



Texas Influenza Surveillance Report 2016–2017 Season/2017 MMWR Week 09

(Feb. 26, 2017 – Mar. 04, 2017)
Report produced on 03/10/2017

Summary

Influenza (flu) activity has slightly decreased the past couple of weeks in Texas, but it is too soon to tell if flu activity has peaked for the season. Compared to the previous week, the percentage of specimens testing positive for influenza reported by hospital and public health laboratories and patient visits due to influenza-like illness (ILI) slightly decreased. Sixteen outbreaks due to influenza or influenza-like illness were reported. All but one of the outbreaks have concluded. No influenza-associated pediatric deaths were reported. In addition to flu, other respiratory viruses—especially rhino/enteroviruses—were detected in Texas during week 09.

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 by hospital laboratories	▼3.80%	23.74%	27.54% [†]	1
Percentage of specimens positive for influenza by public health laboratories	▼17.27%	57.73%	75.00% [†]	2
Percentage of visits due to ILI (ILINet)	▼1.41%	7.89%	9.30% [†]	4
Number of regions reporting increased flu/ILI activity	▼2	1	3	6
Number of regions reporting decreased flu/ILI activity	▲2	5	3	6
Number of variant/novel influenza infections	No change	0	0	6
Number of ILI/influenza outbreaks	▲14	16	2	6
Number of pediatric influenza deaths	No new cases reported	0	1	7

[†]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 are summarized in the two tables 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 Hospital Laboratories for the Current Week

	Week 09	Season to Date
Number of labs reporting flu tests	11	
Number of specimens tested	3977	60755
Number of positive specimens (%) [†]	944 (23.74%)	9567 (15.75%)
Percentage of total tests that were antigen detection tests	61.86%	
Positive specimens by type/subtype [n (%)]		
Influenza A	690 (73.09%)	7773 (81.25%)
Subtyping performed	133 (19.28%)	1794 (23.08%)
A (H1N1)	20 (15.04%)	291 (16.22%)
A (H3N2)	113 (84.96%)	1503 (83.78%)
Subtyping not performed	557 (80.72%)	5979 (76.92%)
Influenza B	254 (26.91%)	1794 (18.75%)

[†]Laboratory data in 2016-2017 season reports may not be comparable to reports from previous seasons because the data only includes hospital laboratories 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 Hospital Laboratories, 2016–2017 Season

