

Texas Influenza Surveillance Report 2014–2015 Season/2015 MMWR Week 04

(January 25, 2015 – January 31, 2015)

Report produced on 2/06/2015

Summary

Texas influenza laboratory data and influenza-like illness (ILI) indicators have demonstrated a decrease in influenza activity for the last several weeks. However, influenza activity remains elevated across the state of Texas. ILI activity remains above the 2014-2015 state ILINet baseline of 5.42%. It appears that influenza activity peaked during week 51 (week ending Dec. 20, 2014) in Texas.

Table 1: Summary of Texas Influenza (Flu) and Influenza-like Illness (ILI) Activity for the Current Week

Texas Surveillance Component	Change from Previous Week	Current Week	Previous Week [†]	Page of Report
Statewide influenza activity level reported to CDC (geographic spread of influenza)	Decreased	Regional	Widespread	--
Statewide ILINet Activity Indicator assigned by CDC (intensity of influenza-like illness)	No change	High	High	--
Percentage of specimens positive for influenza	▼2.60%	17.95%	20.55% [†]	1
Percentage of visits due to ILI (ILINet)	▼1.78%	9.00%	10.78% [†]	3
Number of regions reporting increased flu/ILI activity	▼3	0	3	5
Number of regions reporting decreased flu/ILI activity	▲3	5	2	5
Number of variant/novel influenza infections	No change	0	0	5
Number of ILI/influenza outbreaks	▼5	3	8	5
Number of pediatric influenza deaths	New Case Reported	1	1	6

[†]Data displayed have been updated since last week's flu report with any new reports received.

Laboratory Results

Influenza

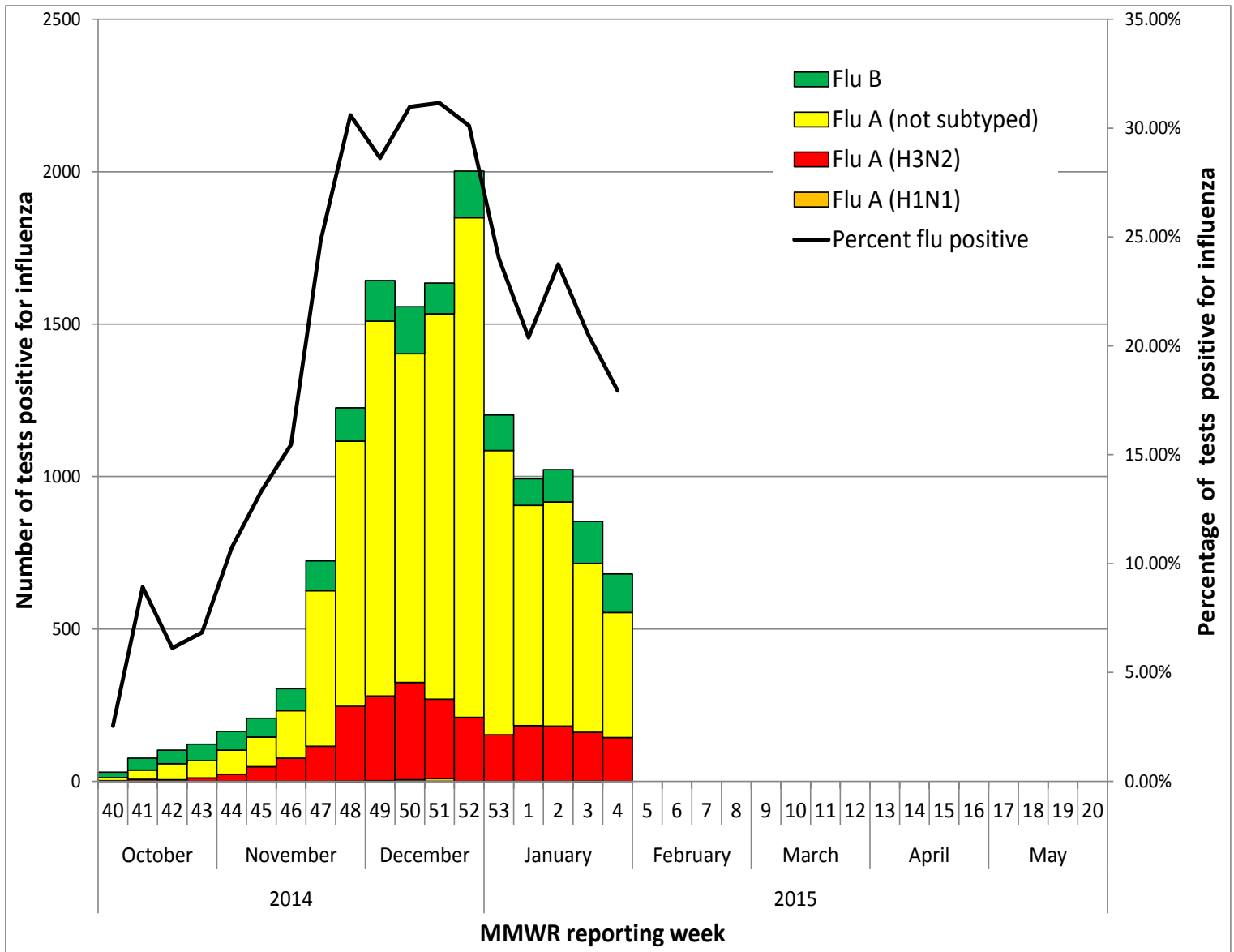
Hospital laboratories across Texas voluntarily report influenza tests (antigen, culture, and PCR) to the National Respiratory and Enteric Virus Surveillance System (NREVSS). Providers throughout Texas also submit specimens for influenza testing (PCR) to Texas public health laboratories, including the Texas Department of State Health Services (DSHS) state laboratory in Austin and the nine Texas Laboratory Response Network (LRN) laboratories. The results reported by Texas NREVSS participants and public health laboratories for the current week is summarized in the table below. Additional influenza test results (rapid tests, culture, PCR) and ILI activity were reported from providers and public health departments throughout the state (see county map at the end of this report).

