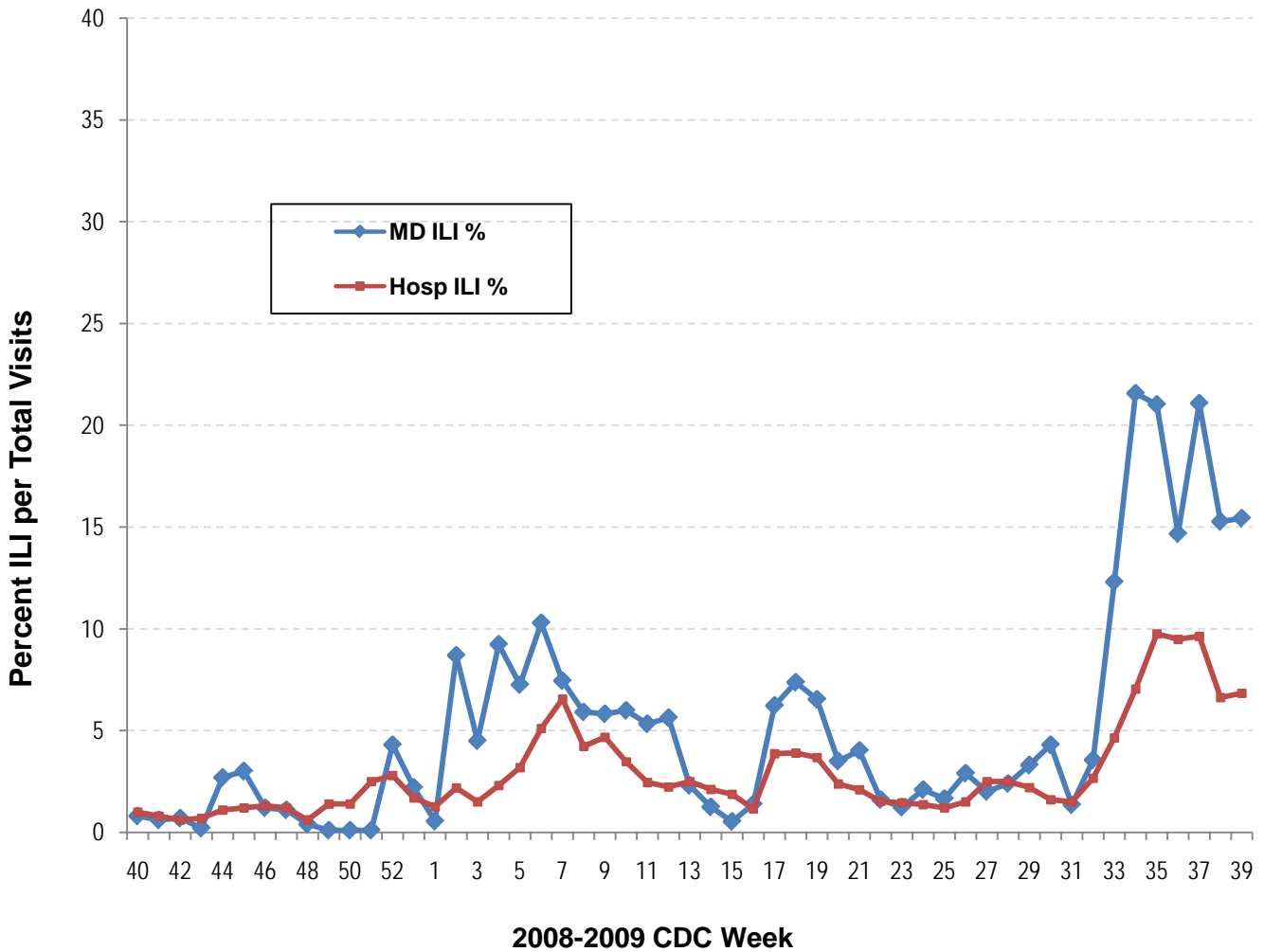
Page 6: Laboratory surveillance

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, 2008-2009 Season

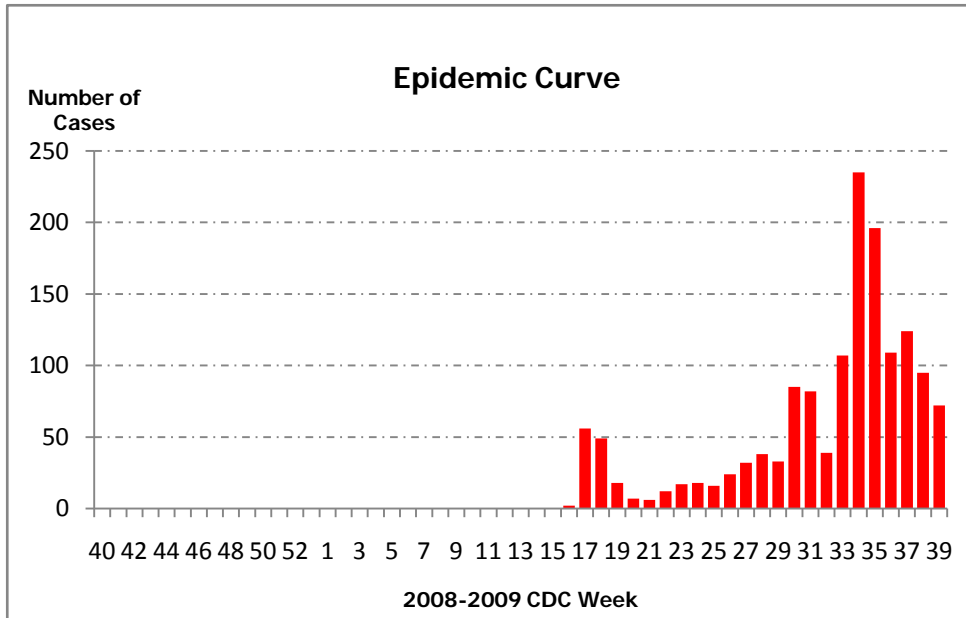


This graph shows the percentage of visits for ILI over the total number of visits for sentinel physicians' offices and emergency departments. This is the best approach to estimate the magnitude of influenza transmission. ILI counts do include some viral infections other than influenza, but experience 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 **1,472**



Age and Gender distribution

	Gender distribution		Age distribution				
	% M	% F	0_4	5_24	25_64	65+	
Population	48%	52%	7%	30%	51%	12%	100%
Previous seasonal			31%	36%	27%	6%	100%
2009 H1N1 OutPt	45%	55%	12%	71%	17%	1%	100%
2009 H1N1 Hosp	45%	55%	17%	42%	38%	3%	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	9.3%	Fever = Patients with fever only and no other symptoms
