



Texas Influenza Surveillance Report 2018-2019 Season/2019 MMWR Week 08

(February 17, 2019 – February 23, 2019)

Report produced on 3/1/2019

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) and the percentage of specimens testing positive for influenza reported by hospital laboratories slightly decreased. No influenza-associated pediatric deaths were reported. Thirteen ILI/influenza-associated outbreaks were reported. In addition to flu, other respiratory viruses—especially rhinovirus/enterovirus—were detected in Texas during week 08.

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	▼ 3.71%	28.75%	32.46%	1
Percentage of visits due to ILI (ILINet)	▼ 0.80%	9.19%	9.99%	4
Number of regions reporting increased flu/ILI activity	No change	3	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	▼ 1	12	13	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 08	Season to Date Week Ending: Feb. 23, 2019
Number of labs reporting flu tests	17	
Number of specimens tested	5009	81775
Number of positive specimens (%)†	1440 (28.75%)	14852 (18.16%)
Percentage of total tests that were antigen detection tests	50.47%	
Positive specimens by type/subtype [n (%)]		
Influenza A	1355 (94.10%)	13781 (92.79%)
Subtyping performed	177 (13.06%)	1293 (9.38%)
A (H1N1)	49 (27.68%)	470 (36.35%)
A (H3N2)	128 (72.32%)	823 (63.65%)
Subtyping not performed	1178 (86.94%)	12488 (90.62%)
Influenza B	85 (5.90%)	1071 (7.21%)

