

Texas Influenza Surveillance Report 2015–2016 Season/2016 MMWR Week 17

(Apr. 24, 2016 – Apr. 30, 2016)

Report produced on 05/06/2016

Summary

Influenza activity has been decreasing across the state for the past several weeks. Compared to the previous week, the percentage of specimens positive for influenza slightly decreased and the percentage of patient visits due to influenza-like illness (ILI) marginally increased. It appears that influenza activity has peaked for the season. One influenza-associated pediatric death was reported. No ILI/influenza outbreaks were reported. In addition to flu, other respiratory viruses were detected in Texas during week 17.

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)	No change	Local	Local	--
Statewide ILINet Activity Indicator assigned by CDC (intensity of influenza-like illness)	No change	Minimal	Minimal	--
Percentage of specimens positive for influenza	▼0.62%	13.19%	13.81%†	1
Percentage of visits due to ILI (ILINet)	▲0.25%	4.68%	4.43%†	3
Number of regions reporting increased flu/ILI activity	No change	0	0	5
Number of regions reporting decreased flu/ILI activity	No change	4	4	5
Number of variant/novel influenza infections	No change	0	0	5
Number of ILI/influenza outbreaks	No change	0	0	5
Number of Pneumonia and Influenza (P&I) Deaths	▼495	0	495	6
Number of pediatric influenza deaths	New Case Reported	1	0	6