Influenza Like	80.3%	ILI = Fever + Cough /Sorethroat /Upper respiratory infection
Gastro-Intestinal	18.0%	Gastro-intestinal = Nausea, or vomiting, or diarrhea
Pneumonia /ARDS	9.5%	Pneumonia or ARDS = Acute Respiratory Distress Syndrome

*Cases may be counted in more than 1 category

Hospitalization

H1N1	LA	USA
Number	341	25,337
rate/100K /year	17.1	19.1

Death

	LA	USA
Number	16	2377
per 100 Hosp	4.7	9.4

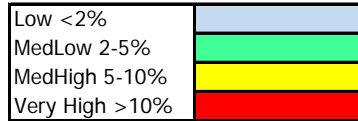
20 Deaths Total

Risk Factors	OP	Hosp
Aspirin LT	0.0%	0.0%
Asthma	4.0%	3.9%
Cancer	0.4%	0.6%
Chr Cardiac	0.5%	1.1%
Chr Endocrino	0.2%	0.1%
Chr Liver	0.0%	0.0%
Chr Metabolic	0.0%	0.1%
Chr Neuro	0.5%	0.9%
Chr Pulmonary	0.3%	2.2%
Chr Renal	0.3%	0.5%
Congenital	0.4%	0.7%
Diabetes	0.1%	1.0%
HIV	0.2%	0.1%
Obesity	0.3%	1.1%
Pregnant	0.2%	2.7%
Sickle Cell	0.1%	0.9%
Steroid	0.0%	0.2%
Transplant	0.2%	0.4%
Total	7.6%	16.4%