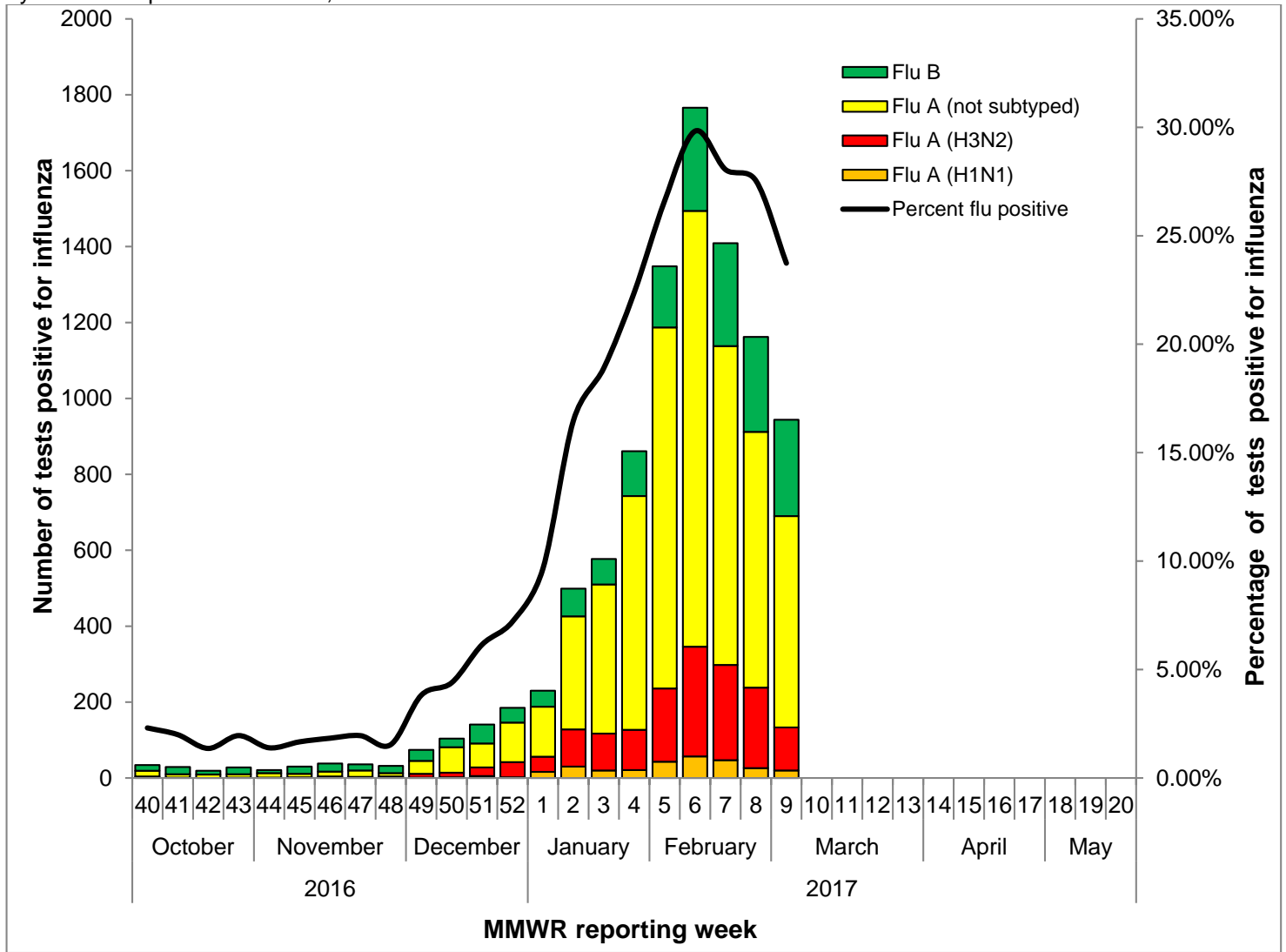
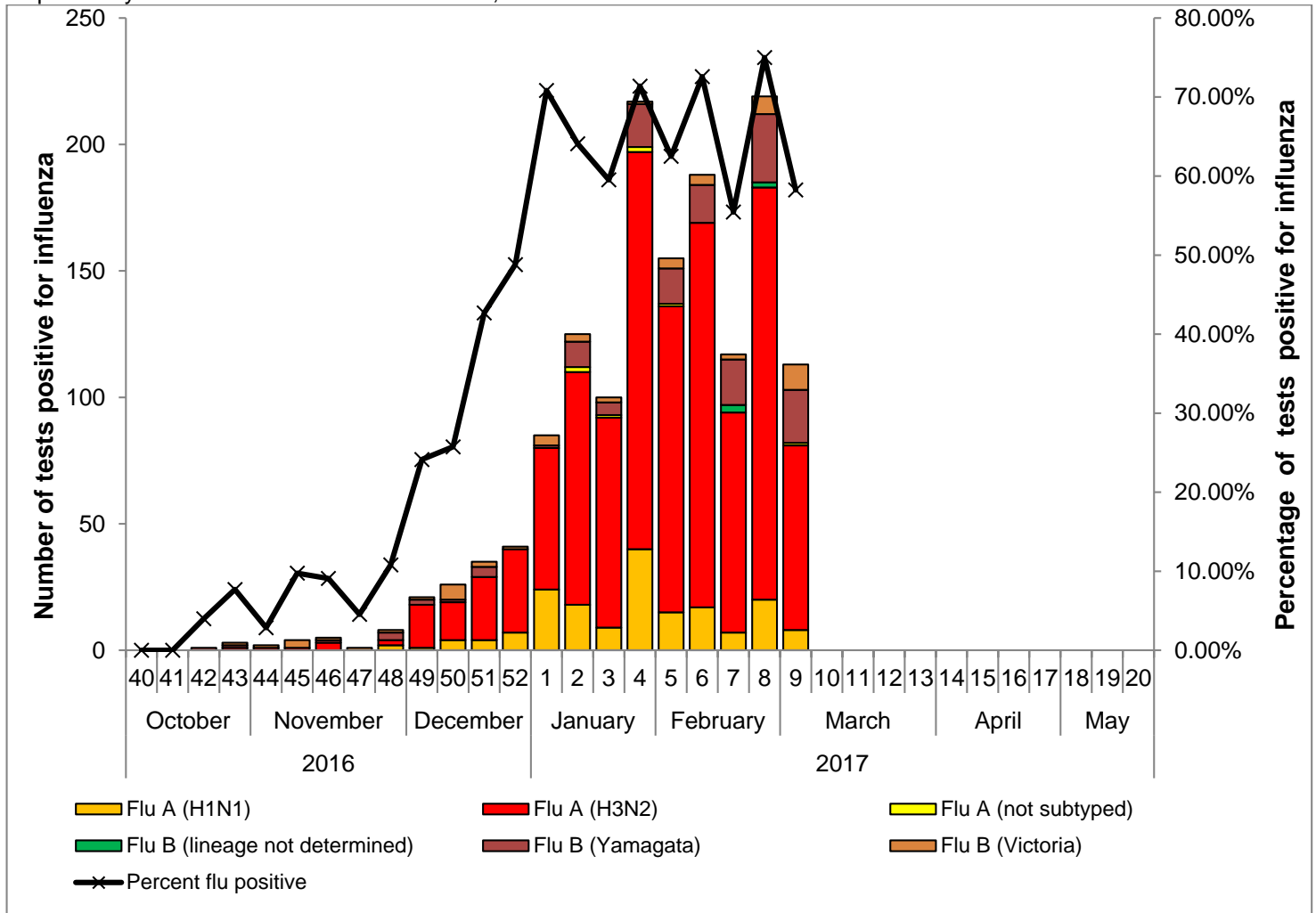