Table 2: Influenza Testing Performed by Texas Laboratories for the Current Week

	Week 04
Number of labs reporting flu tests	18
Number of specimens tested	3789
Number of positive specimens (%) [†]	680 (17.95%)
Percentage of total tests that were antigen detection tests	65.69%
Positive specimens by type/subtype [n (%)]	
Influenza A	554 (81.47%)
Subtyping performed	144 (25.99%)
A (H1N1)	0 (0.00%)
A (H3N2)	144 (100.00%)
Subtyping not performed	410 (74.01%)
Influenza B	126 (18.53%)

[†]Laboratory data in 2014-2015 season reports may not be comparable to reports from previous seasons because of the inclusion of DSHS and LRN laboratory data for the current season.

Figure 1: Number and Percentage of Tests (Antigen, Culture, PCR) Positive for Influenza by Type and Subtype Reported by Texas Laboratories, 2014–2015 Season



Other Respiratory Viruses

The NREVSS system collects information on a variety of respiratory viruses in addition to influenza including parainfluenza virus, respiratory syncytial virus (RSV), rhinovirus, human metapneumovirus (HMPV), and respiratory adenovirus. The results for the current week are summarized below.

Table 3: Non-Influenza Respiratory Virus Testing Performed by Texas NREVSS Laboratories for the Current Week

Virus	Number of Laboratories Testing	Tests Performed	Positive Tests	Percentage of Tests Positive
Adenovirus (respiratory)	8	903	42	4.65%
HMPV	7	879	39	4.44%
Parainfluenza virus	8	890	15	1.69%
Rhinovirus	6	667	150	22.49%
RSV ^{T^A}	12	1766	486	27.52%

^TRSV tests displayed in the table are antigen detection tests only. Some non-NREVSS reporters also contribute to the RSV data.