Spatial Distribution of Influenza

Region	Parish	H1N1*	%ILI**	% Absent†
Region 1	Jefferson	158	2.8	7.4
	Orleans	95	10.3	14.4
	Plaquemines	23		
	St Bernard	8		5.5
	All Region 1	284	7.4	9.0
Region 2	Ascension	9		5.8
	East Baton Rouge	125	17.1	8.0
	East Feliciana	1		3.7
	Iberville	6		3.8
	Pointe Coupee	5		8.6
	West Baton Rouge	6		8.5
	West Feliciana	1		5.4
	All Region 2	153	17.1	7.1
Region 3	Assumption	0		9.1
	Lafourche	60	7.1	6.3
	St Charles	28		5.7
	St James	6	8.0	5.5
	St. John	10		8.2
	St. Mary	16	22.8	8.0
	Terrebonne	23	6.5	5.0
	All Region 3	143	7.7	6.5
Region 4	Acadia	13		8.9
	Evangeline	10		9.5
	Iberia	37	15.7	6.4
	Lafayette	115	8.6	5.8
	St Landry	23		4.9
	St Martin	15		6.4
	Vermillion	11		6.6
All Region 4	224	9.6	7.1	
Region 5	Allen	2	4.7	9.4
	Beauregard	4		6.8
	Calcasieu	58	12.0	4.6
	Cameron	0		6.2
	Jefferson Davis	3	12.6	7.9
All Region 5	67	11.6	7.2	
Region 6	Avoyelles	2		4.6
	Catahoula	5		
	Concordia	0		5.8
	Grant	6		6.1
	LaSalle	7	62.2	9.7
	Rapides	106	11.5	5.4
	Vernon	29		8.3
	Winn	0	22.1	6.2
All Region 6	155	23.8	6.7	
Region 7	Bienville	7		6.6
	Bossier	50		5.0
	Caddo	148	23.2	5.6
	Claiborne	1		9.0
	DeSoto	17		9.4
	Natchitoches	4	20.4	3.6
	Red River	1		7.9
	Sabine	28		8.3
Webster	9		8.8	
All Region 7	265	22.1	7.2	

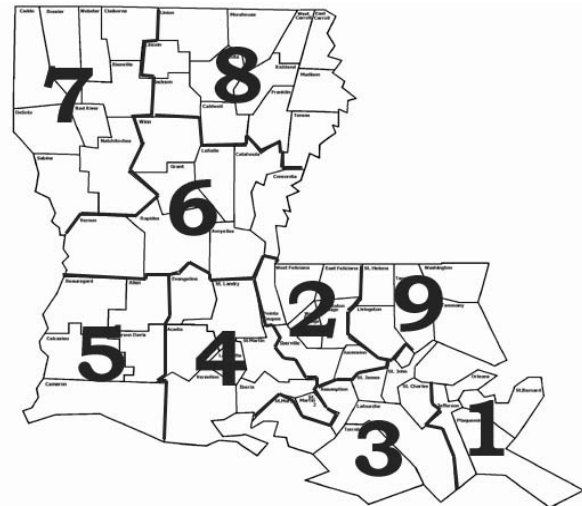
Region	Parish	H1N1	%ILI	% Absent†
Region 8	Caldwell	2		10.9
	East Carroll	1		11.3
	Franklin	0		11.6
	Jackson	1		11.6
	Lincoln	3		9.6
	Madison	1		8.7
	Morehouse	6	5.3	6.2
	Ouachita	42	17.5	8.0
	Richland	10		6.8
	Tensas	0		9.1
	Union	2	15.9	10.7
West Carroll	2		7.7	
All Region 8	70	15.8	9.3	
Region 9	Livingston	11	32.9	5.3
	St. Helena	0		6.4
	St Tammany	53	4.8	4.5
	Tangipahoa	23	27.6	7.9
	Washington	24	3.9	6.5
	All Region 9	111	11.5	6.2
To be determined		0		
Grand Total		1472		



