



Texas Influenza Surveillance Report 2018-2019 Season/2019 MMWR Week 09

(February 24, 2019 – March 2, 2019)

Report produced on 3/8/2019

Summary

Influenza activity remains high across the state of Texas. Compared to the previous week, the percentage of patient visits due to influenza-like illness (ILI) slightly increased. The percentage of specimens testing positive for influenza reported by hospital laboratories marginally decreased. No influenza-associated pediatric deaths were reported. Twenty-five ILI/influenza-associated outbreaks were reported but the majority occurred earlier. In addition to flu, other respiratory viruses—especially rhinovirus/enterovirus—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)	No change	Widespread	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	▼ 3.31%	25.46%	28.77%	1
Percentage of visits due to ILI (ILINet)	▲ 0.41%	9.71%	9.30%	4
Number of regions reporting increased flu/ILI activity	▼ 3	0	3	6
Number of regions reporting decreased flu/ILI activity	No change	4	4	6
Number of variant/novel influenza infections	No cases reported	0	0	6
Number of ILI/influenza outbreaks	▲ 13	25	12	6
Number of pediatric influenza deaths	No new cases reported	0	0	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 Week Ending: March 2, 2019
Number of labs reporting flu tests	15	
Number of specimens tested	4105	85689
Number of positive specimens (%) [†]	1045 (25.46%)	15772 (18.41%)
Percentage of total tests that were antigen detection tests	41.68%	
Positive specimens by type/subtype [n (%)]		
Influenza A	978 (93.59%)	14632 (92.77%)
Subtyping performed	141 (14.42%)	1377 (9.41%)
A (H1N1)	29 (20.57%)	487 (35.37%)
A (H3N2)	112 (79.43%)	890 (64.63%)
Subtyping not performed	837 (85.58%)	13255 (90.59%)
Influenza B	67 (6.41%)	1140 (7.23%)

[†]Laboratory data in 2016-2017 and 2017-2018 season reports may not be comparable to reports from seasons previous to 2016-2017 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, 2018-2019 Season