^ANumbers and percentage may differ from the weekly RSV report. The weekly RSV report may be accessed at <https://www.dshs.state.tx.us/RSV/disease/rsv-Data.aspx>.

Antigenic Characterization

Since September 28, 2014, CDC has reported antigenic characterization results from 22 influenza A (H3N2) viruses and 13 influenza B viruses received from the Texas Department of State Health Services (DSHS) Laboratory. The DSHS Laboratory sends a representative sample of influenza viruses to the CDC throughout the flu season.

Influenza A (H3N2) [22]

- Three (13.6%) viruses were related to A/Texas/50/2012, the influenza A (H3N2) component of the 2014-2015 Northern Hemisphere influenza vaccine.
- Nineteen (86.4%) viruses tested showed reduced titers with antiserum produced against A/Texas/50/2012 and were antigenically similar to A/Switzerland/9715293/2013, the H3N2 virus selected for the 2015 Southern Hemisphere influenza vaccine. A/Switzerland/9715293/2013 is related to, but antigenically and genetically distinguishable, from the A/Texas/50/2012 vaccine virus. A/Switzerland-like H3N2 viruses were first detected in the United States in small numbers in March of 2014 and began to increase through the spring and summer.

Influenza B [13]

- Yamagata lineage [1]: One (7.7%) influenza B/Yamagata-lineage virus has been characterized from Texas. A B/Massachusetts/2/2012-like virus is included as an influenza B component of the 2014-2015 Northern Hemisphere trivalent and quadrivalent influenza vaccines.
- Victoria lineage [12]: Twelve (92.3%) influenza B/Victoria-lineage viruses were characterized as B/Brisbane/60/2008-like, which is included as an influenza B component of the 2014-2015 Northern Hemisphere quadrivalent influenza vaccine.

Antiviral Resistance

Table 4 displays the number of influenza viruses from Texas that have been tested for antiviral resistance since September 28, 2014. No influenza viruses have tested positive for mutations that confers resistance to oseltamivir or zanamivir.

Table 4: Cumulative Antiviral Resistance Results from Texas Influenza Viruses, 2014-2015 Season[†]

	Oseltamivir		Zanamivir	
	Virus samples tested (n)	Resistant viruses, number (%)	Virus samples tested (n)	Resistant viruses, number (%)
Influenza A (H1N1)	0	0 (0%)	0	0 (0%)
Influenza A (H3N2)	5	0 (0%)	5	0 (0%)
Influenza B	0	0 (0%)	0	0 (0%)

[†]This table includes specimens submitted as part of routine surveillance and not for diagnostic purposes.

U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet)

Table 5: Texas ILINet Reporting and Patient Visit Summary for the Current Week

	Week 04
Number of providers reporting [†]	99
Number of providers reporting patient visits	95
Number (%) of providers with at least one ILI case	84 (88.42%)
Percentage of all visits due to ILI	9.00%
Texas ILINet baseline [‡] , 2014–2015	5.42%

[†]Reporting providers include both ILINet and RVSP providers.

[‡]The baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons plus two standard deviations. A “non-influenza week” is defined as a week that accounted for less than 2% of the season’s total number of specimens that tested positive for influenza.

Table 6: Percentage of Visits for Influenza-like Illness Reported by Texas ILINet Providers (as of 2/5/2015 1:30 PM)

Week	Providers Reporting	Number of ILI Cases by Age Group (Years)					Total ILI (all ages)	Total Patients	% ILI
		0-4	5-24	25-49	50-64	65+			
201440	112	160	384	313	112	93	1062	28992	3.66%
201441	112	181	390	312	139	93	1115	30402	3.67%
201442	112	237	430	296	133	94	1190	29486	4.04%
201443	116	210	475	368	136	103	1292	30221	4.28%
201444	114	207	495	363	109	116	1290	28667	4.50%
201445	116	211	522	346	119	90	1288	29162	4.42%