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

Laboratory Results

Influenza

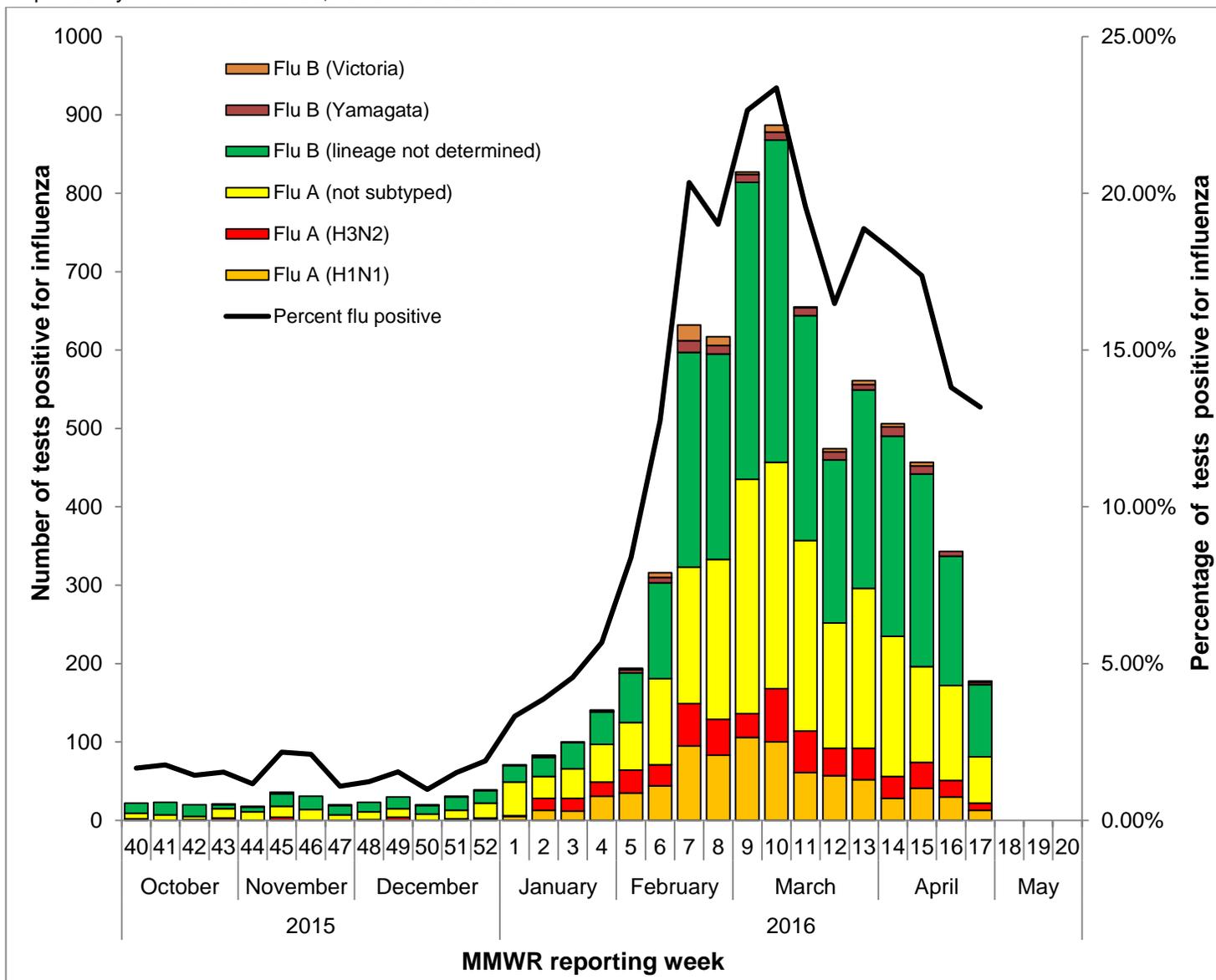
Hospital laboratories across Texas voluntarily report influenza tests (antigen, culture, and PCR) to the National Respiratory and Enteric Virus Surveillance System (NREVSS). Providers throughout Texas also submit specimens for influenza testing (PCR) to Texas public health laboratories, including the Texas Department of State Health Services (DSHS) laboratory in Austin and the nine Texas Laboratory Response Network (LRN) laboratories. The results reported by these labs are summarized below. Additional influenza test results (rapid tests, culture, PCR) 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 17	Season to Date
Number of labs reporting flu tests	15	
Number of specimens tested	1350	67799
Number of positive specimens (%)†	178 (13.19%)	7376 (10.88%)
Percentage of total tests that were antigen detection tests	64.59%	
Positive specimens by type/subtype/lineage [n (%)]		
Influenza A	81 (45.51%)	3866 (52.41%)
Subtyping performed	22 (27.16%)	1349 (34.89%)
A (H1N1)	13 (59.09%)	811 (60.12%)
A (H3N2)	9 (40.91%)	538 (39.88%)
Subtyping not performed	59 (72.84%)	2517 (65.11%)
Influenza B	97 (54.49%)	3510 (47.59%)
Lineage testing performed	5 (5.15%)	203 (5.78%)
B/Victoria	2 (40.00%)	79 (38.92%)
B/Yamagata	3 (60.00%)	124 (61.08%)
Lineage testing not performed	92 (94.85%)	3307 (94.22%)

†Laboratory data in 2015-2016 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, Subtype, and Lineage Reported by Texas Laboratories, 2015–2016 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), seasonal coronavirus, 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)	6	411	19	4.62%
HMPV	5	406	37	9.11%
Parainfluenza virus	6	411	30	7.30%
Rhinovirus	4	397	116	29.22%
RSV ^{†^}	10	568	9	1.58%
Seasonal coronavirus (does not include MERS-CoV)	3	387	20	5.17%

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

[^]Numbers 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 October 04, 2015, CDC has reported antigenic characterization results from nine influenza A (H1N1) viruses, fourteen influenza A (H3N2) viruses and seventeen 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 (H1N1) [9]

- Nine (100.0%) viruses were related to A/California/07/2009. This virus strain was included in the 2015-2016 influenza vaccine for the Northern Hemisphere.

Influenza A (H3N2) [14]

- Fourteen (100.0%) viruses were related to A/Switzerland/9715293/2013, the influenza A (H3N2) component of the 2015-2016 Northern Hemisphere influenza vaccine.

