



Dallas County Health and Human Services 2009-2010 Influenza Surveillance Program

2009-2010 Influenza Season Final Report

**2009 H1N1 Influenza virus has also been referenced as novel influenza A (H1N1) or as swine-origin influenza virus (S-OIV)*

Epidemiologic Overview

- RSV activity continues to decline in the area, with 0.3 % of RSV tests from North Texas surveillance sites positive for RSV.
- Low levels of influenza activity were reported in Dallas County, with the percentage of positive influenza tests from surveillance sites decreasing to 1.5% during week 19.
- No new hospitalizations of Dallas County residents with confirmed 2009 H1N1 were reported during week 19. Since April 2009, 541 Dallas County residents with confirmed H1N1 infection have been hospitalized. About 80% of these patients have had underlying high-risk medical conditions for more severe disease from influenza.
- Of the 27 reported H1N1-associated deaths in Dallas County residents since April 2009, nineteen (73%) have occurred in persons with underlying high-risk medical conditions.
- The 2009 H1N1 influenza virus continues to be the predominant influenza strain currently circulating in Dallas County, comprising 100% of recently subtyped influenza A specimens. A few cases of influenza B have been confirmed in Dallas County.
- Two oseltamivir-resistant H1N1 viruses have been identified in residents of Dallas County. Both cases had exposure to oseltamivir prophylaxis prior to identification of oseltamivir-resistance.

Figure 1. Influenza Laboratory Surveillance: Dallas County Providers, Hospitals, & Viral Labs

Week Ending	Mar 20	Mar 27	Apr 3	Apr 10	Apr 17	Apr 24	May 1	May 8	May 15
CDC Week	11	12	13	14	15	16	17	18	19
# Influenza Tests Performed Weekly	724	663	511	554	260	196	169	160	135
# Total Positive Influenza Tests	28	25	23	9	9	3	0	0	2
% Positive Influenza Tests	3.9	3.8	4.6	1.6	3.5	1.5	0	0	1.5
# Positive A Influenza¹	26	23	20	9	8	2	0	0	0
# Positive B Influenza	2	2	3	0	1	1	0	0	2
# Non-differentiated Influenza²	0	0	0	0	0	0	0	0	0
# Influenza Hospitalizations³	3	2	3	2	0	0	0	0	0
# Influenza-associated Deaths⁴	0	0	0	0	0	0	0	0	0
# Influenza-associated Deaths of non-Dallas County Residents⁵	0	0	0	0	0	0	0	0	0

¹Further subtyping results are performed only for specimens referred by institutions for PCR-testing (see figure 4).

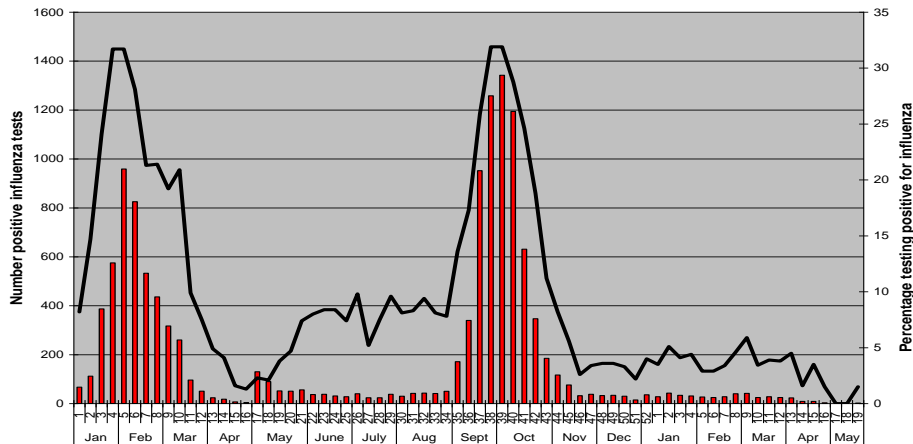
²Non-differentiated refers to institutional rapid test results which did not differentiate between influenza A and B.

³Reflects all influenza-associated hospitalizations reported from hospitals located within Dallas County. Approximately one-third of these hospitalizations involve patients who reside outside of Dallas County.

⁴Reflects deaths reported of residents of Dallas County with laboratory-confirmation of influenza by rRT-PCR.

⁵Reflects deaths of non-Dallas County residents occurring in Dallas County hospitals. Since April 2009, there have been ten confirmed H1N1-associated deaths reported of non-Dallas County residents from hospitals located within Dallas County.