†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

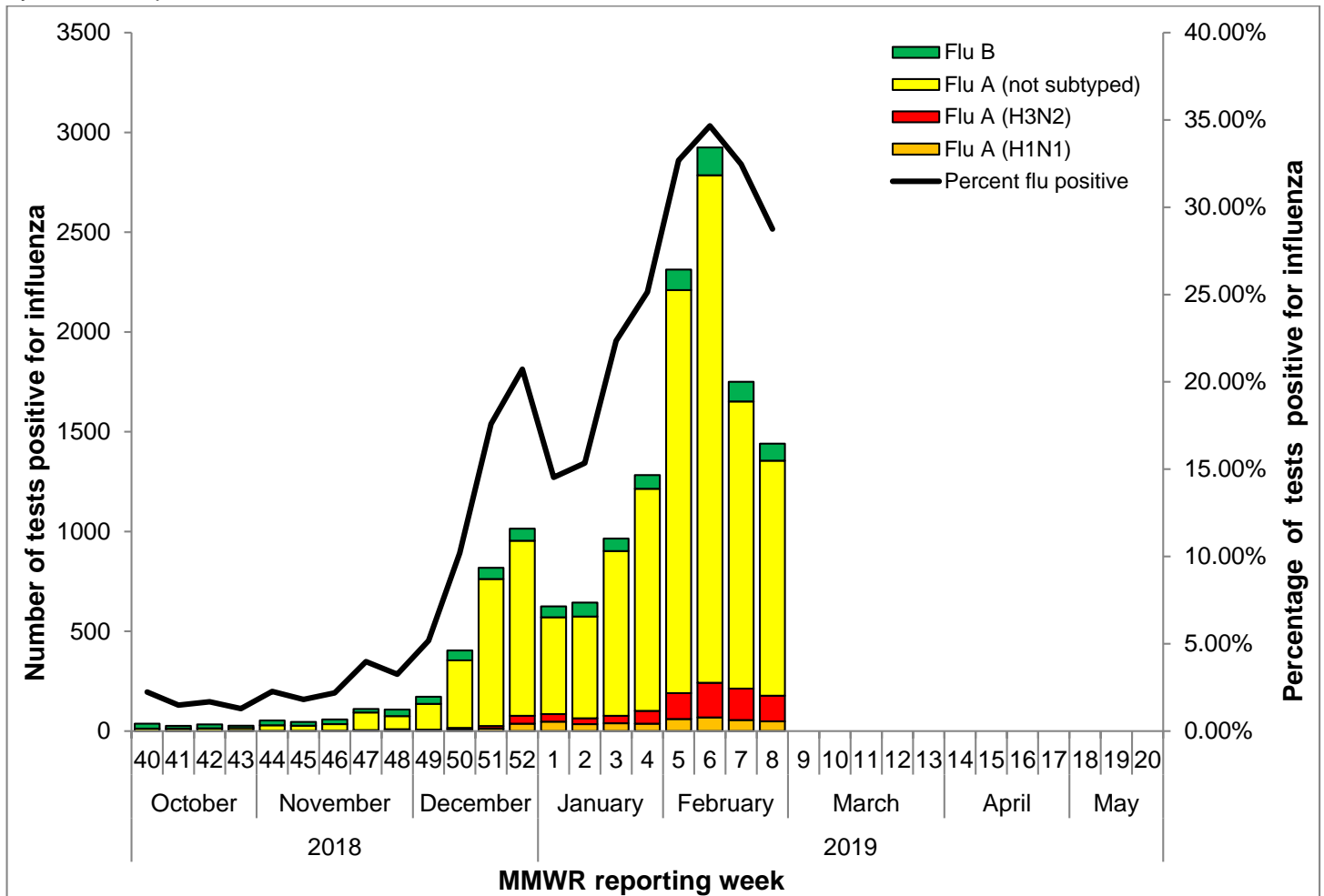


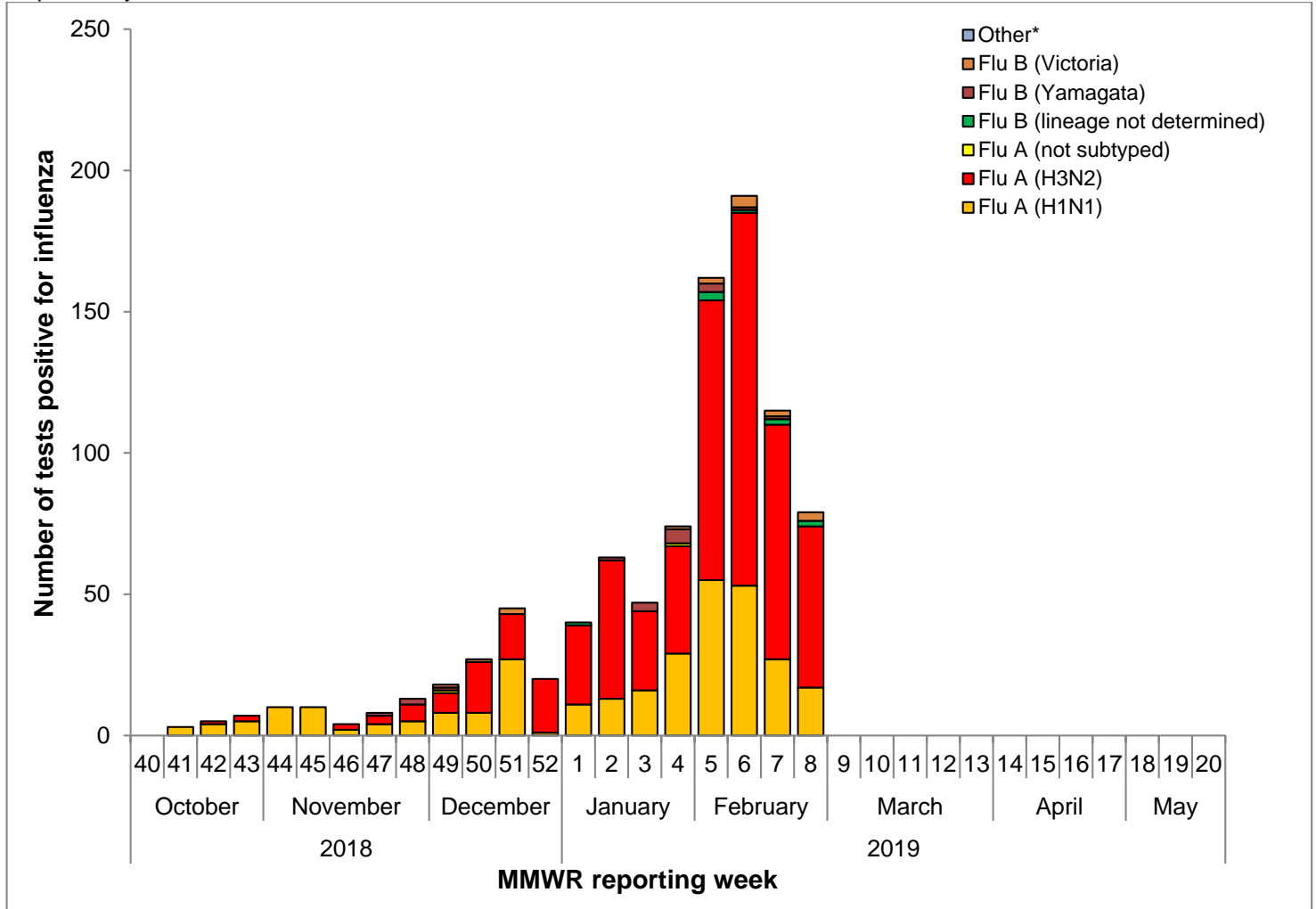
Table 3: Influenza Testing Performed by Texas Public Health Laboratories for the Current Week