Influenza B [17]

- Yamagata lineage [10]: Ten (58.8%) influenza B/Yamagata-lineage viruses have been characterized from Texas. A B/Phuket/3073/2013-like virus, which belongs to the B/Yamagata lineage, is included as an influenza B component of the 2015-2016 Northern Hemisphere trivalent and quadrivalent influenza vaccines.
- Victoria lineage [7]: Seven (41.2%) influenza B/Victoria-lineage viruses have been characterized as B/Brisbane/60/2008-like, which is included as an influenza B component of the 2015-2016 Northern Hemisphere quadrivalent influenza vaccine.

Antiviral Resistance

Table 4: Cumulative Antiviral Resistance Results from Texas Influenza Viruses, 2015-2016 Season[†]

	Oseltamivir		Zanamivir		Peramivir [^]	
	Virus samples tested (n)	Resistant viruses, number (%)	Virus samples tested (n)	Resistant viruses, number (%)	Virus samples tested (n)	Resistant viruses, number (%)
Influenza A (H1N1)	33	0 (0%)	33	0 (0%)	33	0 (0%)
Influenza A (H3N2)	0	0 (0%)	0	0 (0%)	0	0 (0%)
Influenza B	0	0 (0%)	0	0 (0%)	0	0 (0%)

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

[^] Peramivir is an intravenous antiviral medication that was FDA-approved for use on December 19, 2014.

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

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

	Week 17
Number of providers reporting [†]	69
Number of providers reporting patient visits	68
Number (%) of providers with at least one ILI case	54 (79.41%)
Percentage of all visits due to ILI	4.68%
Texas ILINet baseline [‡] , 2015–2016	6.32%

[†]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 5/05/2016 9:30 AM)

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+			
201540	131	204	395	350	197	125	1271	31446	4.04%
201541	127	212	422	304	141	92	1171	29680	3.95%
201542	127	245	467	392	187	137	1428	31123	4.59%
201543	129	250	500	352	201	150	1453	31953	4.55%
201544	131	251	437	322	213	160	1383	31979	4.32%
201545	123	248	500	296	122	41	1207	29029	4.16%
201546	128	237	530	376	224	186	1553	31686	4.90%
201547	127	206	377	339	182	114	1218	22193	5.49%
201548	127	277	500	478	290	249	1794	31214	5.75%
201549	124	276	451	410	300	218	1655	28634	5.78%
201550	126	320	410	486	279	219	1714	28709	5.97%
201551	125	193	333	418	222	175	1341	21334	6.29%
201552	124	213	294	488	295	178	1468	21567	6.81%
201601	124	201	364	511	315	247	1638	26827	6.11%
201602	120	226	398	321	150	69	1164	25210	4.62%
201603	127	278	467	430	221	214	1610	29299	5.50%
201604	126	284	638	450	306	200	1878	30487	6.16%
201605	127	300	623	451	285	191	1850	30329	6.10%
201606	126	323	721	604	328	215	2191	31658	6.92%
201607	124	332	806	625	362	244	2369	31583	7.50%
201608	89	298	537	246	200	211	1492	24843	6.01%
201609	87	294	603	242	173	166	1478	24796	5.96%
201610	86	226	426	244	175	166	1237	22876	5.41%
201611	86	188	288	213	150	127	966	19550	4.94%
201612	86	152	408	202	139	149	1050	22330	4.70%
201613	83	193	390	189	130	153	1055	22379	4.71%
201614	63	91	282	199	123	144	839	18924	4.43%
201615	77	150	360	214	137	159	1020	21833	4.67%
201616	70	128	325	181	130	138	902	20376	4.43%
201617	69	157	327	184	134	146	948	20270	4.68%

Figure 2: Percentage of Visits Due to Influenza-like Illness Reported by Texas ILINet Participants, 2015–2016 Season

