



Public Health Division Influenza Report

2009-2010 Weekly Influenza Surveillance Report

Updated: Monday December 28, 2009

Weekly updates will resume on Monday January 4, 2010



Weekly Snapshot

A total of 490 hospitalized persons or persons in intensive care units (ICU) with laboratory-confirmed H1N1 were reported from week 17 (ending 5/2/09) to week 51 (ending 12/26/09) in Sacramento County. During week 51 an additional 4 hospitalized persons or persons in intensive care units were reported. Although influenza activity remains widespread the decline in hospitalizations, persons in ICU, deaths and number of schools reporting absenteeism rates greater than 10% suggest that activity may be leveling. It is not known at this time however if countermeasures will prevent a third wave of H1N1 from occurring.

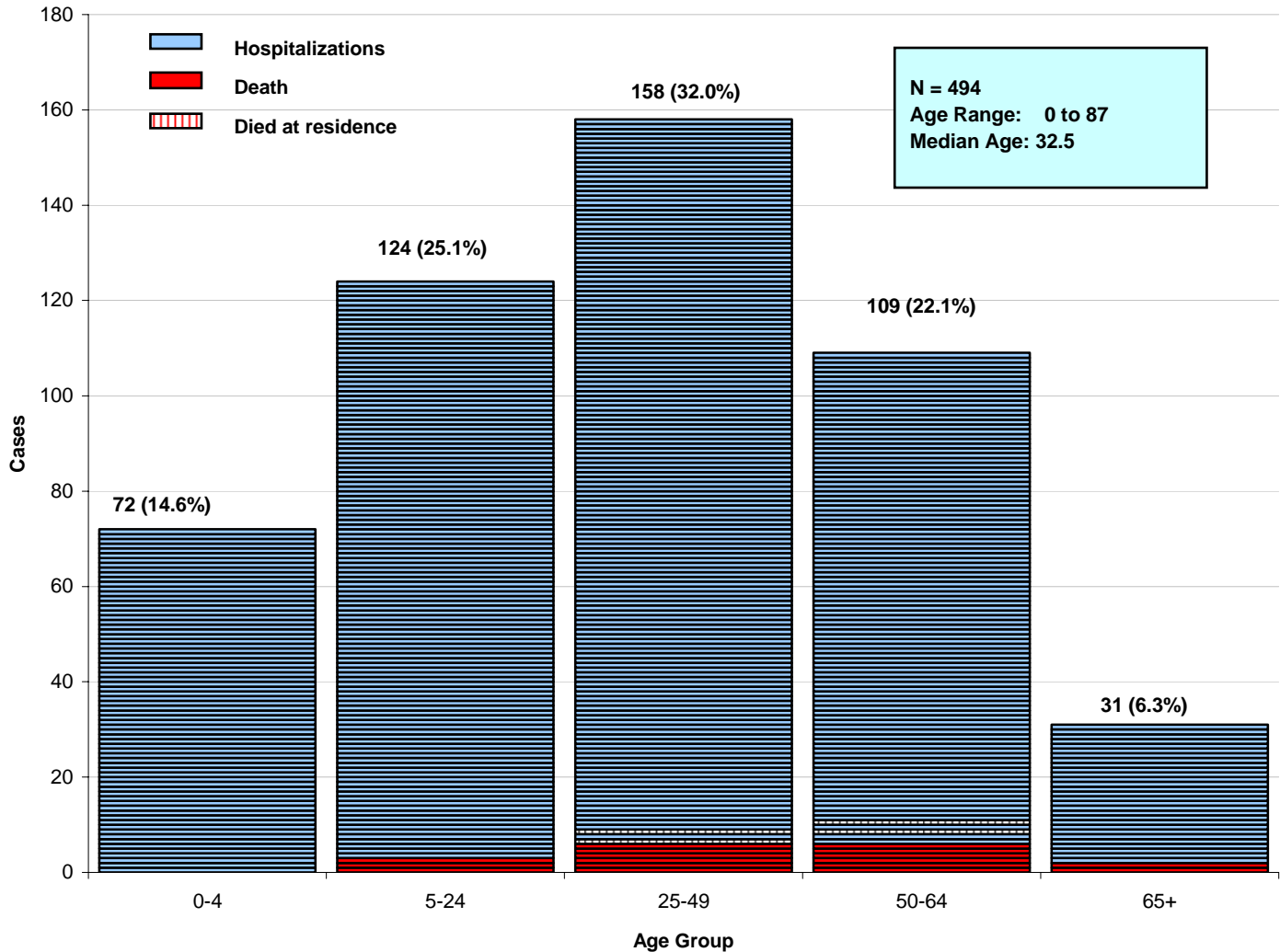
As of December 26, 2009 the majority of laboratory confirmed H1N1 hospitalized persons or persons in intensive care units were between the ages of 25 to 49 years (32.0%), followed by persons ages 5 to 24 years (25.1%). A total of 71.7% (nearly 3 out of 4) H1N1 hospitalized persons or persons in intensive care units were less than 50 years of age. As of December 26, 2009 twenty one Sacramento County residents with H1N1 influenza have died. Of the 21 H1N1 deaths 4 were not hospitalized. During week 51, no H1N1 influenza deaths were reported.

