



## Texas Influenza Surveillance Report 2016–2017 Season/2017 MMWR Week 11

(Mar. 12, 2017 – Mar. 18, 2017)  
Report produced on 03/24/2017

### Summary

Influenza (flu) activity has slightly decreased the past few weeks in Texas; it appears to have peaked in mid-February. Compared to the previous week, the percentage of specimens testing positive for influenza reported by hospital laboratories and patient visits due to influenza-like illness (ILI) marginally decreased while the amount of specimens testing positive for influenza reported by public health laboratories slightly increased. Ten outbreaks due to influenza were reported. All but two of the outbreaks concluded in previous weeks. No influenza-associated pediatric deaths were reported. In addition to flu, other respiratory viruses—especially rhino/enteroviruses—were detected in Texas during week 11.

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 <sup>†</sup>	Page of Report
Statewide influenza activity level reported to CDC (geographic spread of influenza)	No Change	Regional	Regional	--
Statewide ILINet Activity Indicator assigned by CDC (intensity of influenza-like illness)	Decreased	Moderate	High	--
Percentage of specimens positive for influenza by hospital laboratories	▼4.75%	18.36%	23.11% <sup>†</sup>	1
Percentage of specimens positive for influenza by public health laboratories	▲8.81%	70.91%	62.10% <sup>†</sup>	2
Percentage of visits due to ILI (ILINet)	▼1.32%	6.27%	7.59% <sup>†</sup>	4
Number of regions reporting increased flu/ILI activity	No change	1	1	6
Number of regions reporting decreased flu/ILI activity	▲1	5	4	6
Number of variant/novel influenza infections	No change	0	0	6
Number of ILI/influenza outbreaks	▲6	10	4	7
Number of pediatric influenza deaths	No new cases reported	0	0	7

<sup>†</sup>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 11	Season to Date
Number of labs reporting flu tests	14	
Number of specimens tested	2892	68587
Number of positive specimens (%) <sup>†</sup>	531 (18.36%)	11204 (16.34%)
Percentage of total tests that were antigen detection tests	53.15%	
<b>Positive specimens by type/subtype [n (%)]</b>		
<b>Influenza A</b>	<b>337 (63.47%)</b>	<b>8835 (78.86%)</b>
Subtyping performed	86 (25.52%)	2052 (23.23%)
A (H1N1)	17 (19.77%)	329 (16.03%)
A (H3N2)	69 (80.23%)	1723 (83.97%)
Subtyping not performed	251 (74.48%)	6783 (76.77%)
<b>Influenza B</b>	<b>194 (36.53%)</b>	<b>2369 (21.14%)</b>