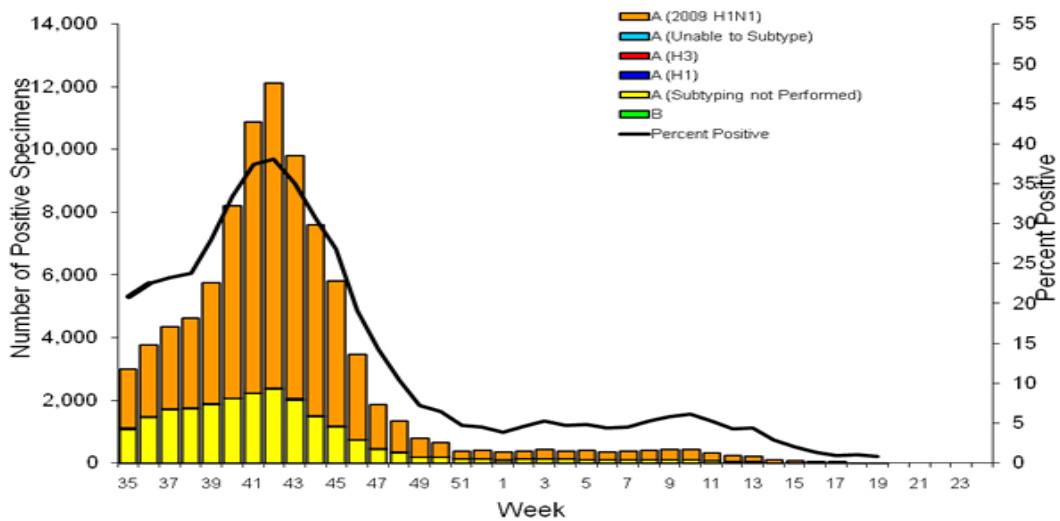
Figure 2. Number and Percentage Positive Influenza Tests by Week, Dallas County: 2008-09 and 2009-10 Seasons



Data for Week 19 obtained from the same surveillance sites as designated for DCHHS' seasonal influenza program, with over 20 participating Dallas area hospitals, urgent care centers, and sentinel providers. Data from additional community sources submitted during Week 19 are not included in the above tabulations, in order to more accurately assess trends.

Figure 3. Number and Percentage of Positive Influenza Tests by Week, US: WHO/NREVSS 2009-10 Season*

Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2009-10



(*<http://www.cdc.gov/flu/weekly/>)

From CDC FluView report* for Week 19 (May 9, 2010 – May 15, 2010) in United States:

- 0.9% of specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories and reported to CDC/Influenza Division were positive for influenza.
- All of the four subtyped specimens were influenza A (H1N1).
- The proportion of deaths attributed to pneumonia and influenza (P&I) was at the epidemic threshold.
- No influenza-associated pediatric deaths were reported.
- The proportion of outpatient visits for influenza-like illness (ILI) was 0.8% which is below the nation baseline of 2.3%. All 10 regions reported ILIL below region-specific baseline levels.

Figure 4. Dallas County LRN Influenza A PCR Test Results: 4/23/09 –5/15/2010**

	April 24- Jun 27	June 28- Aug 29	Aug 30- Oct 31	Nov 1- Jan 2	Jan 3 – May 15
CDC Week	16-25	26-34	35-43	44-52	1-19
Influenza A (Total Positive PCR Tests)	322	181	586	115	105
Subtype					
Seasonal H1N1	16 (4.9%)	0	0	0	0
Seasonal H3N2	32 (9.9%)	1* (0.5%)	0	0	0
2009 H1N1	274 (85%)	180 (100%)	586 (100%)	115 (100%)	105 (100%)
PCR-Negative Specimens	745	16	189	227	335

*Reported from a Dallas County resident with recent travel from India during incubation period.

**DCHHS has also been conducting PCR for influenza B on a subset of submitted samples, with 1 being identified during week 8.

Please Report any of the Following Influenza Patients to DCHHS at (214) 819-2004 within 1 working day:

- Hospitalized patients with influenza (any subtype) confirmed by any laboratory test (rapid antigen, culture, PCR, DFA/IFA performed in outpatient or inpatient laboratory).
- Deaths of persons with confirmed influenza (any subtype). We are requesting all pediatric influenza-associated deaths to be reported *immediately* to facilitate specimen procurement and testing.
- Suspected influenza infections involving a resident of any Long Term Care facility (please report *immediately*), or institutional outbreaks.