Table 3: Influenza Testing Performed by Texas Public Health Laboratories for the Current Week

	Week 09	Season to Date
Number of labs reporting flu tests	6	
Number of specimens tested	194	2715
Number of positive specimens (%) [†]	113 (58.25%)	1466 (54.00%)
Positive specimens by type/subtype/lineage [n (%)]		
Influenza A	82 (72.57%)	1265 (86.29%)
Subtyping performed	81 (98.78%)	1258 (99.45%)
A (H1N1)	8 (9.88%)	176 (13.99%)
A (H3N2)	73 (90.12%)	1082 (86.01%)
Subtyping not performed	1 (1.22%)	7 (0.55%)
Influenza B	31 (27.43%)	201 (13.71%)
Lineage testing performed	31 (100.00%)	196 (97.51)
B/Victoria	10 (32.26%)	55 (28.06%)
B/Yamagata	21 (67.74%)	141 (71.94%)
Lineage testing not performed	0 (0.00%)	5 (2.49%)

[†]Laboratory data in 2016-2017 season reports may not be comparable to reports from previous seasons because the data only includes DSHS and LRN laboratory data for the current season.

Figure 2: Number and Percentage of Tests (Culture, PCR) Positive for Influenza by Type, Subtype, and Lineage Reported by Texas Public Health Laboratories, 2016–2017 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 4: 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)	7	1168	24	2.05%
HMPV	7	1021	84	8.23%
Parainfluenza virus	7	1168	52	4.45%
Rhinovirus	7	981	129	13.15%
RSV ^{†^}	11	1901	151	7.94%
Seasonal coronavirus (does not include MERS-CoV)	5	937	84	8.96%

[†]RSV tests displayed in the table are a combination of antigen detection, PCR, and culture tests. 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 02, 2016, CDC has reported antigenic characterization results from thirteen influenza A (H3N2) viruses, thirteen influenza A (H1N1) viruses and thirteen influenza B viruses received from the Texas Department of State Health Services (DSHS) Laboratory, the Dallas County Health and Human Services Laboratory Response Network (LRN) Laboratory, and the San Antonio LRN Laboratory. The DSHS Laboratory and the two LRN laboratories send a representative sample of influenza viruses to the CDC throughout the flu season.