Week	Providers Reporting	Number of ILI Cases by Age Group (Years)					Total ILI (all ages)	Total Patients	% ILI
		0-4	5-24	25-49	50-64	65+			
201446	83	249	387	103	32	22	793	22064	3.59%
201447	110	294	858	426	109	31	1718	26133	6.57%
201448	111	260	702	472	108	45	1587	21456	7.40%
201449	117	376	1015	680	288	221	2580	31410	8.21%
201450	119	459	1576	677	268	209	3189	31306	10.19%
201451	100	556	1611	715	280	210	3372	23802	14.17%
201452	86	416	666	256	133	137	1608	17869	9.00%
201453	96	415	565	750	329	220	2279	17409	13.09%
201501	99	364	752	768	370	310	2564	23008	11.14%
201502	105	445	1312	901	275	92	3025	28659	10.56%
201503	101	447	1335	914	273	99	3068	28457	10.78%
201504	99	364	1130	778	240	84	2596	28842	9.00%

Figure 2: Percentage of Visits Due to Influenza-like Illness Reported by Texas ILINet Participants, 2014–2015 Season

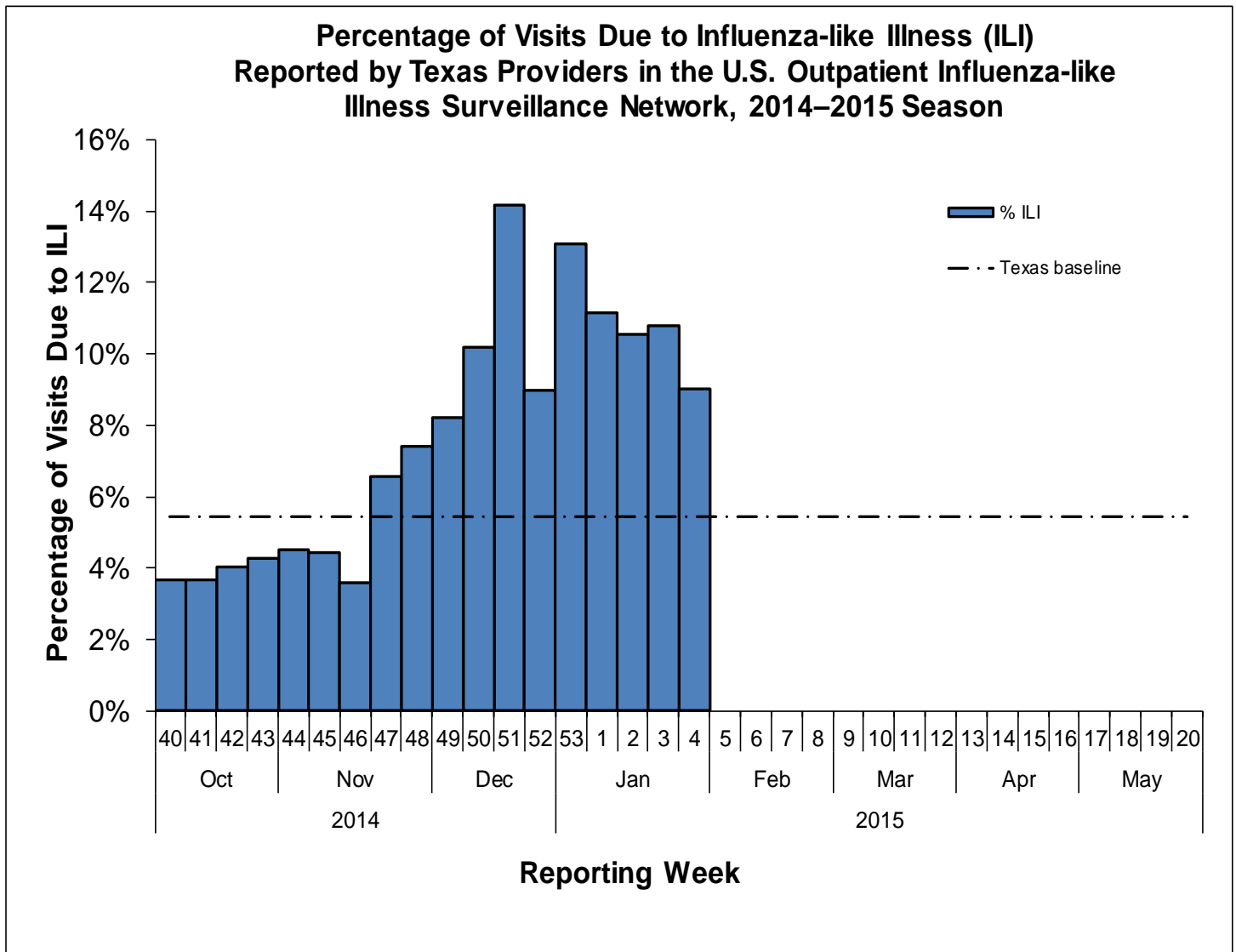
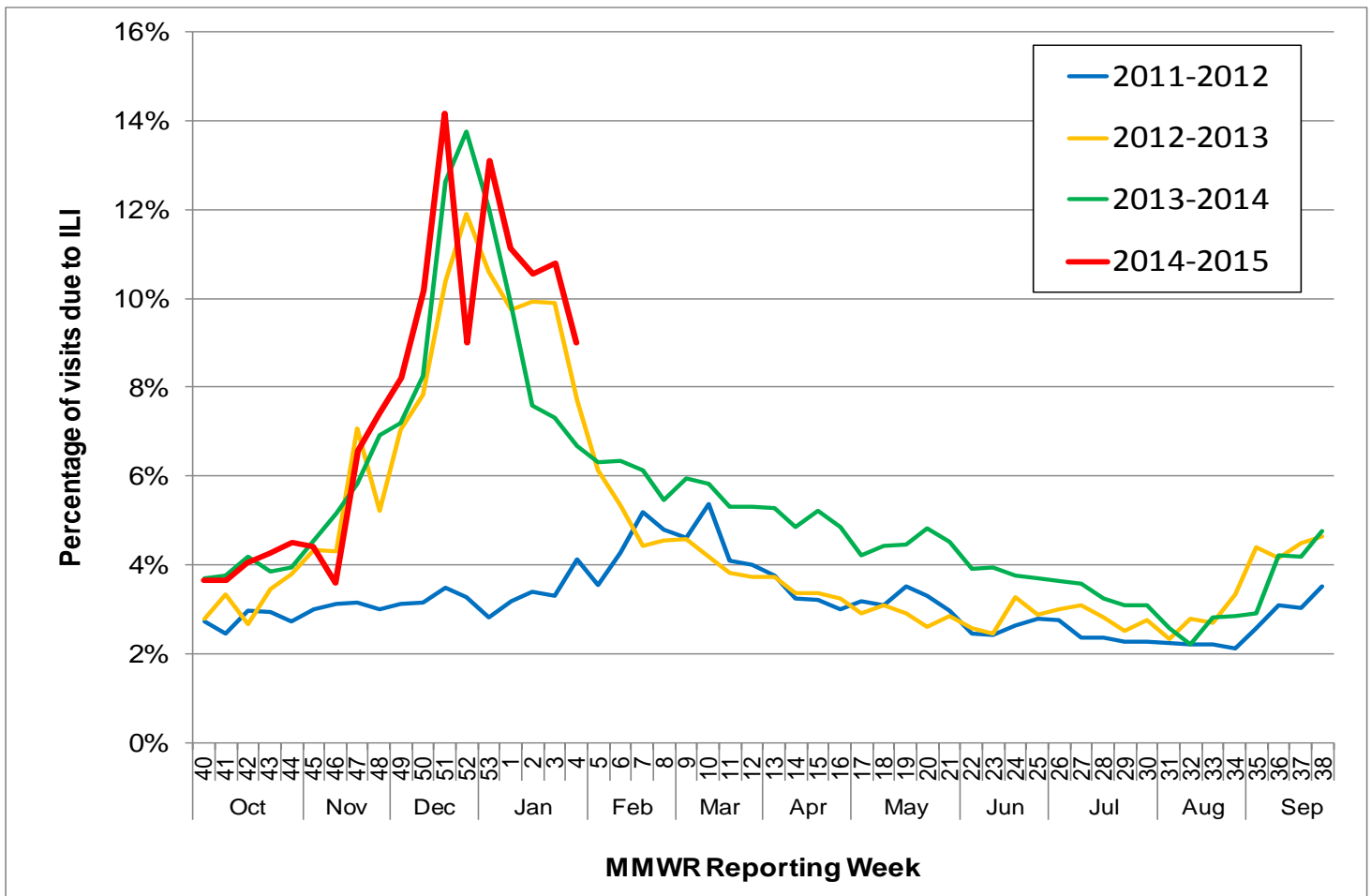