Figure 5. NREVSS Surveillance Data, North Texas: Number and Percent Positive RSV Tests, December 2008 – May 15, 2010

	Mar 20	Mar 27	Apr 3	Apr 10	Apr 17	Apr 24	May 1	May 8	May 15
CDC Week	11	12*	13	14	15	16	17	18*	19*
# Tests Performed Weekly	572	485	408	434	406	375	408	322	363
# Total Positive RSV Tests	59	45	23	21	20	16	7	0	1
% Positive RSV Tests	10.3	9.3	5.6	4.8	4.9	4.3	1.7	0.0	0.3

* Indicates preliminary data which is subject to change, as adjustments are made for late-arriving data

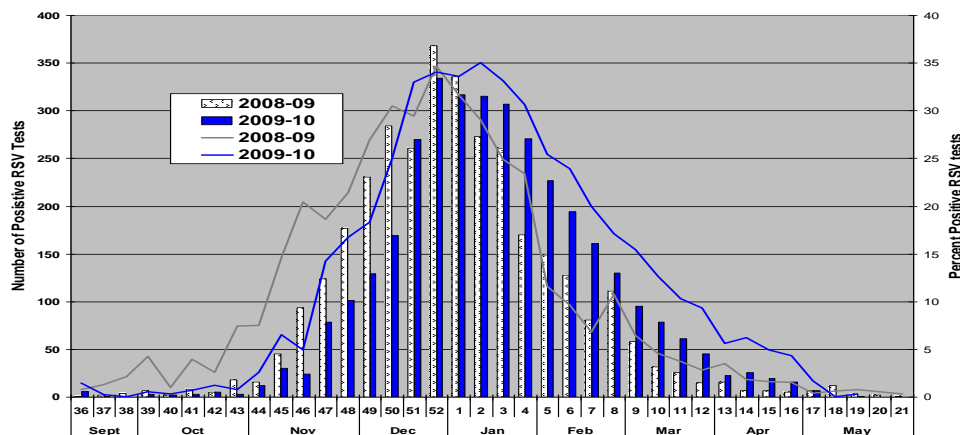
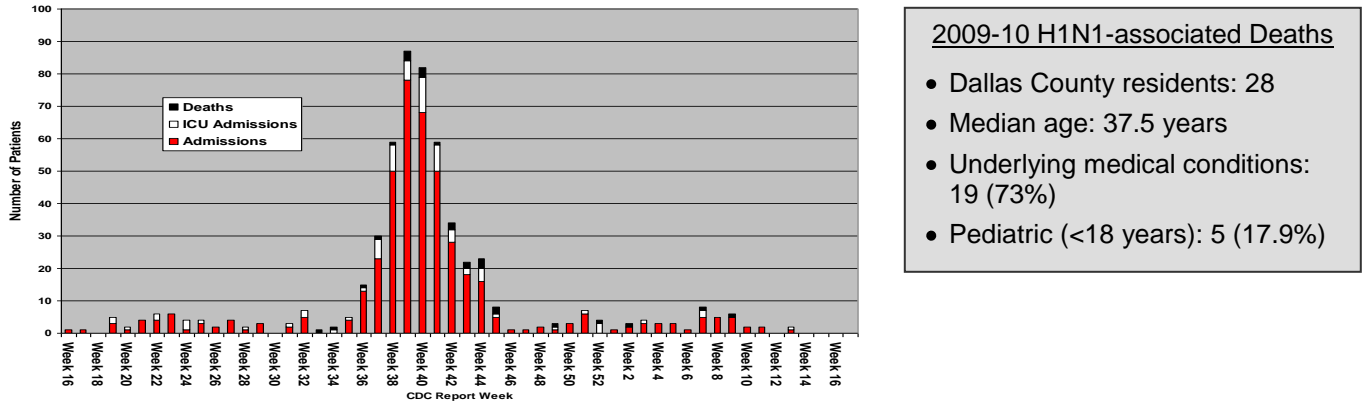


Figure 6. Hospitalized Confirmed Novel H1N1 Cases by Date of Admission, Dallas County April 23, 2009 – May 15 2010* (N=541)



*Includes only inpatients with reported residence in Dallas County, with PCR-confirmed H1N1. See Figure 1 for hospitalization totals which include of out-of-county patients referred to surveillance hospitals.