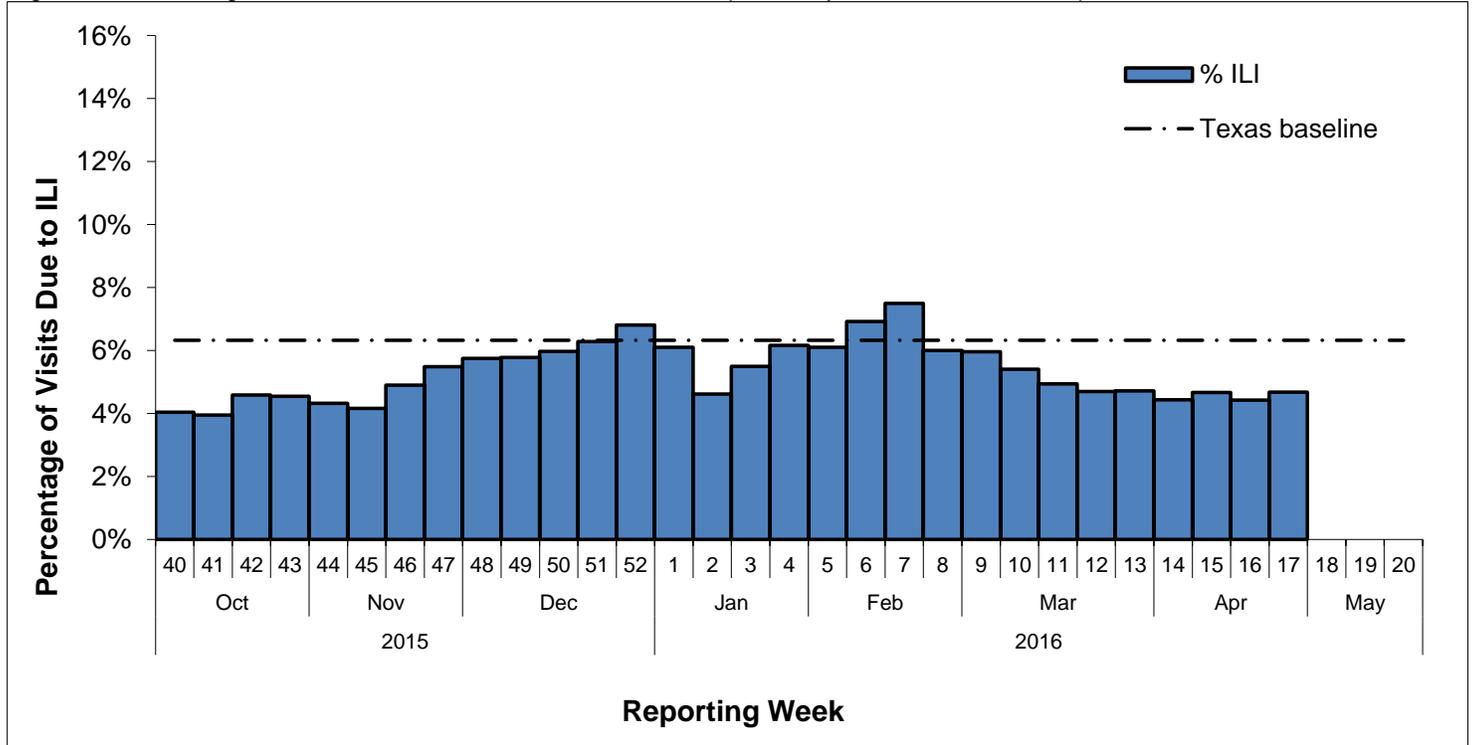