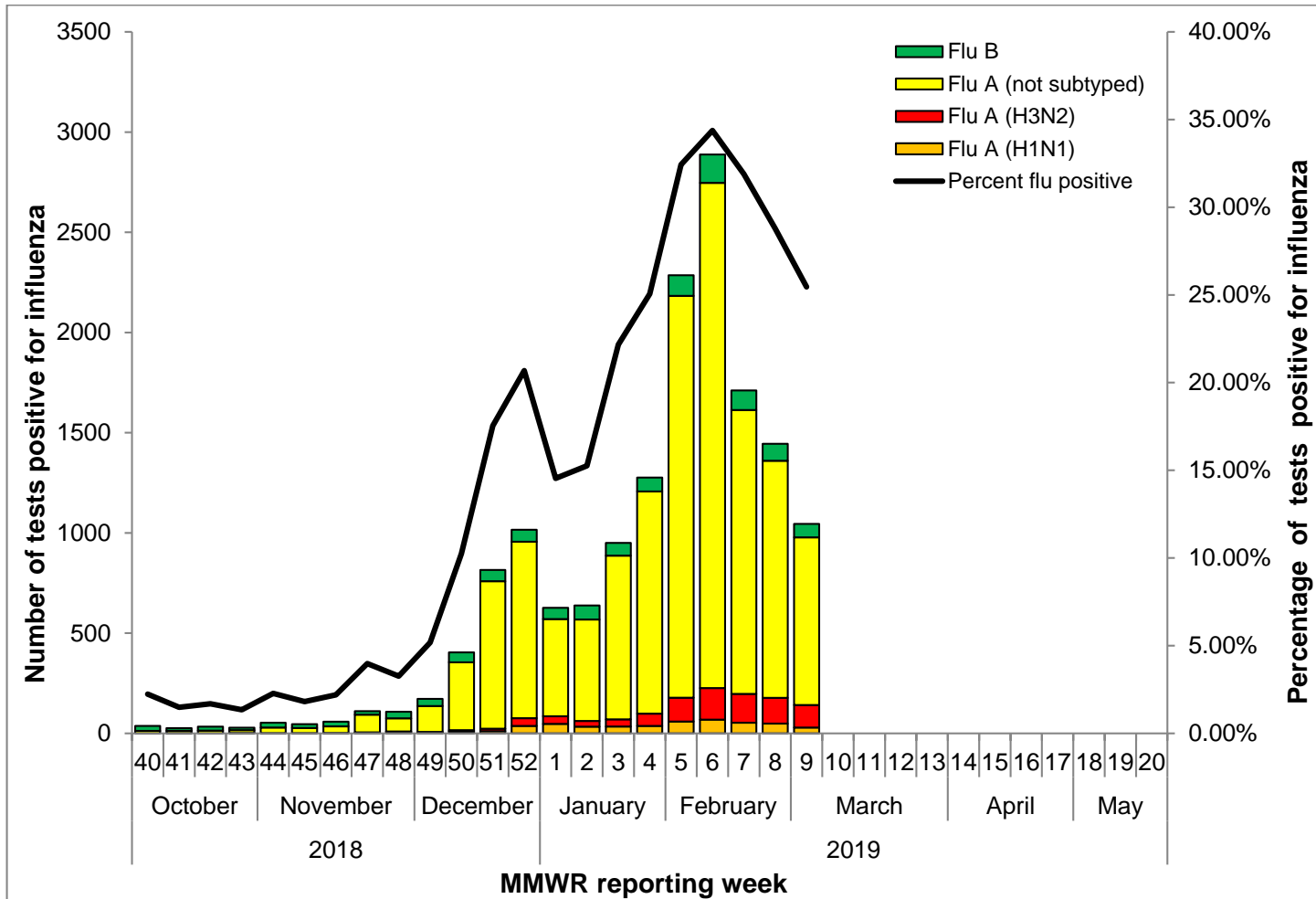


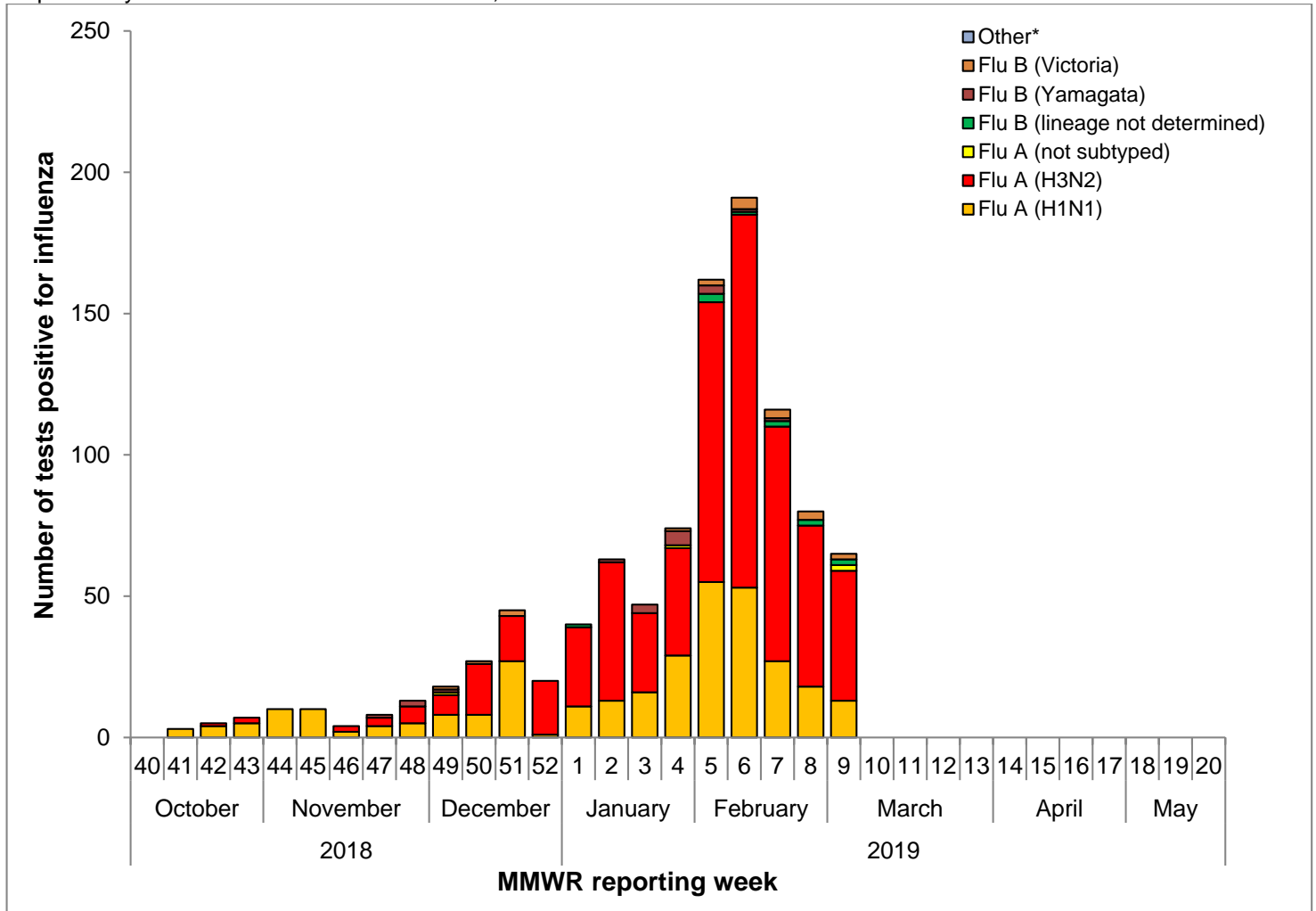
Table 3: Influenza Testing Performed by Texas Public Health Laboratories for the Current Week