* Cumulative number from week 16 to present

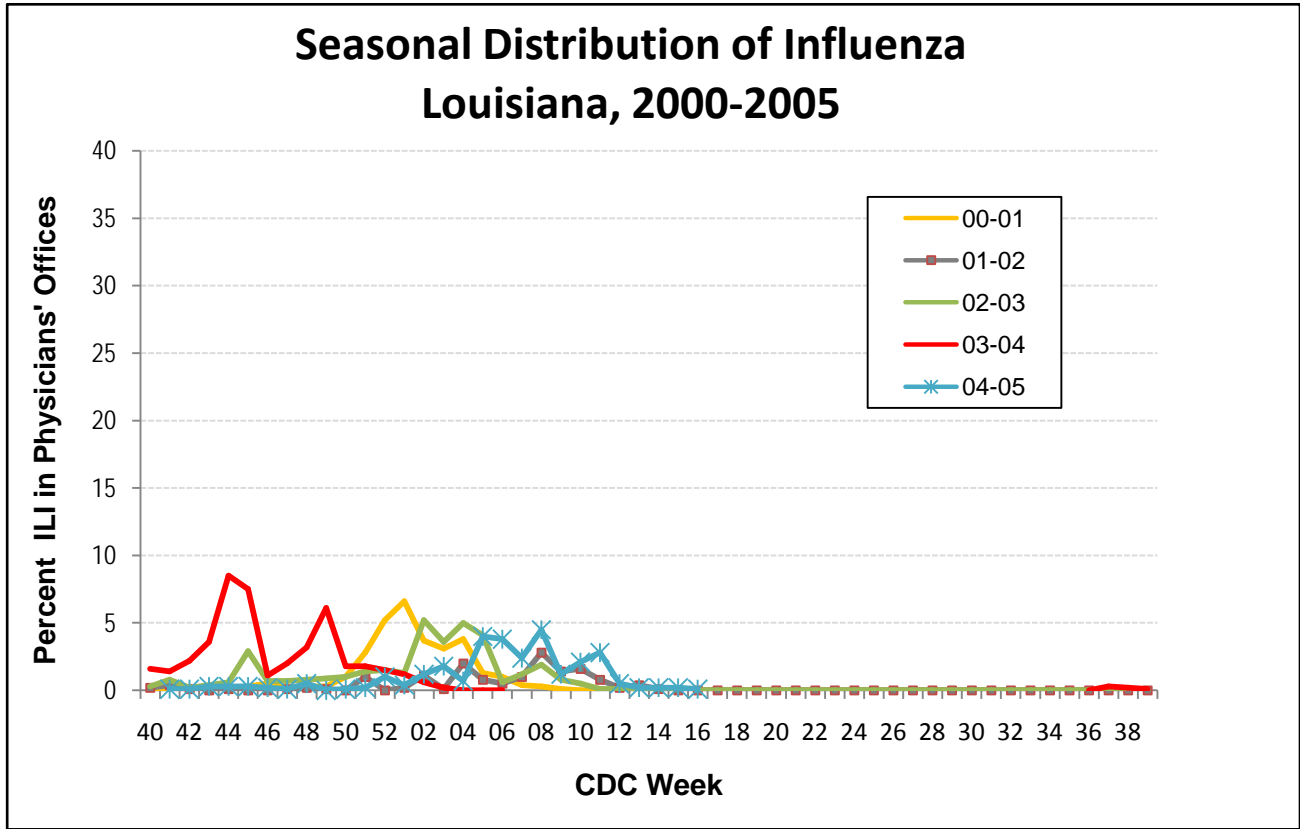
** Last 4 week average % ILI based on sentinel surveillance data