Figure 7. Age Distribution of Hospitalized Confirmed Novel H1N1 Cases, Dallas County, April 23, 2009 – May 15 2010

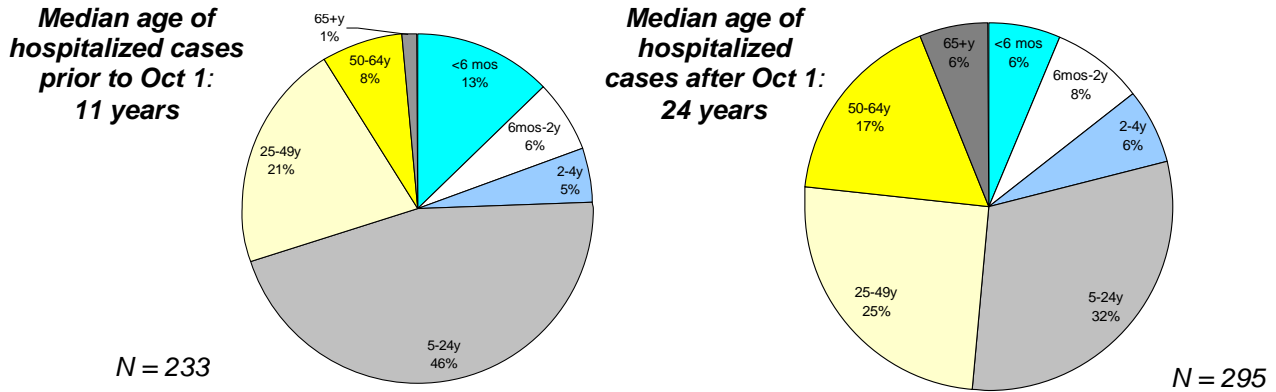
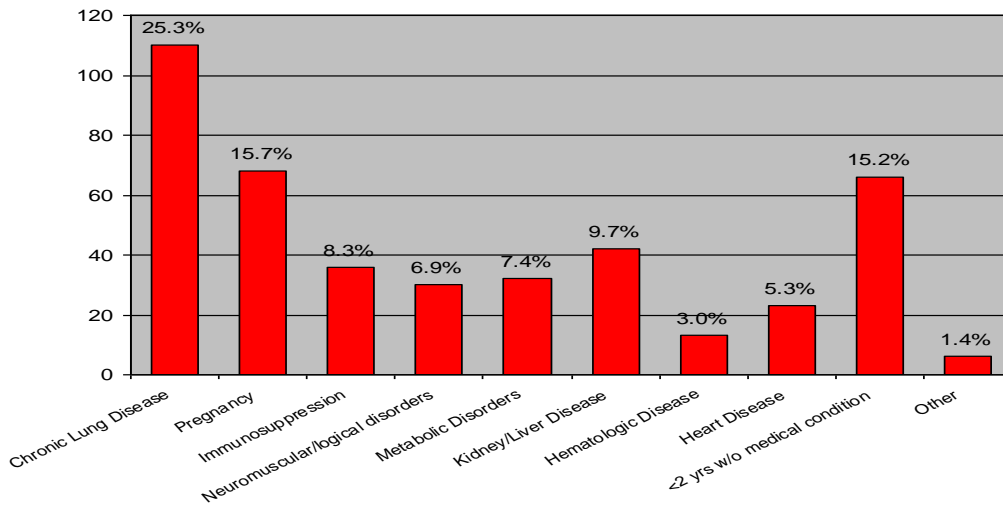


Figure 8. Percent of Hospitalized Confirmed H1N1 Cases with a Known Underlying Medical Condition, Dallas County, April 23, 2009 – May 15 2010