Influenza A (H3N2) [13]

- Thirteen (100.0%) viruses were related to A/Hong Kong/4801/2014 virus, the influenza A (H3N2) component of the 2016-2017 Northern Hemisphere influenza vaccine.

Influenza A (H1N1) [13]

- Thirteen (100.0%) viruses were related to A/California/07/2009. This virus strain was included in the 2016-2017 influenza vaccine for the Northern Hemisphere.

Influenza B [13]

- Victoria lineage [8]: Eight (61.5%) influenza B/Victoria-lineage viruses has been characterized as B/Brisbane/60/2008-like, which is included as an influenza B component of the 2016-2017 Northern Hemisphere trivalent and quadrivalent influenza vaccines.
- Yamagata lineage [5]: Five (38.5%) 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 2016-2017 Northern Hemisphere quadrivalent influenza vaccine.

Antiviral Resistance

No antiviral resistance testing data for Texas specimens are available at this time.

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

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

Week 09	
Number of providers reporting [†]	104
Number of providers reporting patient visits	103
Number (%) of providers with at least one ILI case	100 (97.09%)
Percentage of all visits due to ILI	7.89%
Texas ILINet baseline [‡] , 2016–2017	6.64%

[†]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 03/09/17 2:15 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+			
201640	124	166	338	142	106	145	897	33312	2.69%
201641	122	140	299	151	87	137	814	31092	2.62%
201642	118	132	260	127	118	109	746	30727	2.43%
201643	118	138	307	149	139	125	858	30597	2.80%
201644	111	115	291	102	36	33	577	28733	2.01%
201645	120	153	267	167	104	133	824	30686	2.69%
201646	120	186	350	143	116	148	943	31805	2.96%
201647	118	146	212	141	115	116	730	22271	3.28%
201648	116	197	296	185	165	192	1035	29816	3.47%
201649	117	226	332	219	182	196	1155	28502	4.05%
201650	112	241	377	184	93	67	962	26540	3.62%
201651	113	232	342	316	210	200	1300	24910	5.22%
201652	114	180	233	357	220	185	1175	23112	5.08%

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+			
201701	118	188	316	394	222	212	1332	27199	4.90%
201702	117	223	628	420	296	243	1810	30922	5.85%
201703	117	242	731	413	255	225	1866	30815	6.06%
201704	108	254	911	408	169	68	1810	29558	6.12%
201705	117	368	1406	680	354	270	3078	36065	8.53%
201706	116	400	1716	938	473	326	3853	35994	10.70%
201707	88	166	1220	757	433	252	2828	28605	9.89%
201708	105	314	1178	729	386	217	2824	30356	9.30%
201709	105	262	1001	664	317	221	2465	31239	7.89%

Figure 3: Percentage of Visits Due to Influenza-like Illness Reported by Texas ILINet Participants, 2016–2017 Season