<sup>†</sup>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

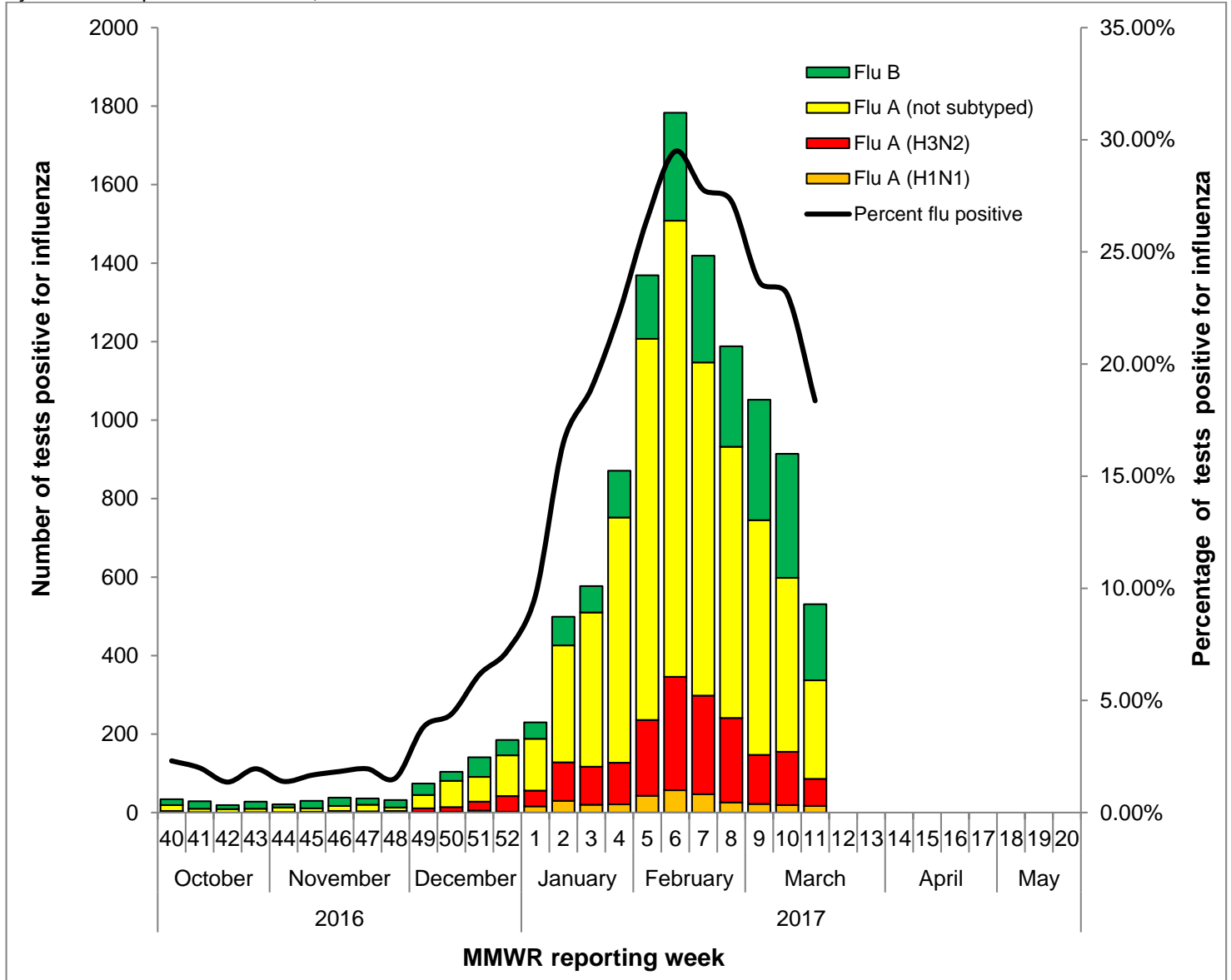
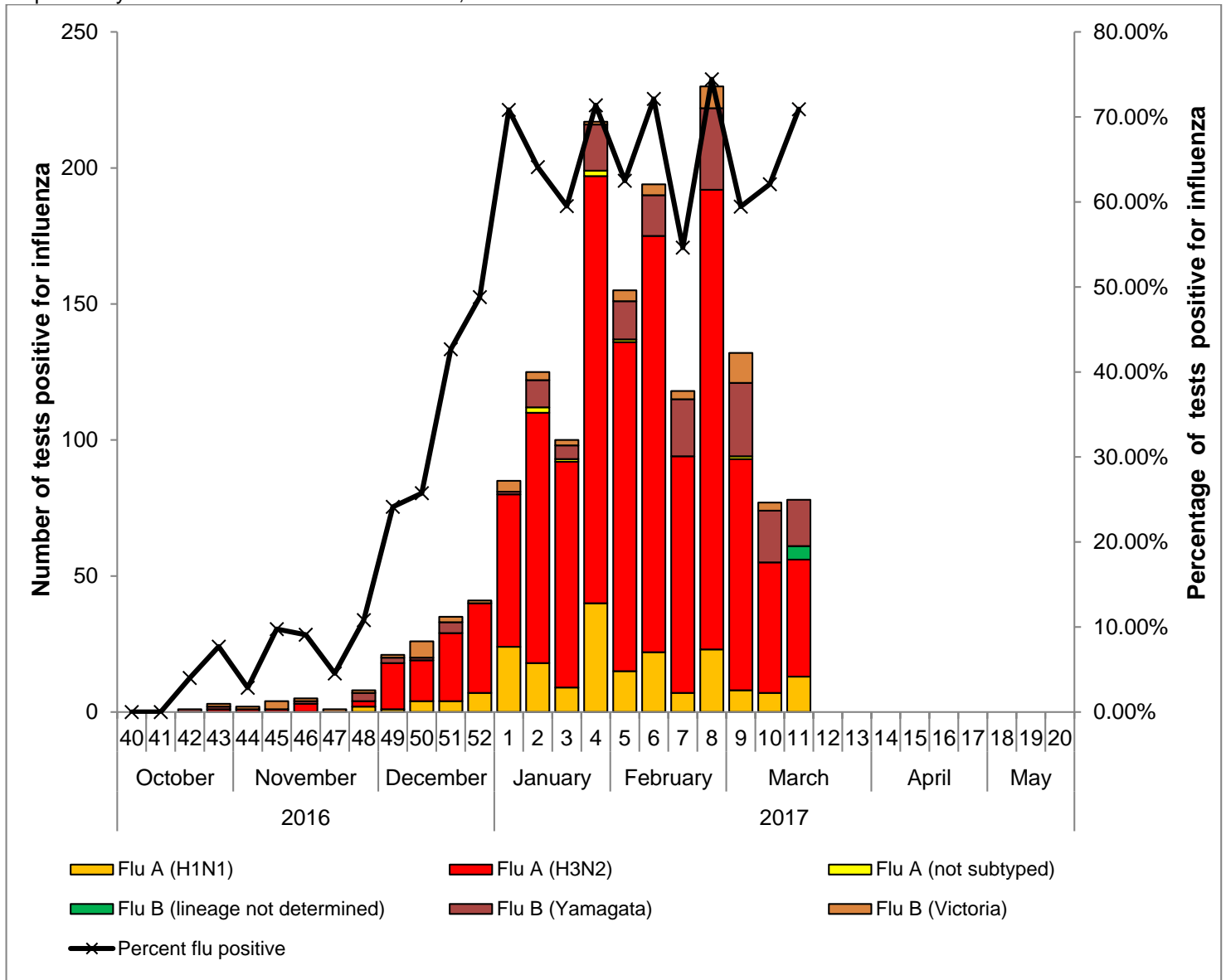