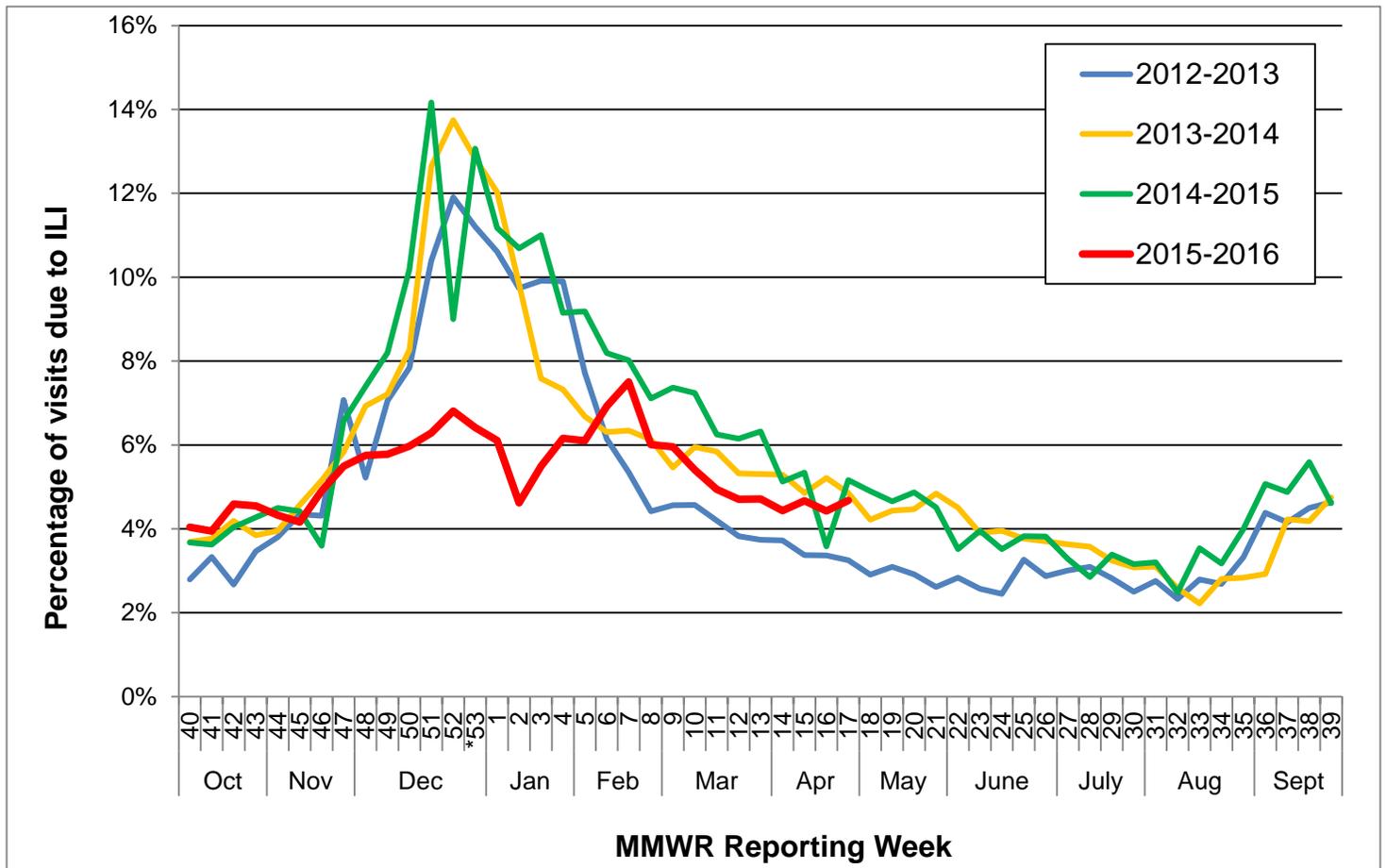