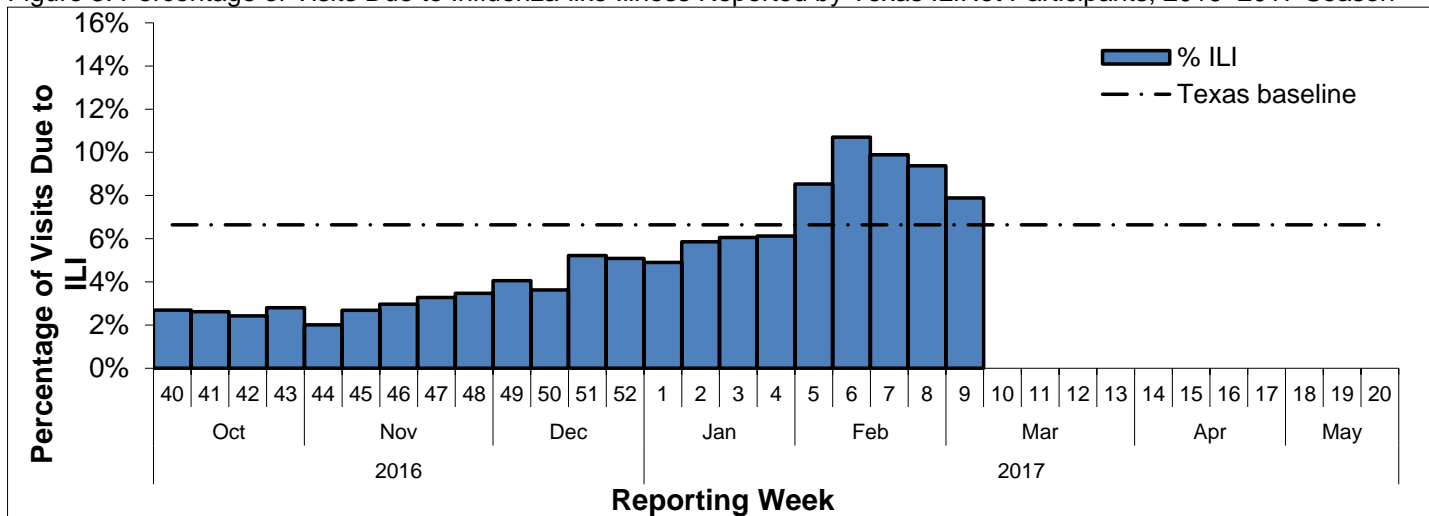
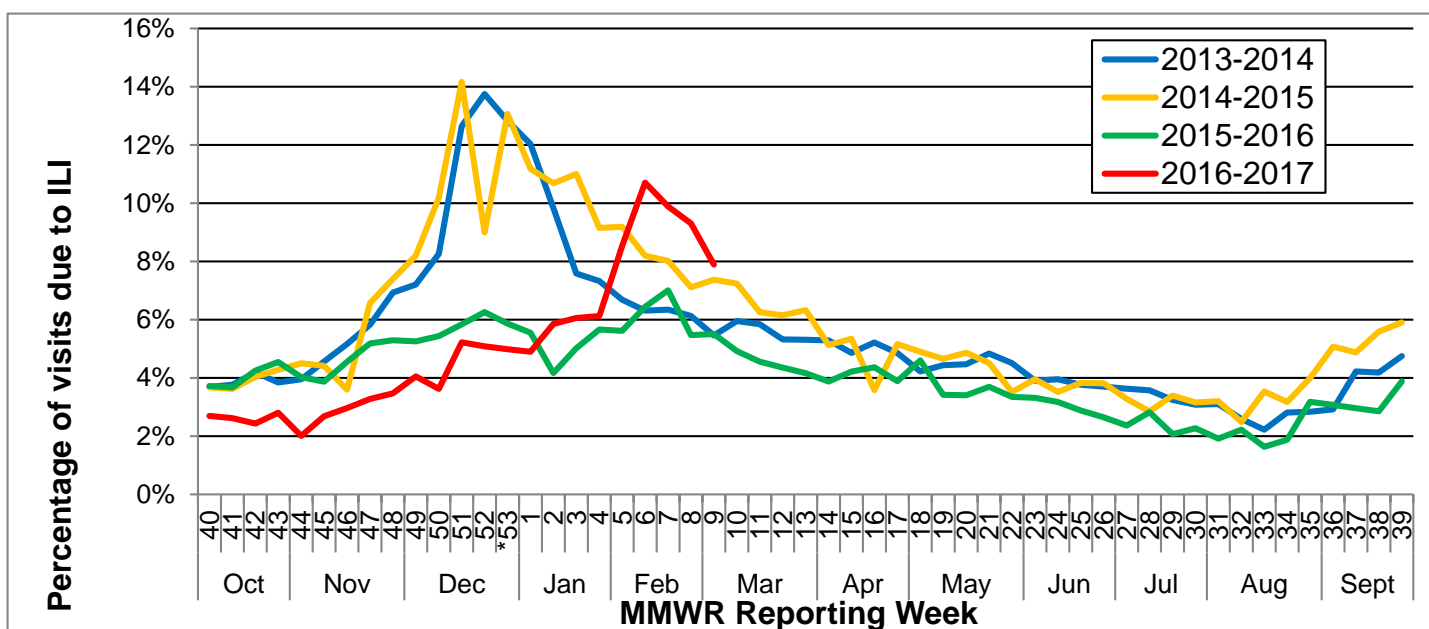


Figure 4: Percentage of Visits Due to Influenza-like Illness Reported by Texas ILINet Participants, 2013–2017 Seasons*



*There was a week 53 in the 2014-2015 influenza season, but there is not a week 53 in the 2016-2017 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 all Health Service Regions (HSRs) during week 09.