	Week 09	Season to Date Week Ending: March 2, 2019
Number of labs reporting flu tests	7	
Number of specimens tested	86	1781
Number of positive specimens (%) [†]	65 (75.58%)	1008 (56.60%)
Positive specimens by type/subtype/lineage [n (%)]		
Influenza A	61 (93.85%)	960 (95.24%)
Subtyping performed	59 (96.72%)	856 (99.58%)
A (H1N1)	13 (22.03%)	322 (33.68%)
A (H3N2)	46 (77.97%)	634 (66.32%)
Subtyping not performed	2 (3.28%)	4 (0.42%)
Influenza B	4 (6.15%)	48 (4.76%)
Lineage testing performed	2 (50.00%)	37 (77.08%)
B/Victoria	2 (100.00%)	19 (51.35%)
B/Yamagata	0 (0.00%)	18 (48.65%)
Lineage testing not performed	2 (50.00%)	11 (22.92%)
Other*	0 (0.00%)	0 (0.00%)

[†]Laboratory data in 2016-2017 and 2017-2018 season reports may not be comparable to reports from seasons previous to 2016-2017 because the data only includes hospital laboratories data for the current season

*Other denotes specimens with coinfections (i.e. one specimen was positive for both influenza A (H1N1) and influenza A (H3N2))

Figure 2: Number and Percentage of Tests (Antigen, Culture, PCR) Positive for Influenza by Type, Subtype, and Lineage Reported by Texas Public Health Laboratories, 2018-2019 Season



*Other denotes specimens with coinfections (i.e. one specimen was positive for both influenza A (H1N1) and influenza A (H3N2))

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)	10	1226	54	4.40%
HMPV	11	1308	105	8.03%
Parainfluenza virus	11	1585	99	6.25%
Rhinovirus	10	957	203	21.21%
RSV ^{†^}	14	2309	110	4.76%
Seasonal coronavirus (does not include MERS-CoV)	6	786	38	4.83%

[†]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 September 30, 2018, CDC has reported antigenic characterization results from eight influenza A (H3N2) viruses, twelve influenza A (H1N1) viruses and four 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) [8]

- Eight (100.00%) viruses were related to A/Singapore/INFIMH-16-0019/2016-LIKE (H3N2). This virus strain was included in the 2018-2019 influenza vaccine for the Northern Hemisphere.

Influenza A (H1N1) [12]

- Twelve (100.00%) viruses were related to A/Michigan/45/2015 (H1N1). This virus strain was included in the 2018-2019 influenza vaccine for the Northern Hemisphere.