Human Cases of H1N1 Influenza

Updated December 28, 2009

H1N1	Confirmed
Total H1N1 Cases	494
Hospitalizations	490
Non-Hospitalized Deaths	4
Hospitalized Deaths	17

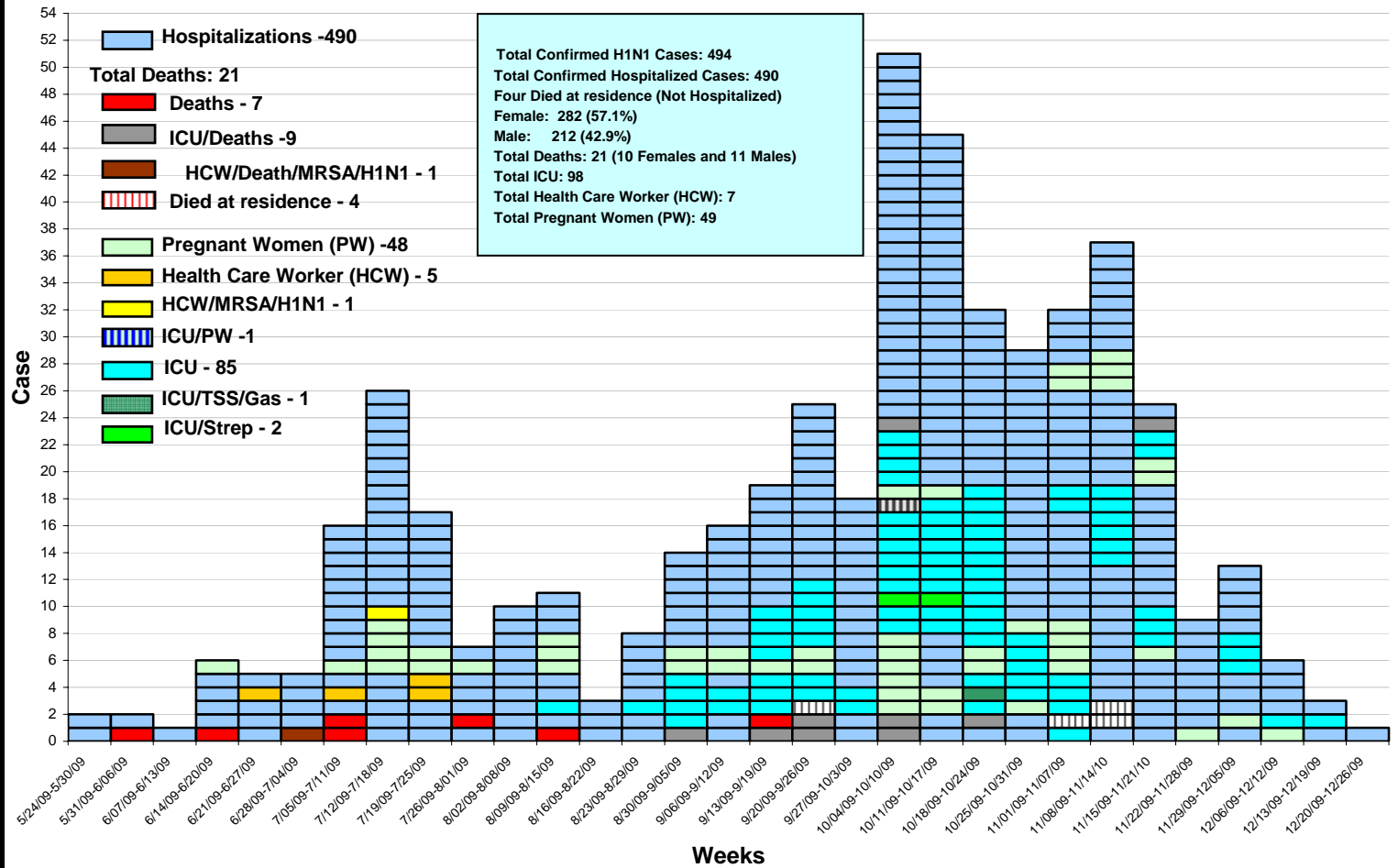
H1N1 Hospitalizations by Age Group, Sacramento County Updated December 28, 2009