Table 7: Influenza Activity Compared to Week 08 by Health Service Region (HSR)

Influenza Activity Comparison	
Increased	1
Same	4/5N and 9/10
Decreased	2/3, 6/5S, 7, 8, and 11
Unsure	

Variant Influenza Viruses

No variant or novel influenza viruses have been detected in Texas in 2016 or 2017.

Institutional Outbreaks and School Closures

During week 09, fifteen institutional outbreaks were reported. All but one of these outbreaks have ended. There were ten reported outbreaks of influenza at long-term care facilities in HSR 2/3. Three of the outbreaks in HSR 2/3, reported five cases at each facility. There were four cases of influenza reported at three different long-term care facilities. Two long-term care facilities reported twelve cases of influenza. One long-term care facility reported three cases of influenza A. The last facility reported eight cases of influenza. One influenza outbreak was reported in HSR 6/5S at a long-term care facility. Twenty-eight individuals were reported to have influenza A. Twenty-three of the 28 individuals were vaccinated. One influenza outbreak was reported in HSR 7 at a long-term care facility. Thirteen residents reported ILI symptoms. Five of the thirteen tested positive for influenza A by rapid test. There were two reported influenza outbreaks in HSR 8 at long-term care facilities. One of the outbreaks reported two individuals with influenza. The other influenza outbreak in HSR 8 is the only current outbreak for week 09. Nine residents and two staff tested positive for influenza A out of the fourteen people that were tested. Various control measures, such as isolating the ill or cohorting the ill/exposed and well, limiting staff and resident movement, and giving anti-viral prophylaxis to residents were implemented for the outbreaks.

One school outbreak and one school closure were reported during week 09. One outbreak due to ILI was reported in HSR 4/5N. There were about 100 individuals reporting symptoms of ILI. One school closure was reported in HSR 9/10. There were reports of influenza A, influenza B, and *Streptococcus pyogenes*. Sixty-nine students reported ILI/flu-like symptoms.

TX P&I Mortality Surveillance Data

Pneumonia and influenza (P&I) death data are obtained from death certificates of Texas residents whose underlying or contributing cause(s) of death 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.

Three thousand seven hundred and ninety-five P&I deaths have been reported in Texas during the 2016-2017 influenza season.

Table 8: Texas P&I Deaths Occurring Oct. 02, 2016-Mar. 08, 2017* by Age

Age Category (years)	Number of P&I Deaths ⁺	Mortality Rate (per 100,000)
0 - 4	18	0.87
5 - 17	10	0.18
18 - 49	202	1.59
50 - 64	612	12.13
65 +	2953	84.08
Overall	3795	13.18

*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. 02, 2016- Mar. 08, 2017* by Health Service Region (HSR)

HSR	Number of P&I Deaths ⁺	Mortality Rate (per 100,000)
1	152	16.70
2/3	1033	12.41
4/5N	285	17.76
6/5S	870	11.58
7	418	11.96
8	429	14.40
9/10	215	13.84
11	393	16.26
Overall	3795	13.18

*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.

Influenza-Associated Pediatric Mortality

No influenza-associated pediatric deaths were reported during week 09.