† % School absenteeism for the current reporting week

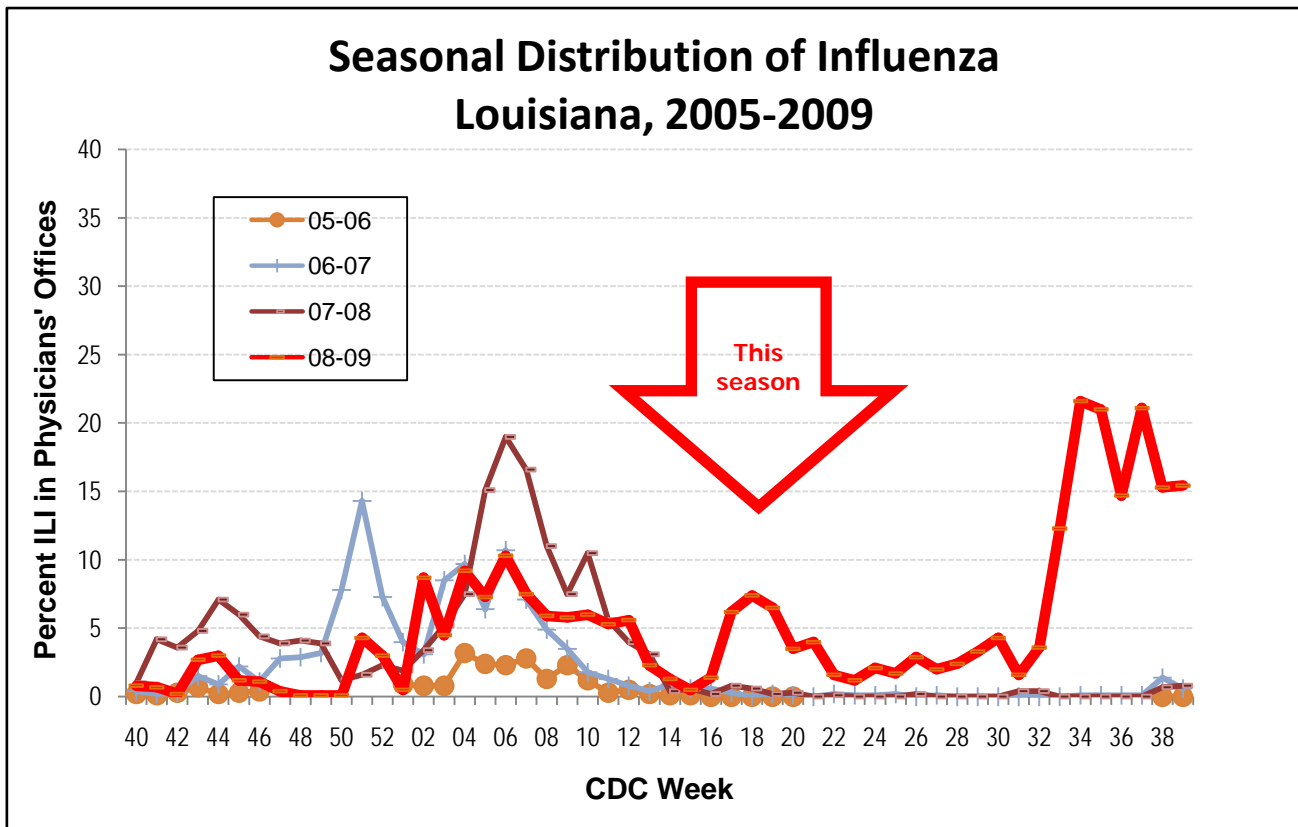


This chart displays the intensity of influenza activity throughout the state. There are differences between regions. Although not representative of the exact occurrence of H1N1 throughout the state, it appears that H1N1 is spread in all areas of the state and both in urban and rural areas.