Epidemiological Curve of Hospitalizations & Deaths by Week of Onset:

The epidemic curve below for laboratory confirmed H1N1 hospitalized persons or persons in intensive care units suggest person to person transmission. The epidemic curve shows dates of onset for hospitalized persons or persons in intensive care units with H1N1 occurring from May 27, 2009 to December 26, 2009. This curve shows the initial increase in the number of hospitalized persons or persons in intensive care units occurred the week of July 12, 2009 to July 18, 2009 (n=26). Of the 26 hospitalized or ICU H1N1 cases reported during this week, 4 were pregnant women and 1 case was a health care worker co-infected with Methicillin Resistant Staphylococcus Aureus (MRSA). To date we have 5 H1N1 hospitalized cases with co-infections. The epidemiological curve also shows the peak number of cases (n=96) occurred during the weeks of October 4, 2009 to October 17, 2009. Of the 96 hospitalized or ICU H1N1 influenza cases during the peak, 11 were pregnant women, 24 cases were in ICU and 3 ICU cases died. Of the hospitalized residents and residents who died, 42.9% were male and 57.1% were female.

H1N1 Hospitalizations and Deaths by Week of Onset Sacramento County, Updated December 28, 2009



Map of H1N1 Influenza Hospitalizations:

Of the laboratory confirmed H1N1 hospitalizations and ICU cases the majority occurred among residents who lived in zip codes 95823 (Florin/Sacramento), 95820 (Oak Park), 95660 (North Highlands), 95838 (Del Paso Heights), 95824 (Fruitridge), 95828 (Florin) and 95822 (Sacramento). Although some communities clearly show higher numbers of H1N1 cases it is important to highlight that numbers displayed in the map may be an underestimate of the true number of H1N1 hospitalizations in Sacramento County. Zip code areas with higher numbers of H1N1 cases may reflect higher levels of poverty, higher levels of high density housing or higher concentrations of sub-populations disproportionately impacted by higher levels of chronic disease including diabetes, asthma and lung disease. Regarding poverty, in five of the zip code areas with high H1N1 numbers (95820, 95823, 95660, 95838 and 95824) 16% to 50% of families live at or below the poverty level and 8% to 53% of individuals are unemployed. H1N1 virus can penetrate deep into the lungs and cause viral pneumonia. Communities with surges in viral pneumonia cases may be challenged to test for H1N1. In communities with these characteristics the size of the outbreak can quickly exceed the capacity to ascertain and conduct testing of patients. As a result the map below should be interpreted with caution.

Weekly School Absenteeism Reporting Results:

In Sacramento County 100% of the school districts report weekly to the Public Health Division excused absences at the school and district level. Epidemiology services staff calculate the median and range for each school weekly. Schools are asked to report daily if their absenteeism rate exceeds 10% on any given day, to date; schools have reported exceeding 10% absenteeism 69 times and on 22 occasions schools have reported greater than 20% absenteeism. Due to variations in Christmas holiday school schedules schools did not report during the week of December 20, 2009 to December 26, 2009.