Figure 3: Percentage of Visits Due to Influenza-like Illness Reported by Texas ILINet Participants, 2011–2015 Seasons



Reports from Health Service Regions

Reports were received from all Health Service Regions (HSRs) during week 04. No HSRs reported an increased level of flu activity compared to week 03. HSRs 4/5N, 6/5S, and 7 reported the same level of flu activity compared to week 03. HSRs 1, 2/3, 8, 9/10, and 11 reported a decreased level of flu activity compared to week 03.

Variant Influenza Viruses

No variant or novel influenza viruses have been detected in Texas in 2014 or 2015.

Institutional Outbreaks and School Closures

Three influenza outbreaks in long-term care facilities were reported during week 04.

HSR 7 reported one influenza outbreak in a long-term care facility. The influenza outbreak involved at least two residents. One resident was positive for influenza A via rapid test and the other resident was positive for influenza B via rapid test. Various control measures were implemented at the long-term care facility.

HSR 8 reported two influenza outbreaks in long-term care facilities. One influenza outbreak involved eight people, three residents and five staff. Seven people, three residents and four staff, were positive for influenza A by rapid test. One staff member was positive for influenza B by rapid test. The long-term care facility implemented various control measures such as isolation of ill, staff movement was limited, meals were given and eaten in residents' rooms, and Tamiflu prophylaxis was given to residents. The other influenza outbreak at a long-term care facility in HSR 8 involved seven residents who were positive for influenza A by rapid test. One control measure that the facility implemented was sending symptomatic employees home and allowing them to return after they were 48 hours fever free without the use of fever reducing medicine.

No school closures were reported during week 04.

Influenza-Associated Pediatric Mortality

An influenza-associated pediatric death was reported in week 04 that occurred during week 51. The child was a 13 year old resident of HSR 4/5N with an underlying medical condition. Post mortem specimens from the child were positive for influenza A (not subtyped) by rapid test and respiratory viral culture; a post mortem lung specimen was collected and tested positive for *Staphylococcus aureus*. Antibiotic resistance testing was conducted on the *Staphylococcus aureus* and it was found to be resistant to ampicillin, erythromycin, and penicillin. The child was not vaccinated with this season's influenza vaccine.