Influenza B [4]

- Victoria lineage [1]
 - One (25.00%) virus was related to B/Colorado/06/2017-LIKE. This virus strain was included in the 2018-2019 influenza vaccine for the Northern Hemisphere.
- Yamagata lineage [3]
 - Three (75.00%) viruses was related to B/Phuket/3073/2013-LIKE. This virus strain was included in the quadrivalent but not trivalent 2018-2019 influenza vaccine for the Northern Hemisphere.

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 [†]	106
Number of providers reporting patient visits	106
Number (%) of providers with at least one ILI case	104 (98.11%)
Percentage of all visits due to ILI	9.71%
Texas ILINet baseline [‡] , 2018-2019	5.60%

[†]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 3/7/2019 10:00 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+			
201840	114	139	341	169	132	135	916	30158	3.04%
201841	113	155	216	185	116	98	770	29476	2.61%
201842	113	126	275	180	92	120	793	29031	2.73%
201843	112	165	335	209	108	128	945	30576	3.09%
201844	114	168	357	230	121	139	1015	30443	3.33%
201845	116	225	388	253	118	136	1120	31595	3.54%
201846	116	227	374	278	168	130	1177	30725	3.83%
201847	116	199	249	236	134	125	943	22934	4.11%
201848	115	261	396	310	213	179	1359	32471	4.19%
201849	115	217	406	303	188	199	1313	30324	4.33%
201850	115	254	494	308	167	157	1380	29536	4.67%
201851	107	267	472	363	206	213	1521	27103	5.61%
201852	107	238	433	406	202	165	1444	21301	6.78%
201901	111	196	305	462	173	108	1244	24340	5.11%
201902	111	219	405	443	165	99	1331	28543	4.66%
201903	113	245	655	468	152	73	1593	28676	5.56%
201904	115	271	971	515	200	100	2057	29188	7.05%
201905	113	311	1493	593	203	81	2681	30873	8.68%
201906	115	369	1875	724	264	83	3315	32581	10.17%
201907	114	397	1695	787	230	116	3225	31535	10.23%
201908	110	324	1401	768	264	72	2829	30417	9.30%
201909	106	340	1443	803	259	117	2962	30501	9.71%

Figure 3: Percentage of Visits Due to Influenza-like Illness Reported by Texas ILINet Participants, 2018-2019 Season