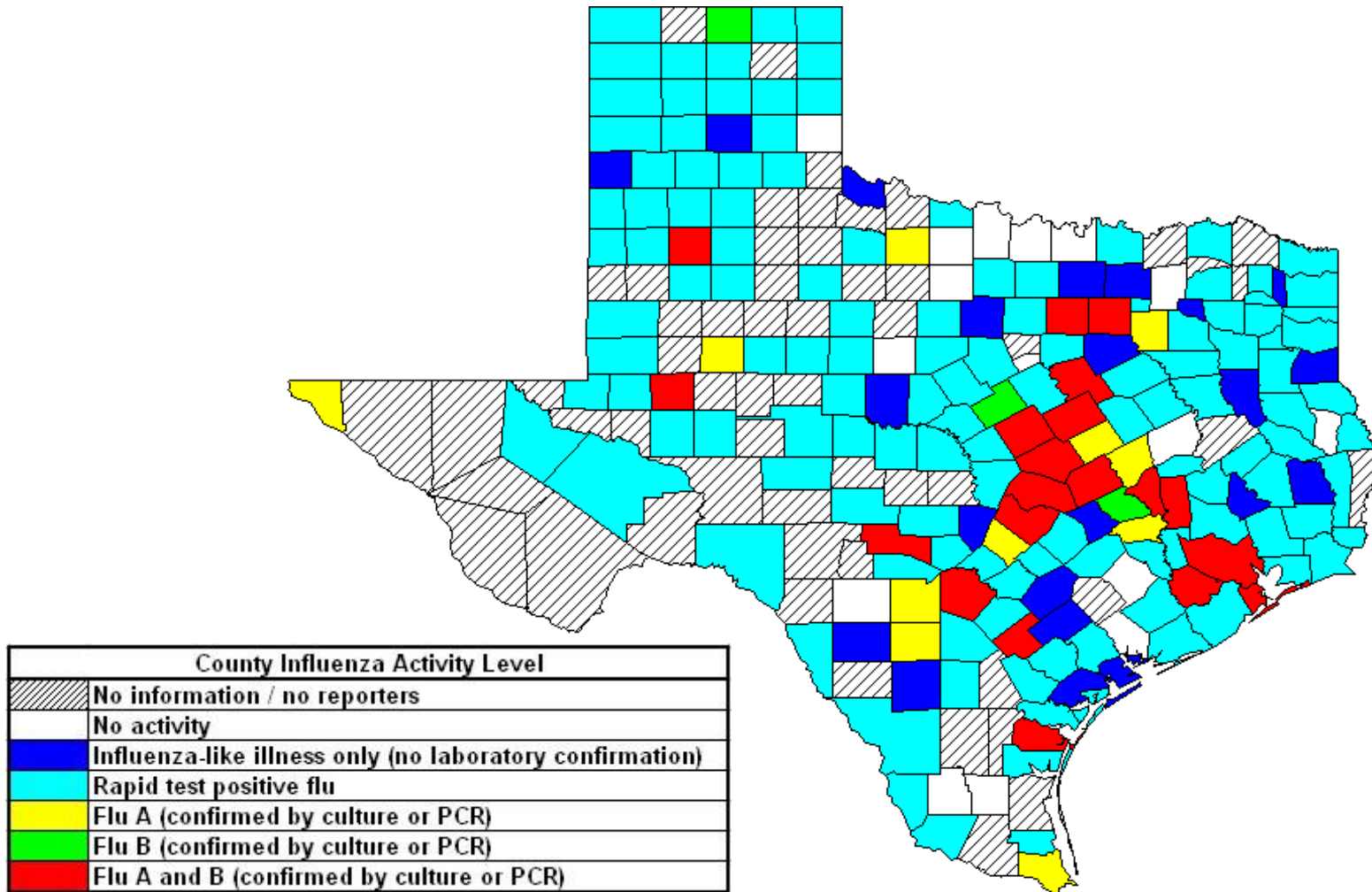
Two influenza-associated pediatric deaths have been reported in Texas during the 2016-2017 influenza season. Cases of influenza-associated pediatric mortality (children <18 years of age) are reportable year-round and by law in Texas.

Table 10: Influenza-Associated Pediatric Deaths Reported in Texas during the 2016–2017 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
2016							
October	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0
2017							
January	0	0	0	0	0	0	0
February	1	1	0	0	0	0	2
March	0	0	0	0	0	0	0
Total	1	1	0	0	0	0	2

Statewide Influenza Activity Map

Figure 5: Texas Map Displaying the Highest Level of Influenza or ILI Activity Reported by County for the Week Ending Mar. 04, 2017 (MMWR Week 09)



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.

ILI activity

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

Outbreaks

Healthcare, schools, childcare, and correctional 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 influenza viruses: <http://www.cdc.gov/flu/swineflu/variant.htm>

Avian influenza viruses: <http://www.cdc.gov/flu/avianflu/index.htm>

Swine influenza viruses: <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/>