Table 3: Influenza Testing Performed by Texas Public Health Laboratories for the Current Week

	Week 11	Season to Date
Number of labs reporting flu tests	7	
Number of specimens tested	110	3009
Number of positive specimens (%) <sup>†</sup>	78 (70.91%)	1659 (55.13%)
Positive specimens by type/subtype/lineage [n (%)]		
<b>Influenza A</b>	<b>56 (71.79%)</b>	<b>1403 (84.57%)</b>
Subtyping performed	56 (100.00%)	1396 (99.50%)
A (H1N1)	13 (23.21%)	204 (14.61%)
A (H3N2)	43 (76.79%)	1192 (85.39%)
Subtyping not performed	0 (0.00%)	7 (0.50%)
<b>Influenza B</b>	<b>22 (28.21%)</b>	<b>256 (15.43%)</b>
Lineage testing performed	17 (77.27%)	250 (97.66%)
B/Victoria	0 (0.00%)	61 (24.40%)
B/Yamagata	17 (100.00%)	189 (75.60%)
Lineage testing not performed	5 (22.73%)	6 (2.34%)

<sup>†</sup>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)	8	1100	32	2.91%
HMPV	9	1009	84	8.33%
Parainfluenza virus	9	1281	69	5.39%
Rhinovirus	8	911	157	17.23%
RSV <sup>†</sup>	14	1521	122	8.02%
Seasonal coronavirus (does not include MERS-CoV)	6	862	65	7.54%

<sup>†</sup>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.

<sup>^</sup>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 nineteen influenza A (H3N2) viruses, fifteen influenza A (H1N1) viruses and twenty three 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) [19]**

- Eighteen (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) [15]**

- Fifteen (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 [23]**

- Victoria lineage [12]: Twelve (52.17%) 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 [11]: Eleven (47.83 %) 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 11	
Number of providers reporting <sup>†</sup>	100
Number of providers reporting patient visits	98
Number (%) of providers with at least one ILI case	91(92.86%)
Percentage of all visits due to ILI	6.27%
Texas ILINet baseline <sup>‡</sup> , 2016–2017	6.64%

<sup>†</sup>Reporting providers include both ILINet and RVSP providers.