Average Daily Absenteeism* for Schools with Enrollments of >= 100 Students

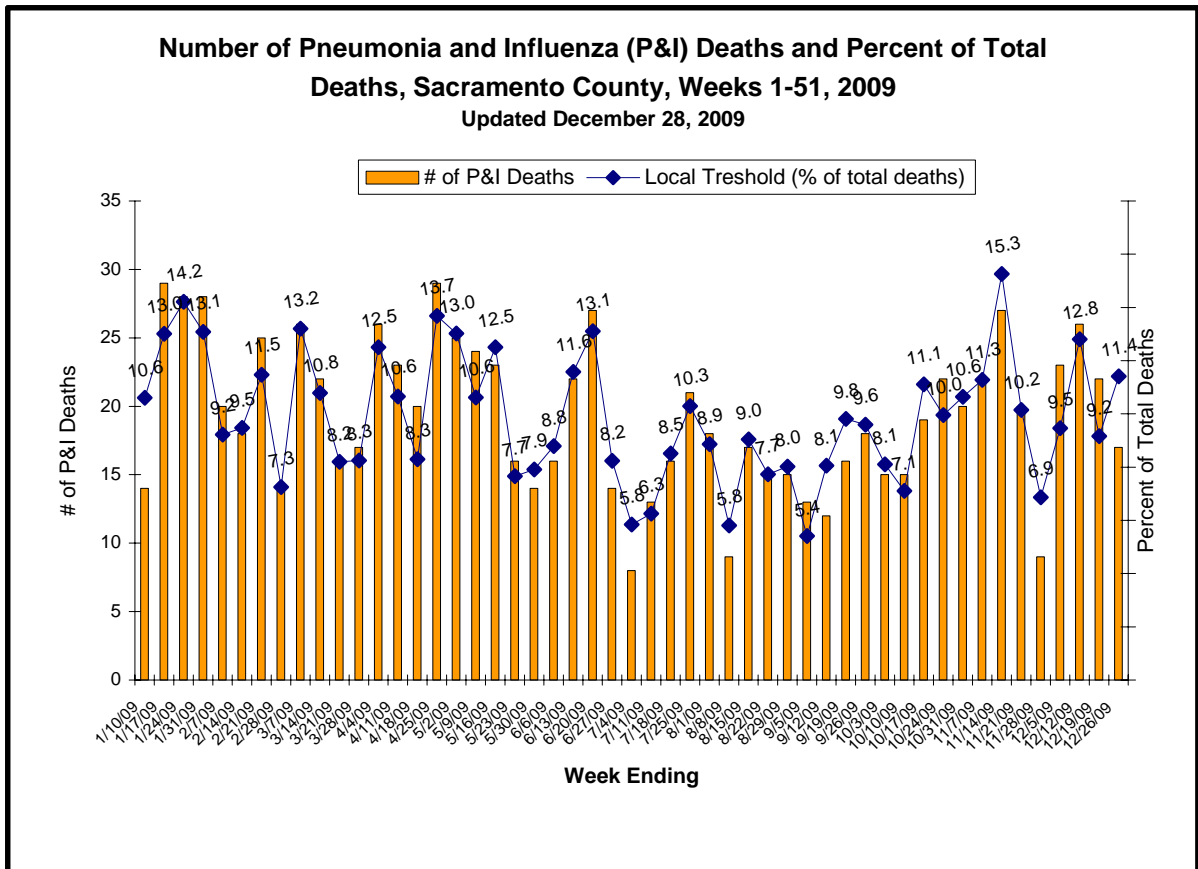
Updated December 28, 2009

Median	Range	No. of Schools Reporting >10% Absenteeism	No. Schools Reporting	Week Ending
2.0%	0.1%-9.0%	N/A	131	9/12/2009
1.6%	0.2%-5.8%	0	100	9/19/2009
1.8%	0.0% - 9.5%	0	125	9/26/2009
1.8%	0.0% - 6.1%	0	119	10/03/2009
2.6%	0.0% - 12.2%	2	157	10/10/2009
2.9%	0.3% - 14.6%	4	207	10/17/2009
2.9%	0.5%-36.2%	13	161	10/24/2009
2.5%	0.4%-37.0%	11	197	10/31/2009
2.7%	0.3%-40.9%	13	184	11/07/2009
2.5%	0.4% - 41.5%	14	203	11/14/2009
2.5%	0.6% - 21.7%	3	131	11/21/2009
N/A	N/A	N/A	N/A	11/28/2009
2.6%	0.2% - 22.5%	3	113	12/5/2009
2.5%	0.4% - 23.6%	3	205	12/12/2009
2.6%	0.0% - 16.2%	3	94	12/19/2009
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*A school can file a waiver to recoup the average daily attendance (ADA) loss from an occurrence such as an epidemic (Education Code Section 46392[a] [4]).