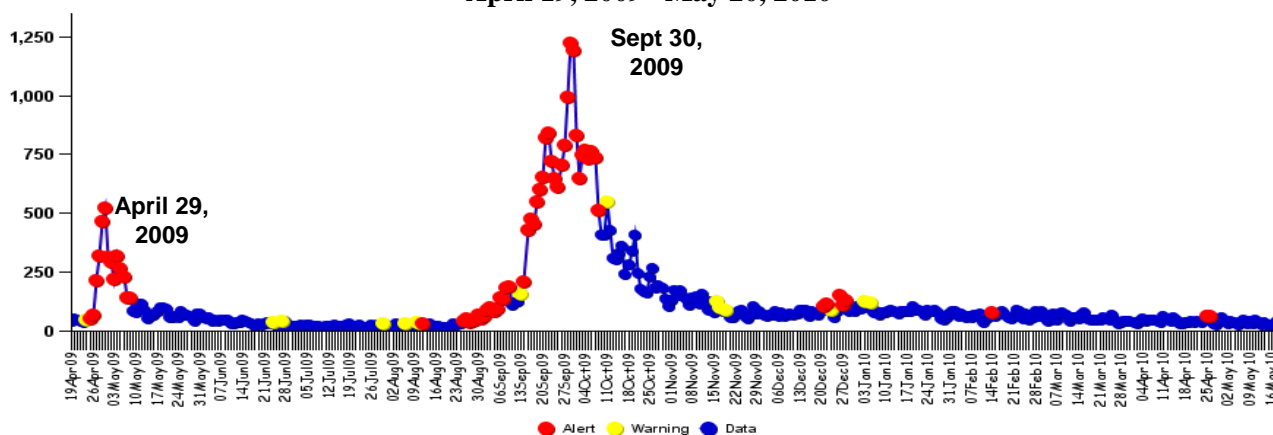


**Categories are not mutually exclusive

**Figure 9. Characteristics of Hospitalized 2009 H1N1 Cases, Dallas County*:
April 23, 2009 – May 15 2010 (N = 541)**

Characteristics of Cumulative Hospitalized H1N1 Patients (As of Week 17; N = 541)		Characteristics of H1N1 ICU Admissions (As of Week 17; N = 73)		
Gender	43% Male; 57% Female	Age	< 18 yrs	31 (43.6%)
Race/Ethnicity	43% Hispanic, 25% Black, 14% White		18 - 50 yrs	23 (31.5%)
Median Duration Admission (Range)	5.5 days (1–104 days)		> 50 yrs	19 (26.0%)
Primary Reason for Admission	Asthma Exacerbation (44), Pneumonia (72), Respiratory Distress (56), Seizure (6), Encephalopathy (3)	Median Duration Admission	6 days (1-104 days)	
23 Hour Observations Fetal Monitoring	89 (16.5%) 34/89 (38.2%)	Mechanical Ventilation	45 (61.6%)	
ICU Admissions	73 (13.5%)	BIPAP	7 (9.6%)	
Deaths	27	Underlying Medical Conditions	Asthma, CLD	18 (24.7%)
			Neurological	11 (15.5%)
			Pregnant	3 (4.1%)
			None prior	15 (20.5%)

**Figure 10. ESSENCE Syndromic Surveillance for Influenza-like Illness: Dallas County,
April 19, 2009 – May 20, 2010**



Data obtained from hospitals participating in the Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) from January 2008 through the present. Depicted are the numbers of persons presenting to Emergency Departments in 22 Dallas County hospitals with self-reported chief complaints of influenza-like illness.

Figure 11. Antiviral Resistance of Influenza Isolates: United States, 2009-10 Season*

*www.cdc.gov/flu/weekly

Antiviral Resistance Testing Results on Samples Collected Since September 1, 2009.

	Samples tested (n)	Resistant Viruses, Number (%)		Samples tested (n)	Resistant Viruses, Number (%)	
		Oseltamivir	Zanamivir		Samples tested (n)	Resistant Viruses, Number (%)
Seasonal Influenza A (H1N1)	1	1 (100.0)	0	0 (0)	1	0 (0)
Influenza A (H3N2)	13	0 (0)	0	0 (0)	14	14 (100.0)
Influenza B	23	0 (0)	0	0 (0)	N/A*	N/A*
2009 Influenza A (H1N1)	4,733	54† (1.1)	1,819	0 (0)	1,830	1,826 (99.8)