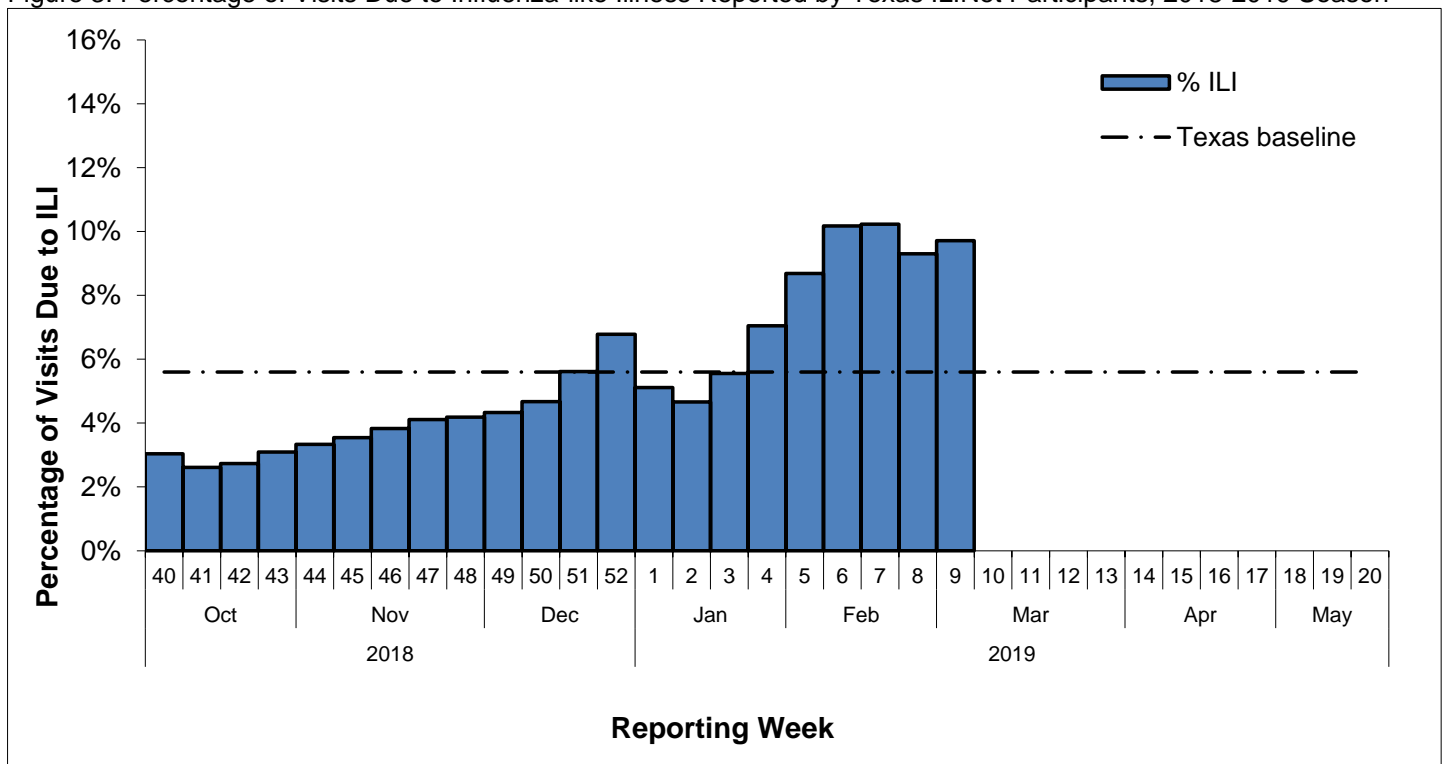
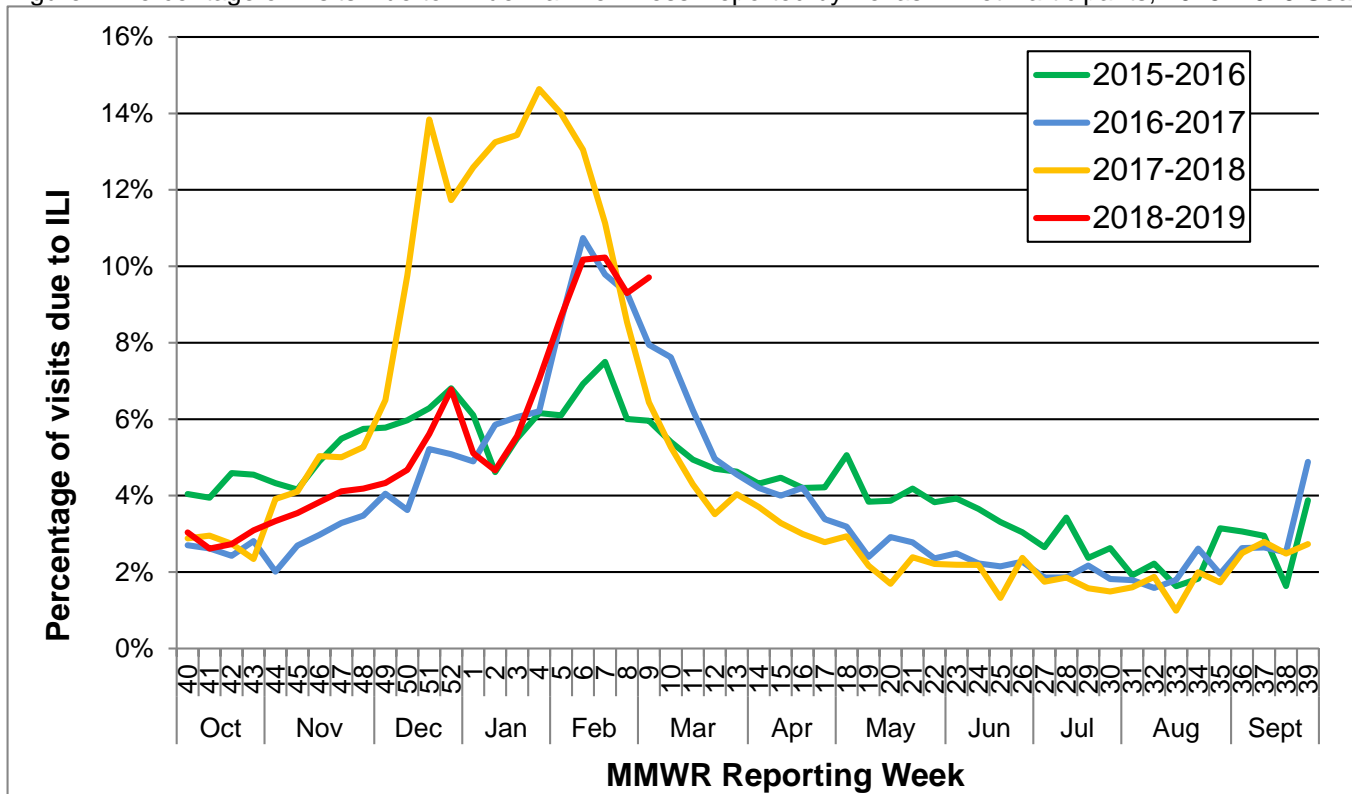