Weekly Pneumonia and Influenza Deaths:

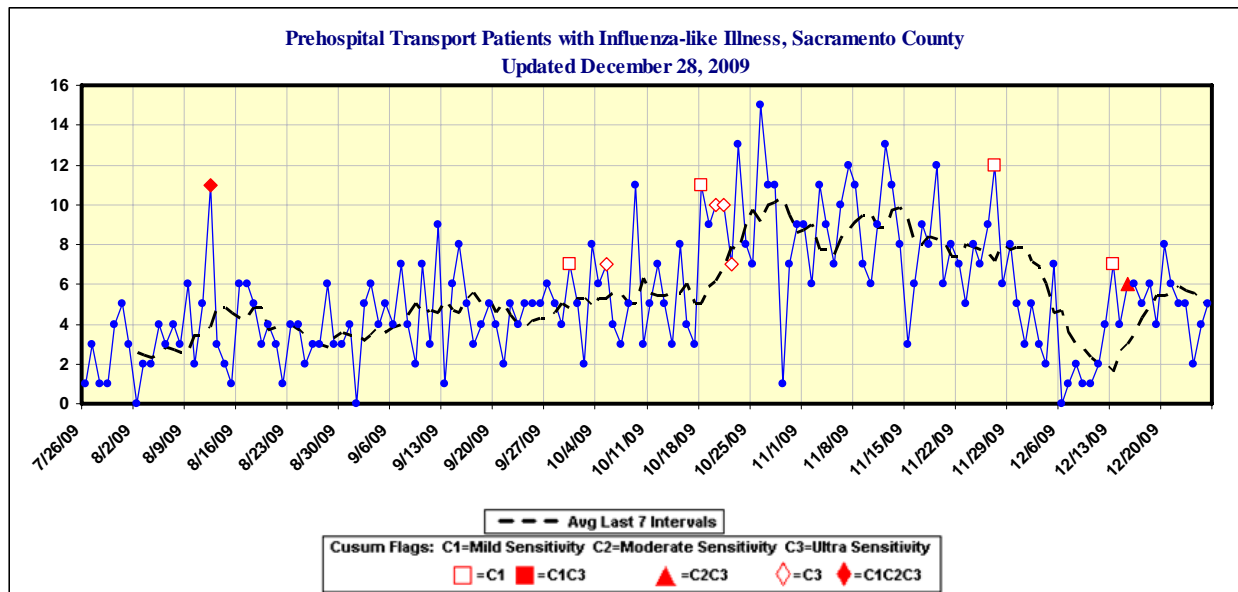
During week 51, 11.4% of all deaths were attributed to pneumonia or influenza. At the national level the percent of all deaths attributable to pneumonia and influenza have not been reported yet. During week 50, 9.2% of Sacramento County deaths were attributed to pneumonia or influenza. The national epidemic threshold during week 50 was 7.2% for that week. During the peak of flu season, the national epidemic threshold typically ranges from 7.5 – 8.0%. The average epidemic threshold for the current year in Sacramento County is 9.9%.



Weekly Counts: Pre-hospital Transport Patients with Influenza Like-Illness

Flu-Surge software estimates up to 4,950 pandemic influenza hospitalizations in Sacramento County (population=1,433,187). Emergency Medical Services (EMS) is critical to manage this volume. Due to the recent H1N1 influenza outbreak we used EMS data to monitor pre-hospital Influenza-like illness (ILI) activity to assist multiple agencies with predicting the spread of H1N1 influenza and to enforce the use of countermeasures. The graph below shows the daily counts of pre-hospital transport patients with ILI from the Sacramento Fire Department and Sacramento Metropolitan Fire Department. Together both agencies account for approximately 90% of all fire calls in Sacramento County.

Epidemiology Services used CuSum statistical methods to indicate recent changes or deviations in ILI counts by comparing daily ILI counts to a 7-day moving average. From July 26, 2009 to December 26, 2009 the Early Aberration Reporting System (EARS) was used to detect weekly increases in ILI pre-hospital transports. Aberrations (C1, C2, C3 flags) were detected in 31.8% (7/22) of the reporting weeks and 6.4% (10/154) of the reporting days. Of the significant increases 40.0% (4/10) occurred during the week of October 18, 2009. During the month of October the peak number of H1N1 hospitalizations also occurred. Further during the month of October 50% (5/10) of the significant increases in ILI pre-hospital transports occurred. The graph below shows statistically significant increases in ILI pre-hospital transportations on 8/12/09 (n=11), 9/30/09 (n=7), 10/5/09 (n=7), 10/18/09 (n=11), 10/20/2009 (n=10), 10/21/2009 (n=10), 10/22/09 (n=7), 11/27/09 (n=12), 12/13/09 (n=7) and 12/15/09 (n=6). The day with the highest number of pre-hospital patient transports with influenza like illness occurred on 10/26/2009 (n=15).



*Data above generated using the Centers for Disease Control and Prevention Early Aberration Reporting System (EARS).