	Week 08	Season to Date Week Ending: Feb. 23, 2019
Number of labs reporting flu tests	8	
Number of specimens tested	101	1689
Number of positive specimens (%) [†]	79 (78.22%)	941 (55.71%)
Positive specimens by type/subtype/lineage [n (%)]		
Influenza A	74 (93.67%)	898 (95.43%)
Subtyping performed	74 (100.00%)	896 (99.78%)
A (H1N1)	17 (22.97%)	308 (34.38%)
A (H3N2)	57 (77.03%)	588 (65.62%)
Subtyping not performed	0 (0.00%)	2 (0.22%)
Influenza B	5 (6.33%)	43 (4.57%)
Lineage testing performed	3 (60.00%)	34 (79.07%)
B/Victoria	3 (100.00%)	16 (47.06%)
B/Yamagata	0 (0.00%)	18 (52.94%)
Lineage testing not performed	2 (40.00%)	9 (20.93%)
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	1264	74	5.85%
HMPV	11	1410	87	6.17%
Parainfluenza virus	11	1697	114	6.72%
Rhinovirus	10	993	201	20.24%
RSV ^{†^}	17	2553	109	4.27%
Seasonal coronavirus (does not include MERS-CoV)	6	842	47	5.58%

[†]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 three influenza A (H3N2) viruses, ten influenza A (H1N1) viruses and one 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) [3]

- Three (100%) 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) [10]

- Ten (100%) 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 [1]

- Victoria lineage [0]
- Yamagata lineage [1]
 - One (100%) virus 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 08
Number of providers reporting [†]	107
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	9.19%
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 2/28/2019 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	112	294	1479	587	201	78	2639	30601	8.62%
201906	114	356	1852	715	255	78	3256	32218	10.11%
201907	111	356	1649	770	216	103	3094	30983	9.99%
201908	107	308	1340	759	260	67	2734	29758	9.19%