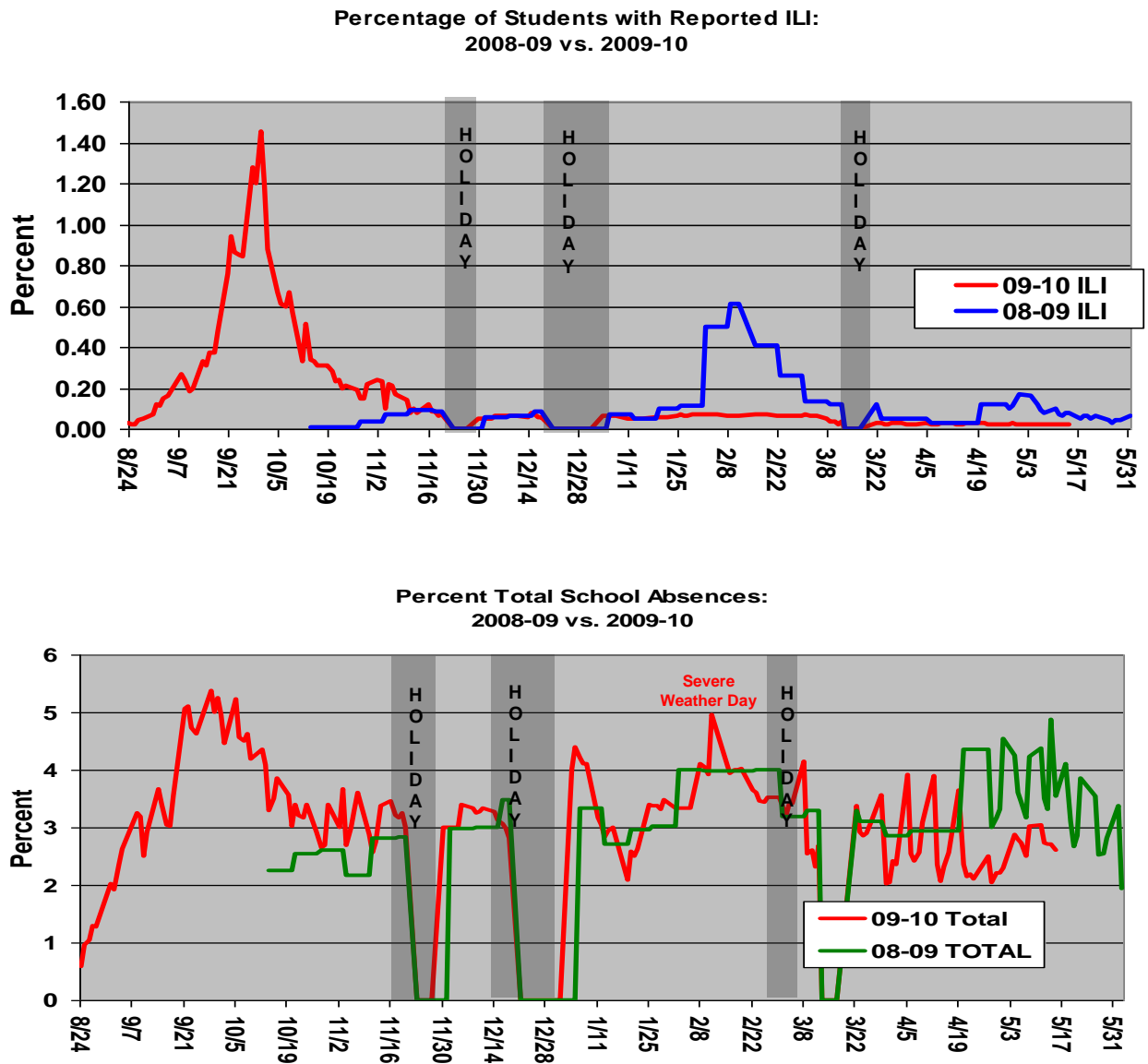
*The adamantanes (amantadine and rimantadine) are not effective against influenza B viruses.

†Two screening tools were used to determine oseltamivir resistance: sequence analysis of viral genes or a neuraminidase inhibition assay.

*Additional laboratories perform antiviral resistance testing and report their results to CDC. Three additional oseltamivir resistant 2009 influenza A (H1N1) virus has been identified by these laboratories since September 1, 2009, bringing the total number to 57.

- Two oseltamivir-resistant H1N1 viruses have been identified in residents of Dallas County. Both cases had exposure to oseltamivir prophylaxis prior to identification of oseltamivir-resistance.
- A total of 61 cases of antiviral resistance have been identified in the U.S. since April, 2009. Forty-nine of the 61 cases had documented previous exposure to oseltamivir either through treatment or chemoprophylaxis.

Figure 12. Percentage of Total Student Absences and Percentage of Absences due to Influenza-like Illness: Reported from 14 Independent School Districts in Dallas County: 10/18/08 – 5/08/10



- School absences and influenza-like illnesses are reported voluntarily from 14 Independent School Districts, representing over 510 elementary, middle, and secondary schools and over 420,000 students in Dallas County.
- Data are submitted from additional charter and private schools on a voluntary basis
- Data trends are also followed on an individual basis by school and an aggregate basis by districts
- No school dismissals due to influenza have occurred in Dallas County during 2010.

Please send inquiries to DCHHS: Influenza@dallascounty.org

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