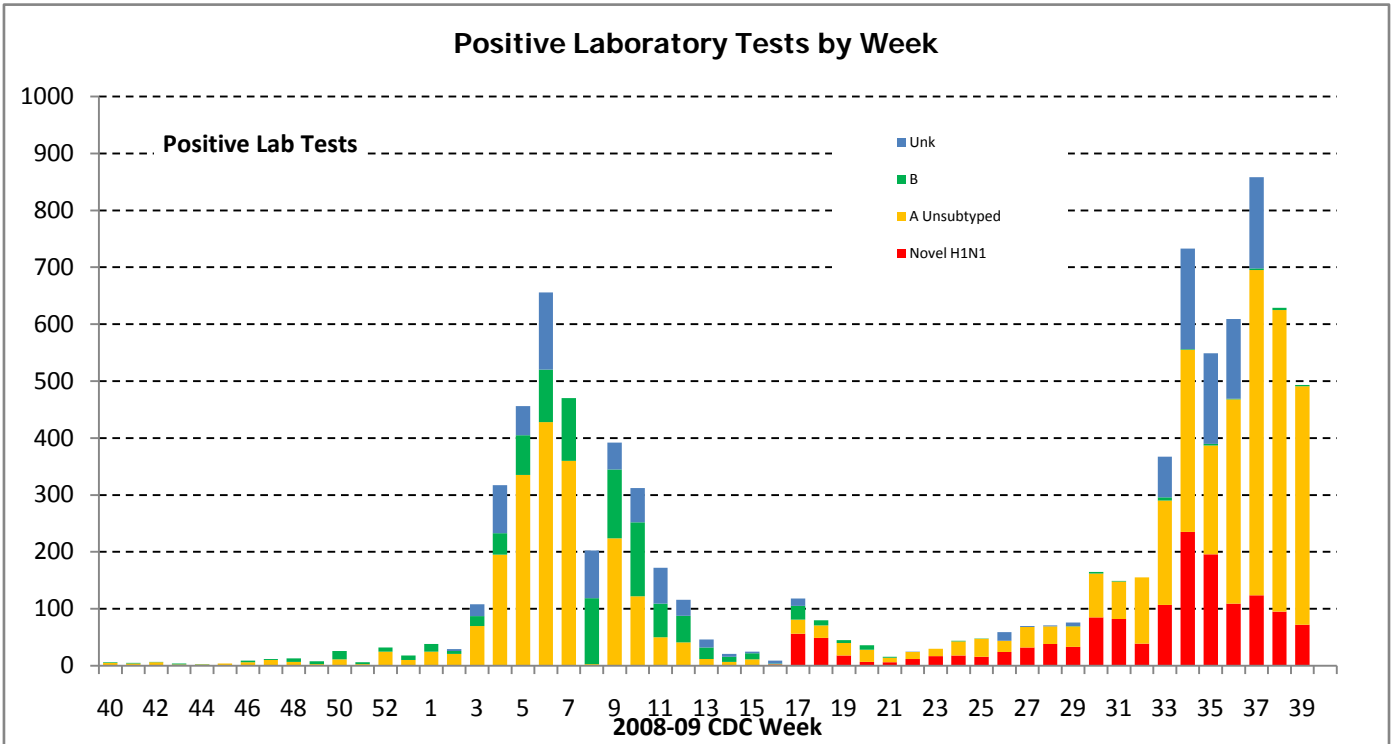
Historical Data on Influenza in Louisiana