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

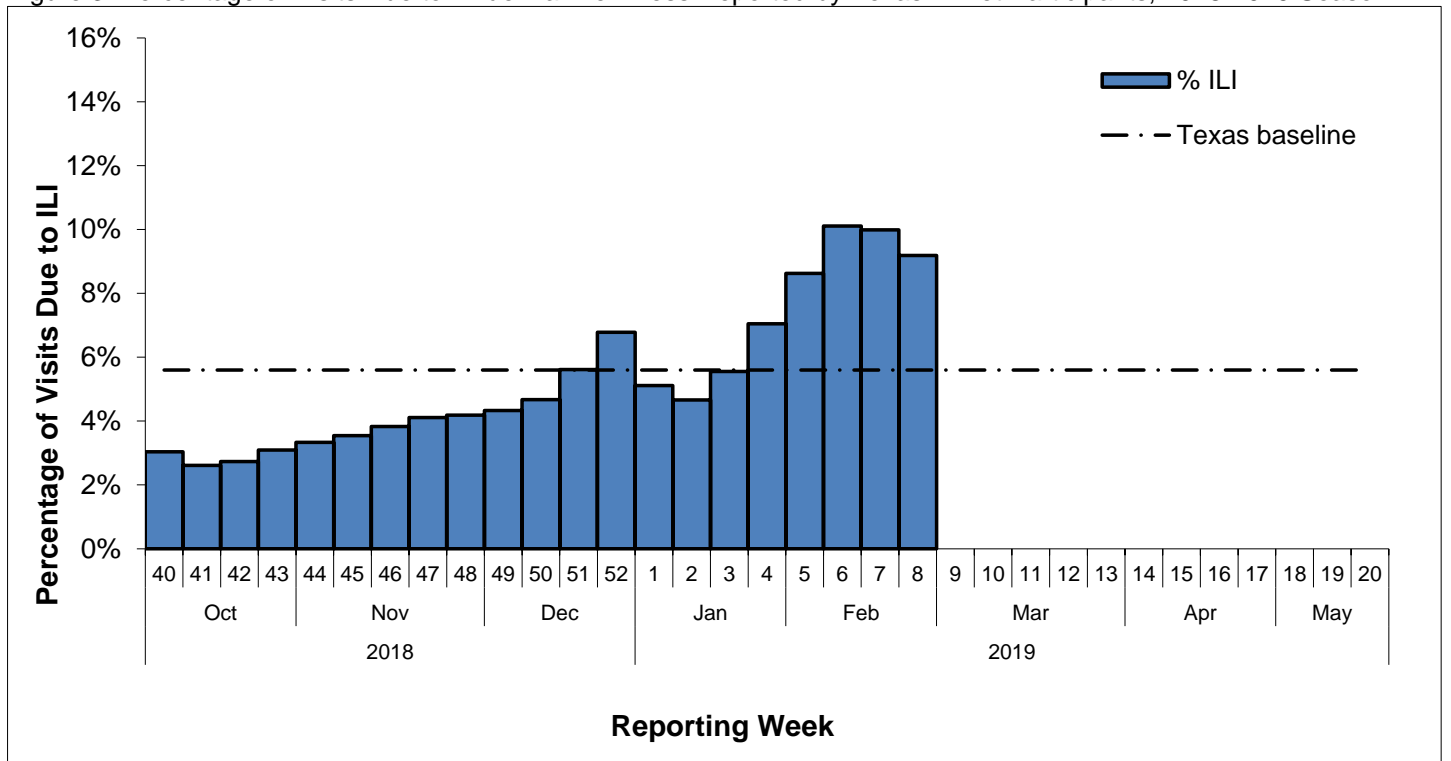
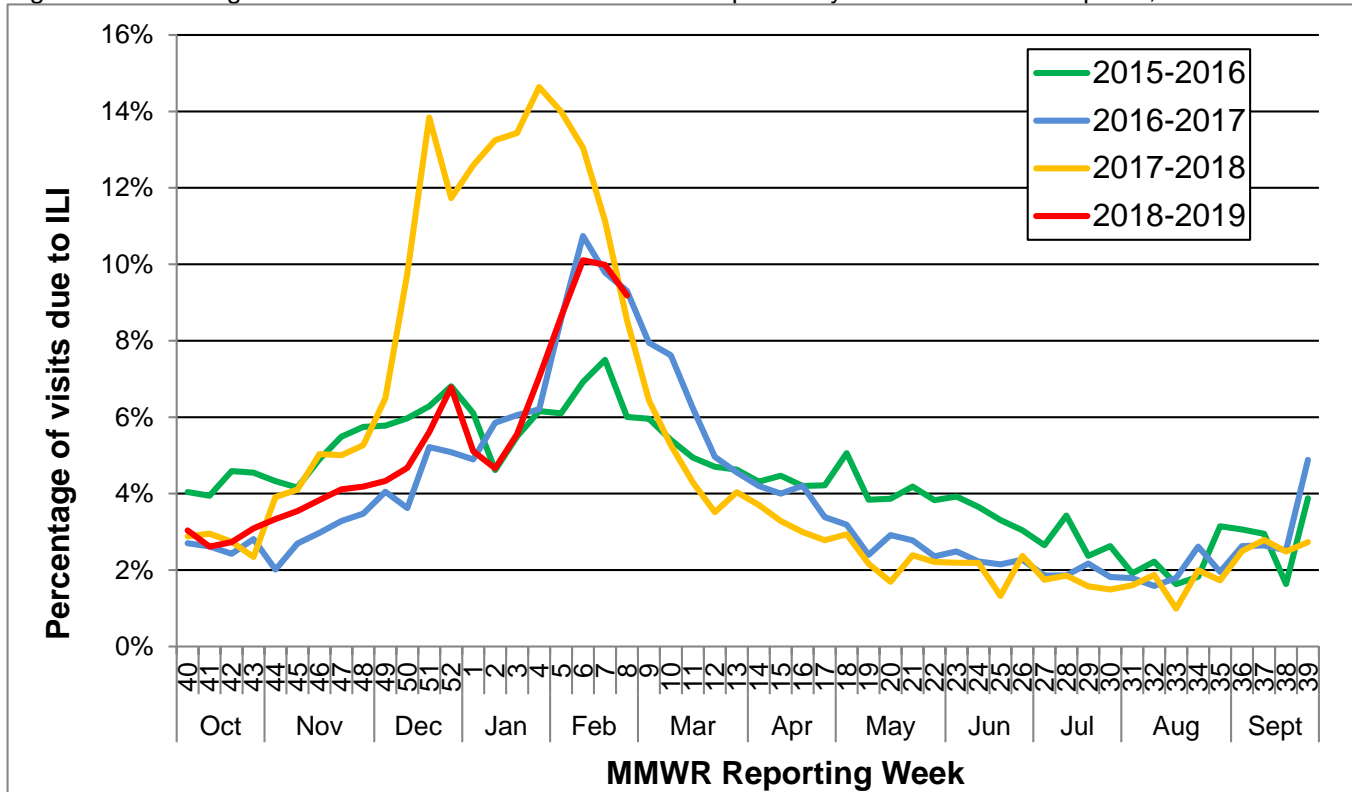