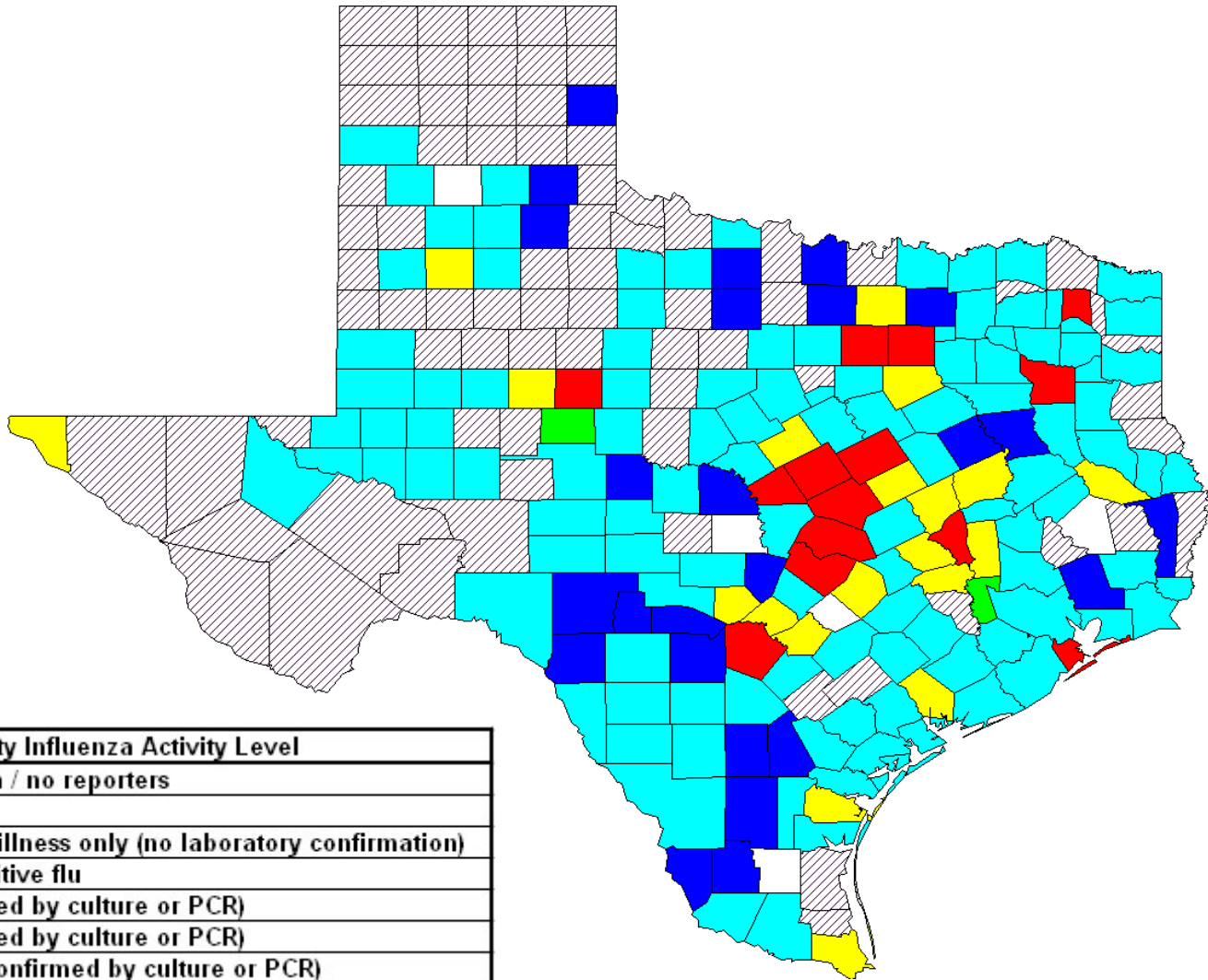
Nine influenza-associated pediatric deaths have been reported in Texas during the 2014-2015 influenza season. Cases of influenza-associated pediatric mortality (children <18 years of age) are reportable year-round and by law in Texas.








Table 7: Influenza-Associated Pediatric Deaths Reported in Texas During the 2014–2015 Season

Month of Pediatric Death	Influenza A (H1N1)	Influenza A (H3N2)	Influenza A (Not Subtyped)	Influenza B	Influenza, Not Typed / Not Differentiated	Influenza virus co-infection: A (not subtyped) and B	Total, All Influenza Types / Subtypes
2014							
October	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0
December	0	1	4	2	0	0	7
2015							
January	0	1	1	0	0	0	2
Total	0	2	5	2	0	0	9