Figure 3: Percentage of Visits Due to Influenza-like Illness Reported by Texas ILINet Participants, 2012–2016 Seasons



*There was a week 53 in the 2014-2015 influenza season, but there is not a week 53 for the 2015-2016 influenza season or the other previous seasons; therefore the week 53 data point for those seasons is an average of week 52 and 1.

Reports from Health Service Regions

Reports were received from six Health Service Regions (HSRs) during week 17.

Table 7: Influenza Activity Compared to Week 16 by Health Service Region (HSR)

Influenza Activity Comparison	Health Service Region (HSR)
Increased	
Same	8 and 11
Decreased	1, 6/5S, 7, and 9/10
Unsure	

Variant Influenza Viruses

No variant or novel influenza viruses have been detected in Texas in 2015 or 2016.

Institutional Outbreaks and School Closures

No ILI or influenza-associated outbreaks were reported during week 17.

No school closures were reported during week 17.

TX P&I Mortality Surveillance Data

Pneumonia and influenza (P&I) deaths are attained from death certificates of Texas residents whose underlying or contributing cause(s) of death on the death certificate is reported as pneumonia or influenza. P&I deaths are identified based on ICD-10 multiple cause of death codes. In particular, P&I deaths are based on ICD-10 pneumonia and influenza mortality codes.

Four thousand twenty-nine P&I deaths have been reported in Texas during the 2015-2016 influenza season.

Table 8: Texas P&I Deaths Occurring Oct. 04, 2015-Apr. 27, 2016* by Age

Age Category (years)	Number of P&I Deaths ⁺	Mortality Rate (per 100,000)
0 - 4	17	0.83
5 - 17	<10	0.15
18 - 49	224	1.79
50 - 64	648	13.04
65 +	3132	93.07
Overall	4029	14.27

*NOTE: Data are provisional and subject to change, errors, and duplicates

⁺ If the cell count is less than 10, the number of P&I deaths is suppressed and <10 is written in the cell.

Table 9: Texas P&I Deaths Occurring Oct. 04, 2015-Apr. 27, 2016* by Health Service Region (HSR)

HSR	Number of P&I Deaths	Mortality Rate (per 100,000)
1	167	18.57
2/3	1122	13.74
4/5N	303	19.08
6/5S	878	11.94
7	501	14.69
8	427	14.61
9/10	242	15.82
11	389	16.41
Overall	4029	14.27

*NOTE: Data are provisional and subject to change, errors, and duplicates

Influenza-Associated Pediatric Mortality

One influenza-associated pediatric death was reported that occurred during week 48 (week ending Dec. 5, 2015). The child was an 8-year-old resident of HSR 2/3 with underlying health conditions. A specimen collected from the child was positive for influenza A (not subtyped) by rapid test. The child was vaccinated for influenza for the current season.