Figure 4: Percentage of Visits Due to Influenza-like Illness Reported by Texas ILINet Participants, 2015–2019 Seasons



Reports from Health Service Regions

Reports were received from all Health Service Regions (HSRs) during week 08.

Table 7: Influenza Activity Compared to week 07 by Health Service Region (HSR)

Influenza Activity Comparison	Health Service Region (HSR)
Increased	1, 7, and 11
Same	9/10
Decreased	2/3, 4/5N, 6/5S, and 8
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

Eight institutional outbreaks were reported in four different HSRs during week 08 in long-term care facilities. Five outbreaks were reported in HSR 2/3. The first outbreak had five residents tested positive for influenza A by an unknown test type. The second outbreak had eight residents test positive for influenza A by an unknown test type. The third outbreak had one resident test positive for influenza A by rapid test and one test positive for influenza A by PCR. The third outbreak had three residents test positive for influenza A by an unknown test type. The final outbreak in HSR 2/3 had 18 residents and 6 staff report symptoms of ILI. Of those, 17 residents and 6 staff tested positive for influenza A by either rapid test or PCR. One influenza-associated outbreak was reported in HSR 6/5S. Five residents tested positive for influenza A by an unknown test type. One outbreak was reported in HSR 7. Four residents and 6 staff tested positive for influenza A by PCR. The final outbreak was reported in HSR 8. Three residents and 4 staff tested positive for influenza A by PCR. Control measures included isolation of the ill and prophylaxis given, among other control measures.

Four school outbreaks were reported in two different HSRs during week 08. Two outbreak were reported in HSR 2/3. In the first outbreak, 41 students and 2 staff reported symptoms of ILI. The second outbreak reported 47 students with symptoms of ILI. Two outbreaks were reported in HSR 7. The first outbreak had 80 students and five staff report symptoms of ILI. The second outbreak in HSR 7 reported 50 students and 2 staff with symptoms of ILI.

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 08.