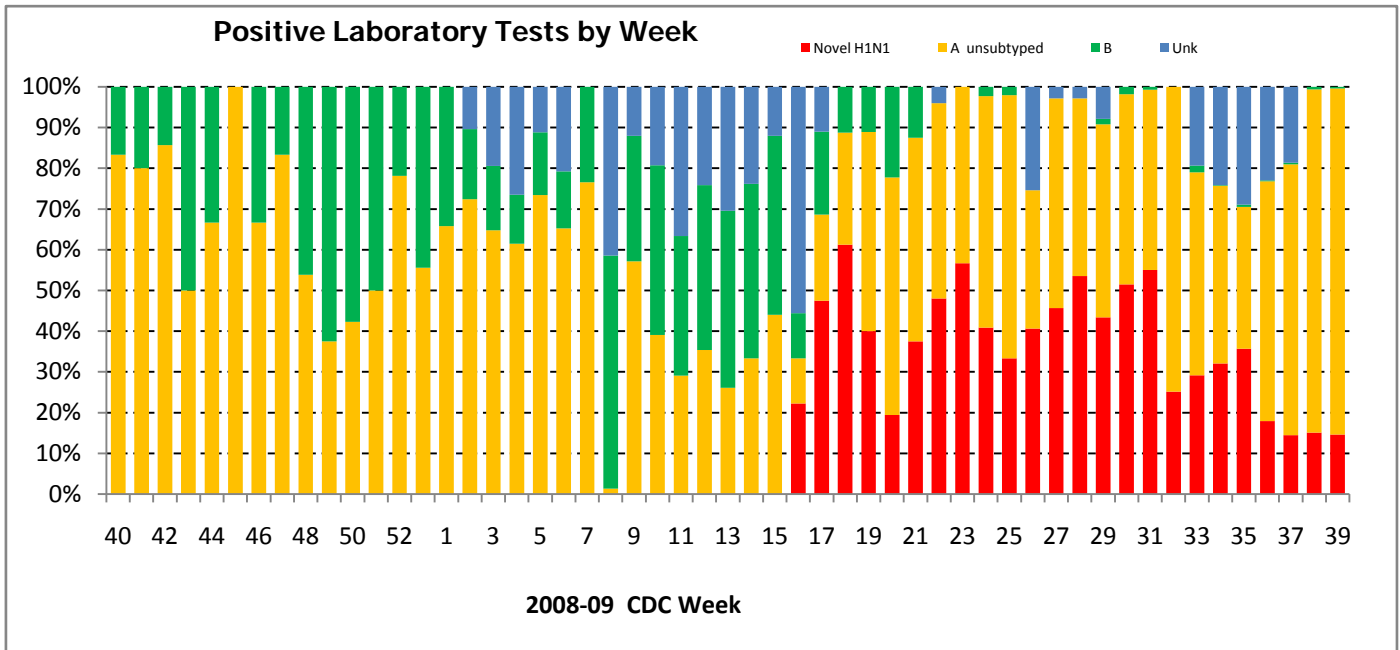
The purpose of this page is to show the data on ILI surveillance among sentinel physicians' over the past 10 years to enable comparisons with previous years and better estimate the amplitude of this season's influenza transmission.



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 0939 influenza activity remained elevated in the United States. 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 at the epidemic threshold.

Nineteen influenza-associated pediatric deaths were reported. Sixteen of these deaths were associated with 2009 influenza A (H1N1) virus infection and three were associated with influenza A virus, for which subtype is undetermined.

Proportion of outpatient visits for influenza-like illness (ILI) was above the national baseline.

