

### 2010-2011 INFLUENZA SEASON SUMMARY NORMAL CYCLES OF FLU ACTIVITY RESUME

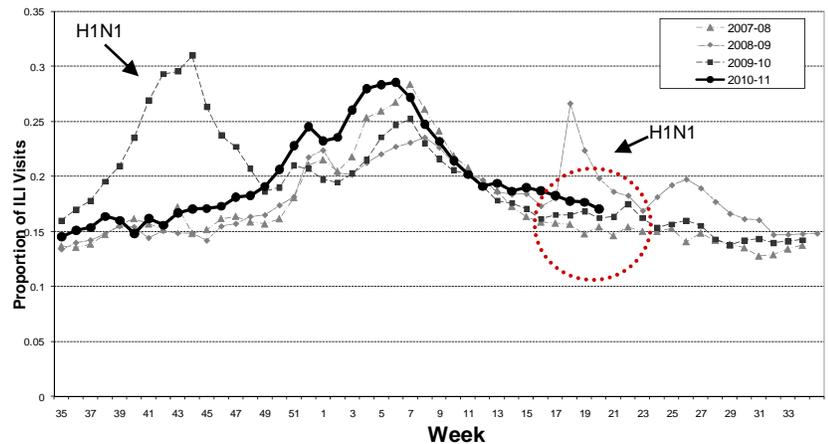
Overall for the 2010-2011 influenza season, Los Angeles County experienced moderate, but fairly typical, flu activity. As shown in Figure 1, the advent of pandemic H1N1 in April 2009 produced atypical peaks of activity in the spring and fall of that year, but flu activity is now increasing and decreasing in a standard two-peak cycle that has been typical for Los Angeles County for most of the past six seasons. The first milder peak of activity occurred just prior to January 2011 followed by the second stronger peak of activity in mid-February. This cycle and peak of flu activity illustrates the importance of continuing influenza vaccination past the New Year and into spring.

**Table 1**  
LA County Surveillance Summary (2010-2011)

LA County Surveillance Summary	Influenza Peak Week Week 7 (2/13/11-2/19/11)	2010-11 Season Summary (8/29/10-5/21/11)
Positive Flu Tests / Total Tests (Percent Positive Flu Tests)	354 / 1,442 (24.5%)	2,122 / 21,987 (9.7%)
Percent Flu A / B	56% / 44%	57% / 43%
Positive RSV Tests / Total Tests (Percent Positive RSV Tests)	100 / 730 (13.7%)	1,304 / 12,720 (10.3%)
Community-Based Respiratory Outbreaks*	3	50
Flu Deaths, Confirmed* (Pediatric Deaths, Confirmed*)	3 (0)	34 (3)

\* By date of onset.

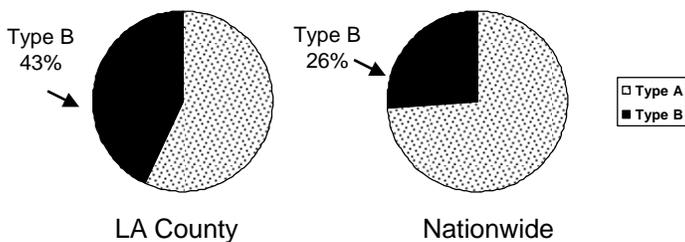
**Figure 1**  
Influenza-like Illness ED Visits in LA County (2007-2011)  
Surveillance Week 20



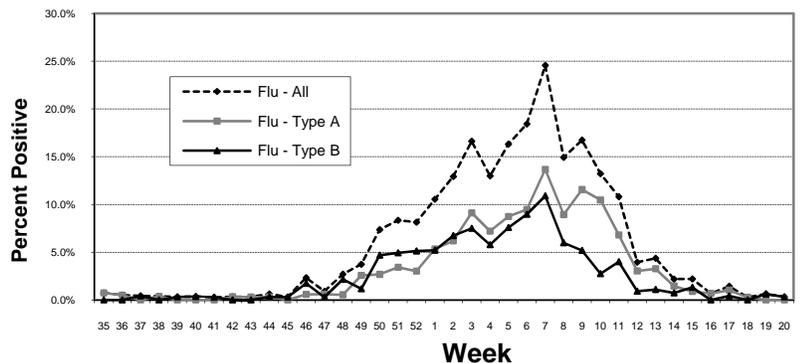
### TYPE B INFLUENZA ACTIVITY GREATER LOCALLY

Flu activity is slightly unique in Los Angeles County as compared to the rest of the nation. While the same three primary influenza strains were identified across the nation, overall, Los Angeles County saw significantly more type B influenza than the rest of the country. As shown above (Table 1), from the beginning to the end of the flu season in Los Angeles County (August 29, 2010 to May 21, 2011) nearly 22,000 specimens were tested through our seasonal surveillance; of these specimens, 2,122 (9.7%) tested positive for flu, and of these slightly less than half (43%) tested as type B. In contrast as shown below (Figure 2), the CDC's national surveillance collected a total of 137,139 specimens throughout the season, yielding 27,186 (19.8%) positive for flu and further identifying only 26% as type B. While treatment and prophylaxis recommendations were identical this season for all circulating strain types, the differences that can occur in Los Angeles County as compared to the rest of the nation demonstrate the need to tailor influenza guidance to match local findings.