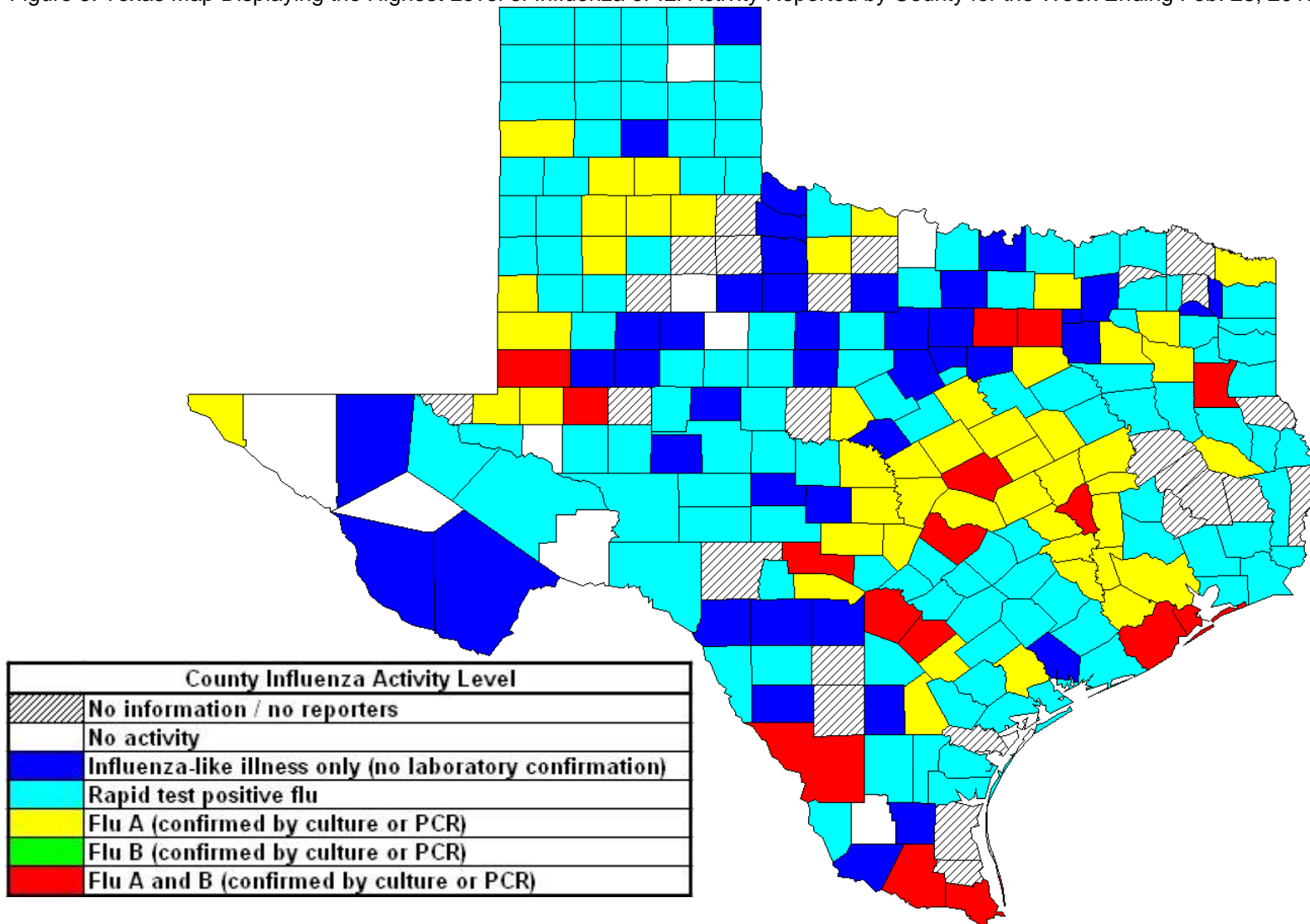
Six influenza-associated pediatric deaths have been reported in Texas during the 2018-2019 influenza season. Cases of influenza-associated pediatric mortality (children <18 years of age) are reportable year-round and by law in Texas.

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
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 Feb. 23, 2019 (MMWR Week 08)



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/>