Lab Data:

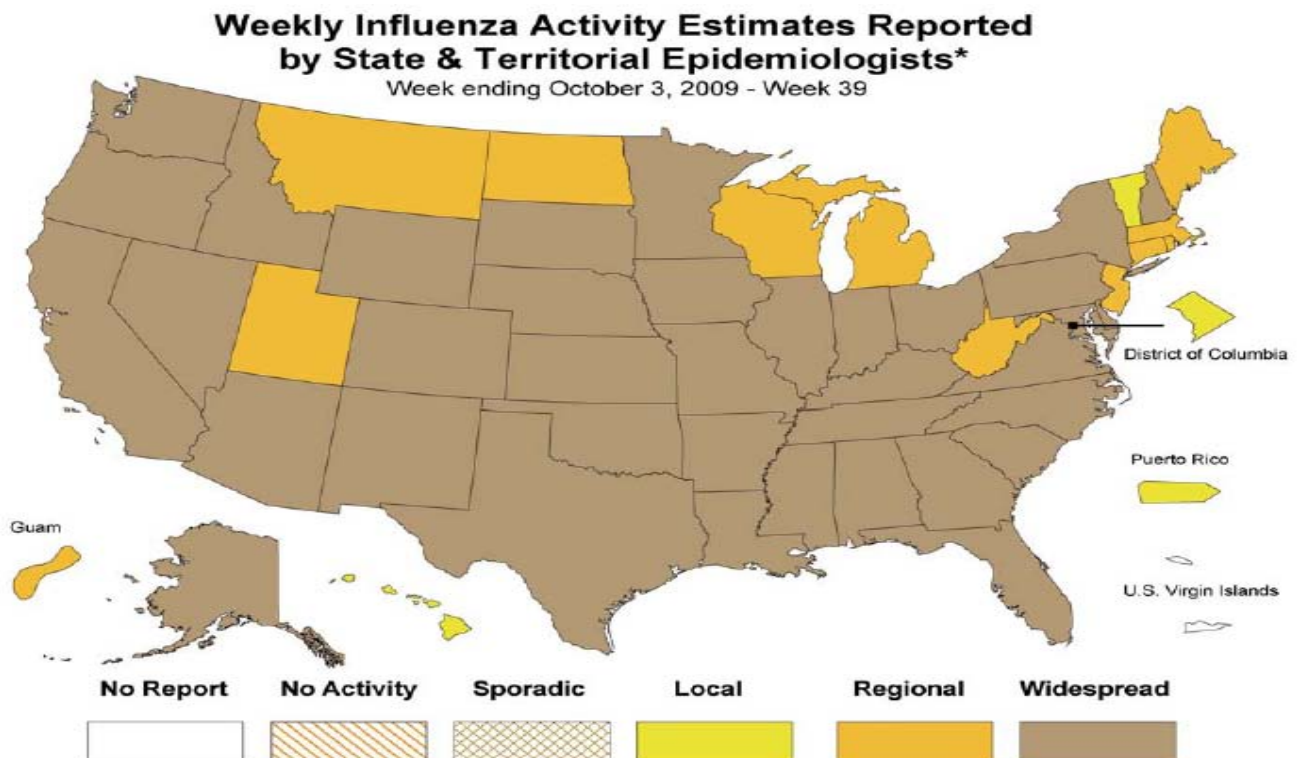
10,816	Specimens tested
2,968 (27.4%)	Influenza positive
2,959 (99.7%)	Influenza A
9 (0.3%)	Influenza B

Influenza A:

1,549 (52.3%)	2009 H1N1
1 (0.1%)	Seasonal H1
1 (0.1%)	Seasonal H3
1,368 (46.2%)	Unsubtyped
405 (1.4%)	Untypable

Antiviral Resistance Data:

	2009 Influenza A (H1N1)	Seasonal Influenza A (H1N1)	Influenza A (H3N2)
# tested	2,040	1,151	264
Oseltamivir	10 (0.5%)	1,146 (99.6%)	0 (0%)
# tested	989	1,151	264
Zanamivir	0 (0%)	0 (0%)	0 (0%)
# tested	526	1,157	271
Adamantanes	526(100%)	7 (0.6%)	271 (100%)



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 except HCP --Longest of onset to end of S x + 1day or 7 days for HCP -- 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