Figure 4: Percentage of Visits Due to Influenza-like Illness Reported by Texas ILINet Participants, 2015–2019 Seasons



Reports from Health Service Regions

Reports were received from seven Health Service Regions (HSRs) during week 09.

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

Influenza Activity Comparison	Health Service Region (HSR)
Increased	
Same	2/3, 6/5S, and 9/10
Decreased	1, 4/5N, 8, and 11
Unsure	

Variant Influenza Viruses

No variant or novel influenza viruses have been detected in Texas during the 2018-2019 season.

Institutional Outbreaks and School Closures

Five outbreaks were reported in two different HSRs during week 09 in long-term care facilities. The majority of the outbreaks were reported during week 09 but occurred earlier in the season. Four of the five outbreaks were reported in HSR 2/3. The first outbreak had 11 residents test positive for influenza A by rapid test. In addition, 3 staff members tested positive for influenza A by PCR. The second outbreak had 6 residents test positive for influenza A by rapid test. Eight residents tested positive for influenza A by rapid test in the third outbreak reported in HSR 2/3. Two additional staff members reported symptoms of ILI. The final outbreak in HSR 2/3 had three residents test positive for influenza A by rapid test. The outbreak reported in HSR 7 had 8 residents and 4 staff report symptoms of ILI. Of those, 4 residents and 2 staff who tested positive for influenza A by an unknown test type. Various control measures such as isolating the ill, displaying or distributing educational materials, and distributing prophylaxis were implemented at the facilities.

Nineteen ILI or influenza-associated outbreaks and one school closure were reported in four different HSRs during week 09. The majority of the outbreaks were reported during week 09 but occurred earlier in the season. Eight outbreaks were reported in HSR 2/3. In HSR 6/5S, seven outbreaks were reported. Three outbreaks and one school closure were reported in HSR 7. In HSR 8, one outbreak was reported.

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.

One thousand eight hundred and sixty-five P&I deaths have been reported in Texas during the 2018-2019 influenza season.

Table 8: Texas P&I Deaths Occurring Sept. 30, 2018- Jan. 02, 2019* by Age

Age Category (years)	Number of P&I Deaths ⁺	Mortality Rate (per 100,000)
0 - 4	<10	0.05
5 - 17	<10	0.11
18 - 49	112	0.84
50 - 64	315	6.07
65 +	1431	37.31
Overall	1865	6.23

*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 Sept. 30, 2018- Jan. 02, 2019* by Health Service Region (HSR)

HSR	Number of P&I Deaths	Mortality Rate (per 100,000)
1	56	6.01
2/3	573	6.61
4/5N	137	8.36
6/5S	438	5.59
7	207	5.64
8	207	6.70
9/10	96	6.00
11	151	6.01
Overall	1865	6.23