**Figure 2**  
Percentage of Type A versus Type B Influenza  
LA County and Nationwide  
(2010-2011)

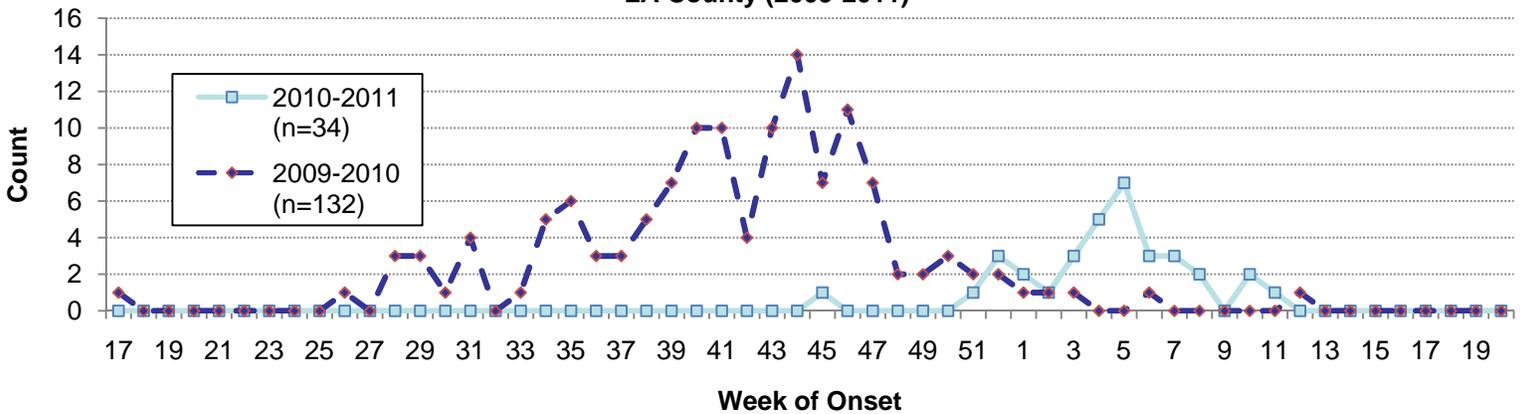


**Figure 3**  
Percent Positive Flu (All Types, Type A, Type B)  
LA County (2010-2011)



## Characteristics of Confirmed Influenza Deaths

**Figure 4**  
**Number of Influenza-Related Deaths by Week of Onset**  
**LA County (2009-2011)**



Demographic Characteristics		Number (%)
Age Group	0-18	3 (8.8%)
	19-64	28 (82.4%)
	65 +	3 (8.8%)
	Median	46.5
	Range	4 – 92
Race	Hispanic	21 (61.8%)
	White Non-Hispanic	7 (20.6%)
	Asian	4 (11.8%)
	African-American	2 (5.9%)
Gender	Female	18 (52.9%)
	Male	16 (47.1%)

Underlying Medical Conditions	Number (%)
Obesity	18 (52.9%)
Cardiac	16 (47.1%)
Metabolic (Diabetes & Kidney Failure)	13 (38.2%)
Overweight	9 (26.5%)
Pulmonary	7 (20.1%)
Current Smoker	6 (17.6%)
Past Smoker	3 (8.8%)
Acquired Neurologic Disease	3 (8.8%)
Immunosuppression	3 (8.8%)
Developmental Disability	1 (2.9%)

Viruses Associated with Influenza Fatalities Los Angeles County (2010-2011)	
Type A	30 (88%)
pH1N1	15 (44%)
A (no subtype)	14 (41%)
H3N2	1 (3%)
Type B	4 (12%)

### SUMMARY OF INFLUENZA-RELATED DEATHS

Starting in 2009, with the advent of the pandemic H1N1 strain of influenza (pH1N1), influenza-related fatalities have been tracked by LACDPH. Despite the fewer number of deaths, there were some significant similarities between the 2009-2010 influenza-related fatalities and the 2010-2011 fatalities. In both seasons, people >65 years represented a very small minority of the reported cases, probably due to pre-existing immunity to the pH1N1 virus. Obesity (BMI >30), first identified last year as an independent risk factor for influenza death, was highly prevalent this year, occurring in more than half of the deaths; obesity + overweight (BMI >25) occurred in almost 80% of influenza fatalities. However, there were some notable differences between the 2 seasons: in 2009-2010, the majority of the fatalities occurred early in the flu season (October-December) versus this past year when the majority of the fatalities had onset in February during our normal peak influenza season (Figure 4). Compared to last year (see [http://publichealth.lacounty.gov/acd/docs/Flu/Season09-10/IW\\_Summary.pdf](http://publichealth.lacounty.gov/acd/docs/Flu/Season09-10/IW_Summary.pdf)), the proportion of severe influenza cases in pregnant women or people with developmental disabilities decreased. Finally, while almost all deaths last season were due to pH1N1, or influenza A which was presumed to be pH1N1, there were several deaths associated with influenza B this season.