<sup>‡</sup>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 03/23/17 10:20 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+			
201640	201640	125	166	345	142	106	145	904	33457
201641	201641	123	140	303	151	87	137	818	31233
201642	201642	119	132	263	127	118	109	749	30871
201643	201643	119	138	314	149	139	125	865	30754
201644	201644	112	115	295	102	36	33	581	28878
201645	201645	121	153	273	167	104	133	830	30824
201646	201646	121	186	357	143	116	148	950	31953
201647	201647	119	146	215	141	115	116	733	22334
201648	201648	117	197	302	185	165	192	1041	29957
201649	201649	118	226	337	219	182	196	1160	28629
201650	201650	112	241	377	184	93	67	962	26540
201651	201651	113	232	342	316	210	200	1300	24910
201652	201652	114	180	233	357	220	185	1175	23112

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	117	400	1719	938	476	326	3859	36084	10.69%
201707	90	170	1226	759	435	255	2845	29008	9.81%
201708	107	316	1183	733	389	218	2839	30804	9.22%
201709	108	265	1019	665	318	223	2490	31703	7.85%
201710	106	204	954	635	327	202	2322	30607	7.59%
201711	100	192	476	448	241	144	1501	23928	6.27%

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

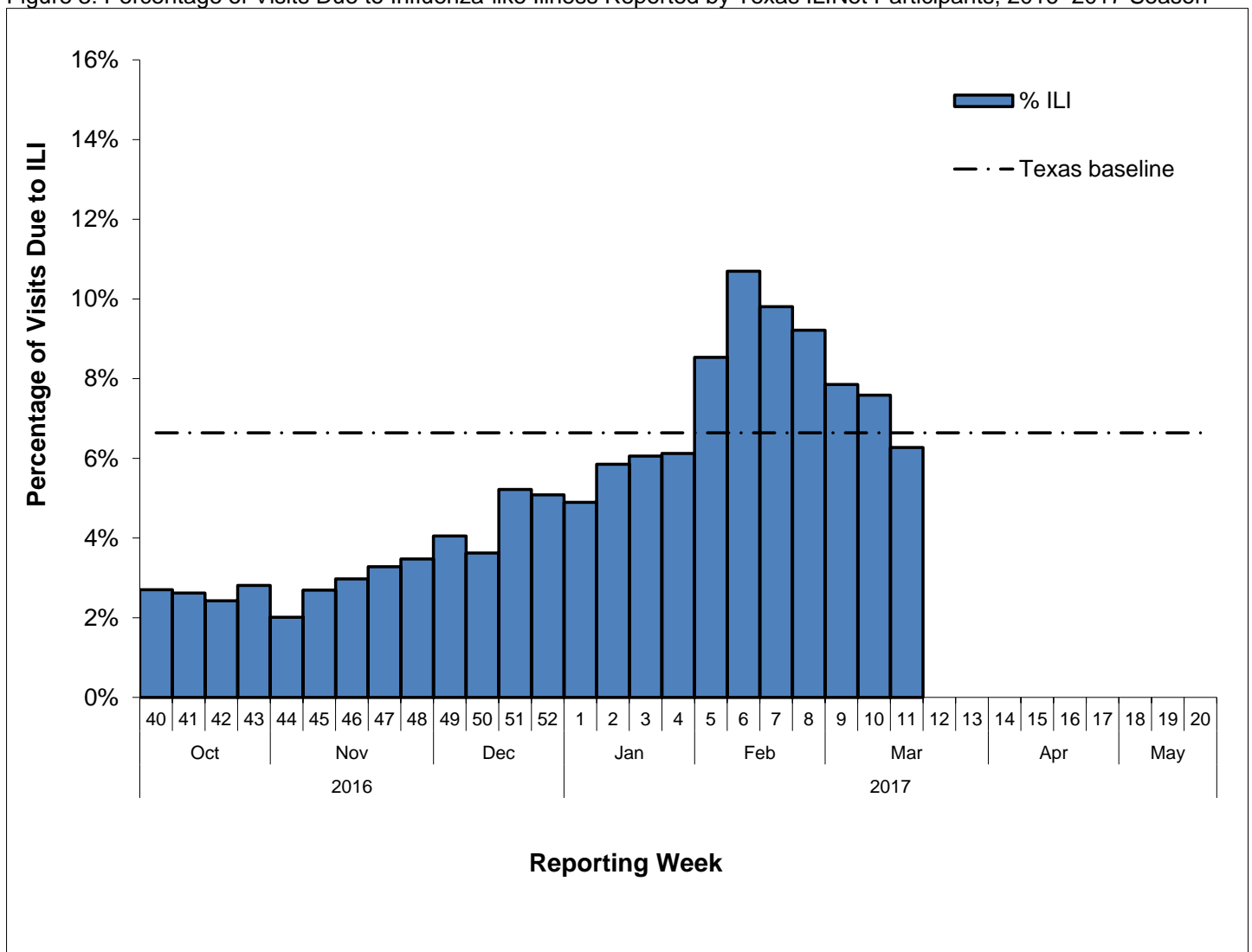
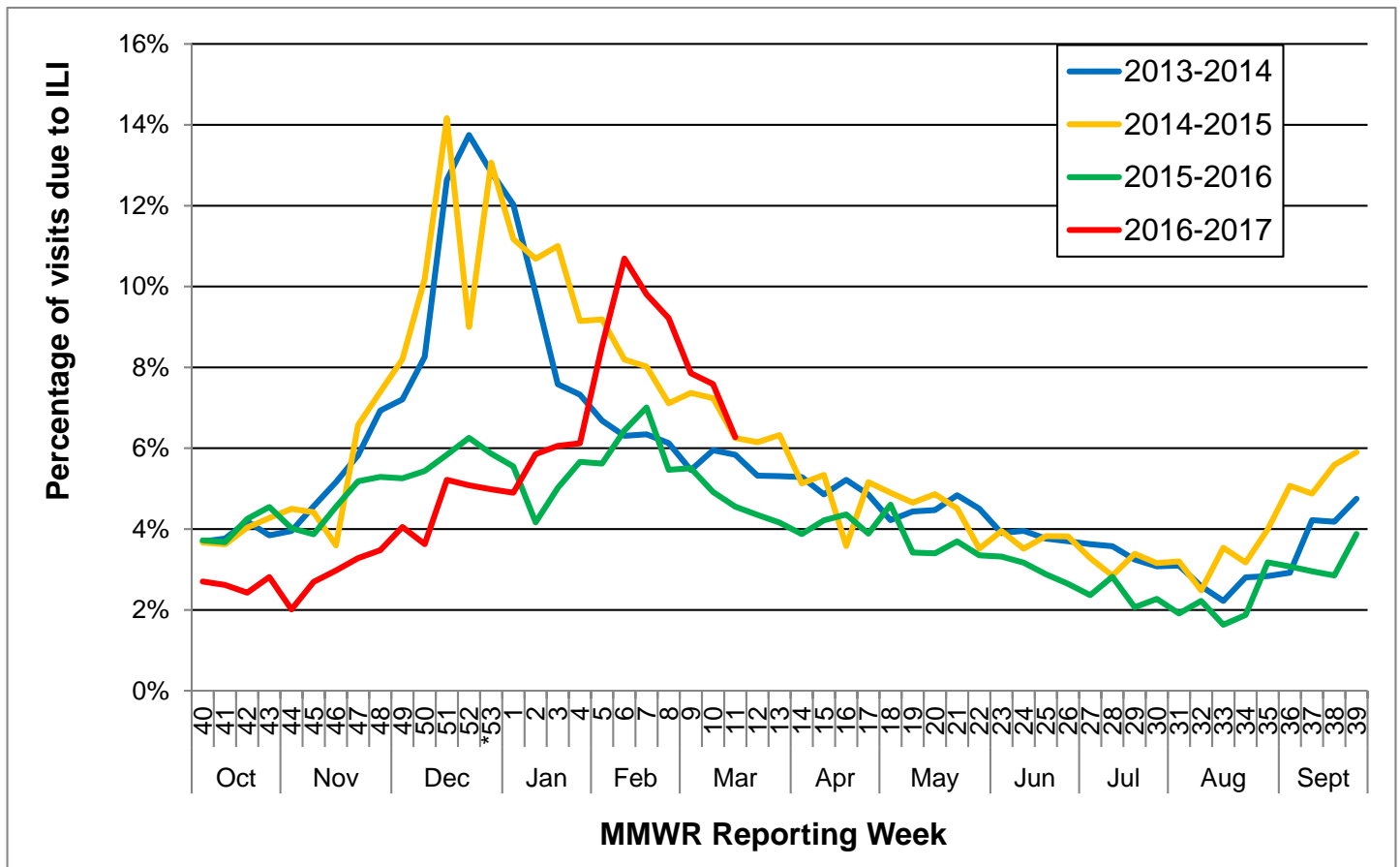