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

Influenza-Associated Pediatric Mortality

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

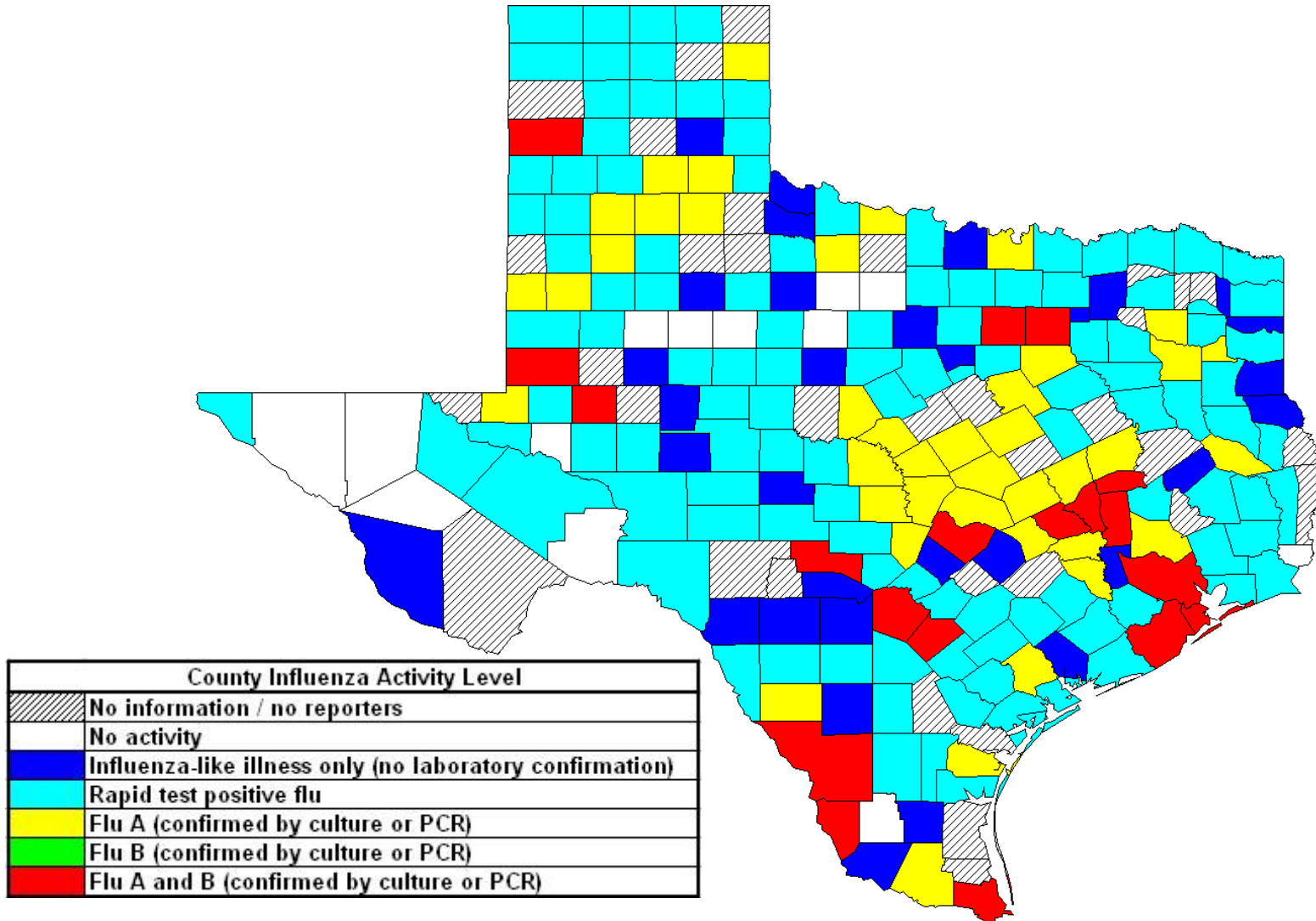
Six influenza-associated pediatric deaths have been reported in Texas during the 2018-2019 influenza season. Cases of influenza-associated pediatric mortality (children <18 years of age) are reportable year-round and by law in Texas.

Table 10: Influenza-Associated Pediatric Deaths Reported in Texas during the 2018-2019 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
2018							
October	1	0	0	0	0	0	1
November	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0
2019							
January	0	0	4	0	0	0	4
February	0	0	1	0	0	0	1
March	0	0	0	0	0	0	0
Total	1	0	5	0	0	0	6

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. 2, 2019 (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/>