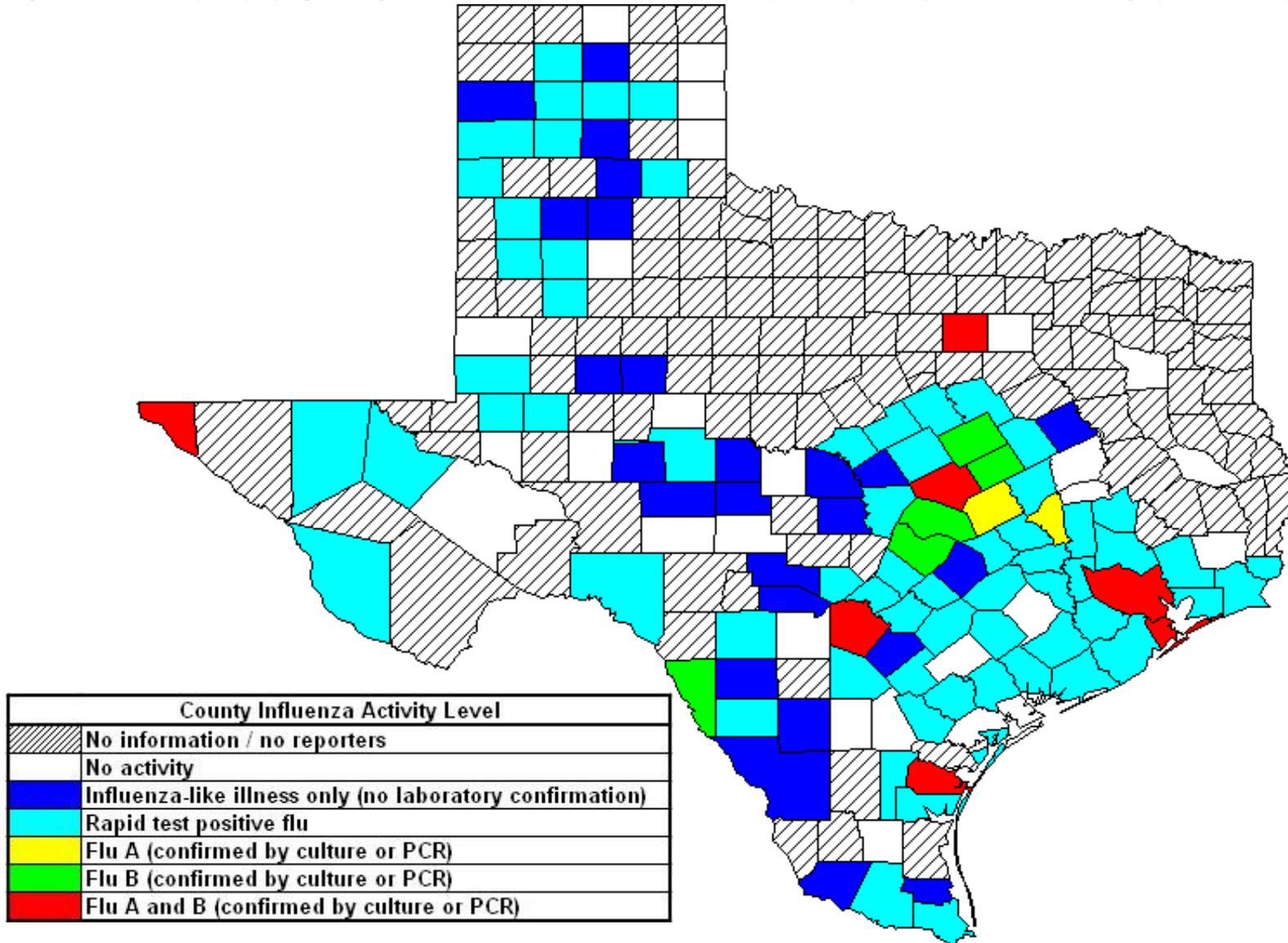
Five influenza-associated pediatric deaths have been reported in Texas during the 2015-2016 influenza season. Cases of influenza-associated pediatric mortality (children <18 years of age) are reportable year-round and by law in Texas.

Table 10: Influenza-Associated Pediatric Deaths Reported in Texas during the 2015–2016 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
2015							
October	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0
December	0	0	1	0	0	0	1
2016							
January	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0
March	1	2	0	1	0	0	4
April	0	0	0	0	0	0	0
Total	1	2	1	1	0	0	5

Statewide Influenza Activity Map

Figure 4: Texas Map Displaying the Highest Level of Influenza or ILI Activity Reported by County for the Week Ending Apr. 30, 2016 (MMWR Week 17)



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

Pneumonia and Influenza (P&I) Mortality Surveillance

The DSHS Vital Statistics Unit collects death certificate information for all deaths on Texas residents from various partners such as funeral homes and local registrars around the state. The death certificates are then sent to the National Center for Health Statistics (NCHS) where the cause of death and underlying causes of death on the death certificates are coded with ICD-10 mortality codes. Once death certificates are coded, the information is sent back to DSHS Center for Health Statistics (CHS). CHS produces a Weekly Pneumonia and Influenza (P&I) Death Report and sends it to the State Influenza Surveillance Coordinator for inclusion in the Texas Weekly Flu Report. P&I deaths are identified based on ICD-10 multiple cause of death codes, and in particular, pneumonia and influenza mortality codes. Delays inherent in death reporting and coding practices may cause the number of reported P&I deaths to vary considerably each week.

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/>