Statewide Influenza Activity Map

Figure 4: Texas Map Displaying the Highest Level of Influenza or ILI Activity Reported by County for the Week Ending January 31, 2015 (MMWR Week 04)



County Influenza Activity Level	
	No information / no reporters
	No activity
	Influenza-like illness only (no laboratory confirmation)
	Rapid test positive flu
	Flu A (confirmed by culture or PCR)
	Flu B (confirmed by culture or PCR)
	Flu A and B (confirmed by culture or PCR)

Please note: The majority of influenza cases are not reportable by law in Texas. This map contains data from sentinel sites and only displays influenza and ILI cases that were reported to public health. Positive laboratory results are reported according to specimen collection date, or date received in the laboratory if the former is unknown.

Texas Influenza Surveillance Components and Measures

Activity codes (see <http://www.cdc.gov/flu/weekly/overview.htm>)

Statewide influenza activity level

A code reported weekly by states and territories to CDC indicating the geographic spread of influenza in the state. Levels are no activity, sporadic, local, regional, and widespread.

ILINet Activity Indicator

A statewide level of influenza-like illness intensity (on a scale of 1-10, with 1 being the lowest level) assigned to each state weekly by CDC based on data reported through ILINet.

Morbidity

Novel/variant influenza

Thorough investigations are performed on all cases of novel/variant influenza. *This condition is reportable by law in Texas.*

Texas ILINet

Providers voluntarily report weekly to CDC's ILINet system on the number of outpatient visits for ILI and total outpatient visits. Providers may submit up to 5 specimens per month for influenza testing. **See <http://www.dshs.state.tx.us/idcu/disease/influenza/surveillance/ILINet/> for information on how to become an ILINet provider.**

Respiratory Virus Surveillance Project (RVSP)

Providers report weekly to ILINet and submit specimens on the first 10 patients seen with ILI each week. Specimens are tested for a variety of respiratory viruses.

ILI activity

Non-ILINet providers report ILI or influenza data weekly to local or regional health departments.

Outbreaks

Healthcare, schools, and childcare facilities report ILI and influenza outbreaks to health departments in Texas. *This condition is reportable by law in Texas.*

Mortality

Influenza-associated pediatric deaths

Deaths that are associated with influenza in children < 18 years of age are reported to health departments in Texas. *This condition is reportable by law in Texas.* <http://www.dshs.state.tx.us/idcu/disease/IAPM/>

Laboratory

DSHS Austin laboratory

Providers voluntarily submit specimens to the DSHS Austin laboratory for influenza PCR testing throughout the season. Providers sign up for this program through their local health departments.

Laboratory Response Network (LRN) laboratories

Providers voluntarily submit specimens to one of the 9 Texas LRNs for influenza PCR testing throughout the season. Providers sign up for this program through their local health departments.

NREVSS

Laboratories voluntarily report influenza and other respiratory virus data weekly through the CDC's online NREVSS reporting system. **Laboratories sign up for this program by contacting DSHS.** <http://www.cdc.gov/surveillance/nrevss/>

Recommended Resources

Texas Department of State Health Services

DSHS influenza page: <http://www.texasflu.org/>

Influenza surveillance data and reports: <http://www.dshs.state.tx.us/idcu/disease/influenza/surveillance/>

Map of Texas Health Service Regions: <http://www.dshs.state.tx.us/regions/state.shtm>

Centers for Disease Control and Prevention

National FluView weekly flu report: <http://www.cdc.gov/flu/weekly/>

Variant and novel influenza viruses: <http://www.cdc.gov/flu/avianflu/index.htm>; <http://www.cdc.gov/flu/swineflu/index.htm>

Infection Control in Healthcare Facilities: <http://www.cdc.gov/flu/professionals/infectioncontrol/>

Seasonal Flu Information for Schools and Childcare Providers: <http://www.cdc.gov/flu/school/index.htm>

World Health Organization

Influenza page: <http://www.who.int/topics/influenza/en/>

Disease Outbreak News: <http://www.who.int/csr/don/en/>