**Table 2**  
Confirmed Community-Based  
Respiratory Outbreaks  
LA County 2010-2011 (n=50)

	n	%
<i>Location of Outbreak</i>		
Childcare	3	6
Elementary School	42	84
High School	2	4
K-12 School	1	2
Assisted Living	2	4
<i>Etiology</i>		
Influenza A	2	4
Influenza B	7	14
Streptococcal	2	4
Mixed *	3	6
Unknown	36	72

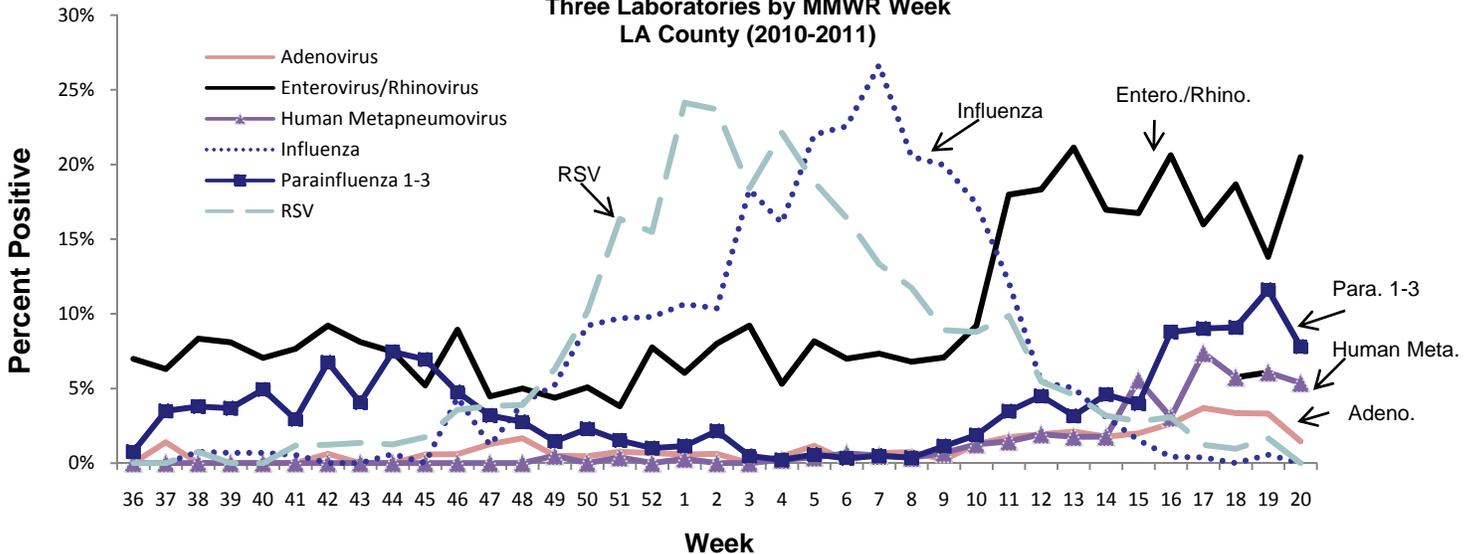
\* All the mixed outbreaks reported involved influenza.

### INFLUENZA OUTBREAKS PRIMARILY REPORTED IN YOUNGER INDIVIDUALS

Respiratory outbreaks were reported across Los Angeles county. As shown in Table 2, of the 50 confirmed respiratory outbreaks in "community" settings (non-healthcare settings), most (84%) occurred in elementary schools. The average duration of the outbreaks was 12 days with a range of 2 to 41 days. Only 30% of the outbreaks had a laboratory confirmed etiology: of those, most (86%) were due to the vaccine preventable viruses, influenza A and B. Of the 48 confirmed outbreaks in schools, only 4 reported offering the influenza vaccine at the school prior to the outbreak. To prevent respiratory outbreaks next season, it is important to get vaccinated for influenza, especially for elementary school aged children.



**Figure 6**  
Percent Positive for Seven Respiratory Viruses from  
Three Laboratories by MMWR Week  
LA County (2010-2011)



### MULTIPLE VIRUSES CONTRIBUTE TO LOCAL RESPIRATORY ILLNESS

As shown above (Figure 6), a myriad of viruses contribute to the overall picture of respiratory illness in Los Angeles County. Respiratory syncytial virus (RSV) peaked several weeks earlier in the season (around week 1) than influenza and yielded similar considerable levels of illness. Influenza did not peak until mid-February (week 7), demonstrating that getting vaccine after January 1 is still warranted. Levels of enterovirus/rhinovirus activity did not increase substantially until both RSV and influenza declined; more importantly, these viruses may not have peaked and are currently contributing to respiratory illness in Los Angeles County.

**Acknowledgments:** Acute Communicable Disease Control would like to thank all of the laboratorians, infection preventionists, school and facility personnel, Community Health Services staff, medical examiners, medical records personnel, nurses and physicians, and others who report cases, obtain information, control outbreaks, provide vaccine, and are an integral part in the surveillance and control of influenza, and other respiratory diseases, in Los Angeles County. This report is dedicated to them.