Figure 4: Percentage of Visits Due to Influenza-like Illness Reported by Texas ILINet Participants, 2013–2017 Seasons\*



\*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 11.

Table 7: Influenza Activity Compared to Week 10 by Health Service Region (HSR)

Influenza Activity Comparison	
Increased	1
Same	4/5N and 8
Decreased	2/3, 6/5S, 7, 9/10, 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 11, ten institutional influenza outbreaks were reported in four different regions. All but two outbreaks concluded before week 11. There were four outbreaks reported in HSR 2/3. The first outbreak at a long-term care facility reported 12 residents and 6 staff with symptoms of flu. Seven individuals tested positive for influenza A and one tested positive for influenza B by rapid test. The second outbreak reported in HSR 2/3 was at a hospital. Eight patients and eight staff reported having symptoms of flu. All 8 patients and seven staff members tested positive for influenza by rapid test. The third outbreak in HSR 2/3 was at a long-term care facility. Five individuals reported symptoms of ILI. The fourth outbreak in HSR 2/3 was reported at a long-term care facility. Seven individuals reported symptoms of ILI. Four outbreaks were reported in HSR 7. The first outbreak was reported at a long-term care facility. Seventeen residents reported symptoms of influenza. All seventeen were tested for influenza but only 11 were positive. In addition, thirteen were tested for *Streptococcus pneumoniae* with four that tested positive. The second outbreak in HSR 7 was reported at long-term care facility. Sixteen residents reported symptoms of influenza. Eight of the residents tested positive for influenza A by rapid test. The third outbreak in HSR 7 was reported at a long-term care facility. Eleven residents and three staff reported symptoms. Four residents and 1 staff member tested positive for influenza by rapid test. The fourth outbreak in HSR 7 was at a long-term care facility. Twenty-three residents and five staff reported symptoms. Nine residents tested positive for influenza A by PCR. One outbreak was reported in HSR 8 at a long-term care facility. Four residents reported symptoms. Three of the residents tested positive for influenza A by PCR and one tested positive for influenza A by PCR. One influenza outbreak was reported at a long-term care facility in HSR 9/10. Thirty-five individuals reported symptoms of influenza. Four residents tested positive for influenza A (H3) by PCR and 9 tested positive for influenza A by rapid test. 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.

No school closures were reported during week 11.

## 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.

Four thousand two hundred and twenty-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. 22, 2017\* by Age

Age Category (years)	Number of P&I Deaths <sup>+</sup>	Mortality Rate (per 100,000)
0 - 4	19	0.92
5 - 17	11	0.20
18 - 49	226	1.77
50 - 64	679	13.45
65 +	3290	93.67
Overall	4225	14.67

\*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. 22, 2017\* by Health Service Region (HSR)

HSR	Number of P&I Deaths <sup>+</sup>	Mortality Rate (per 100,000)
1	172	18.90
2/3	1144	13.74
4/5N	313	19.50
6/5S	964	12.83
7	479	13.70
8	476	15.98
9/10	234	15.07
11	443	18.33
Overall	4225	14.67

\*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 11.

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.

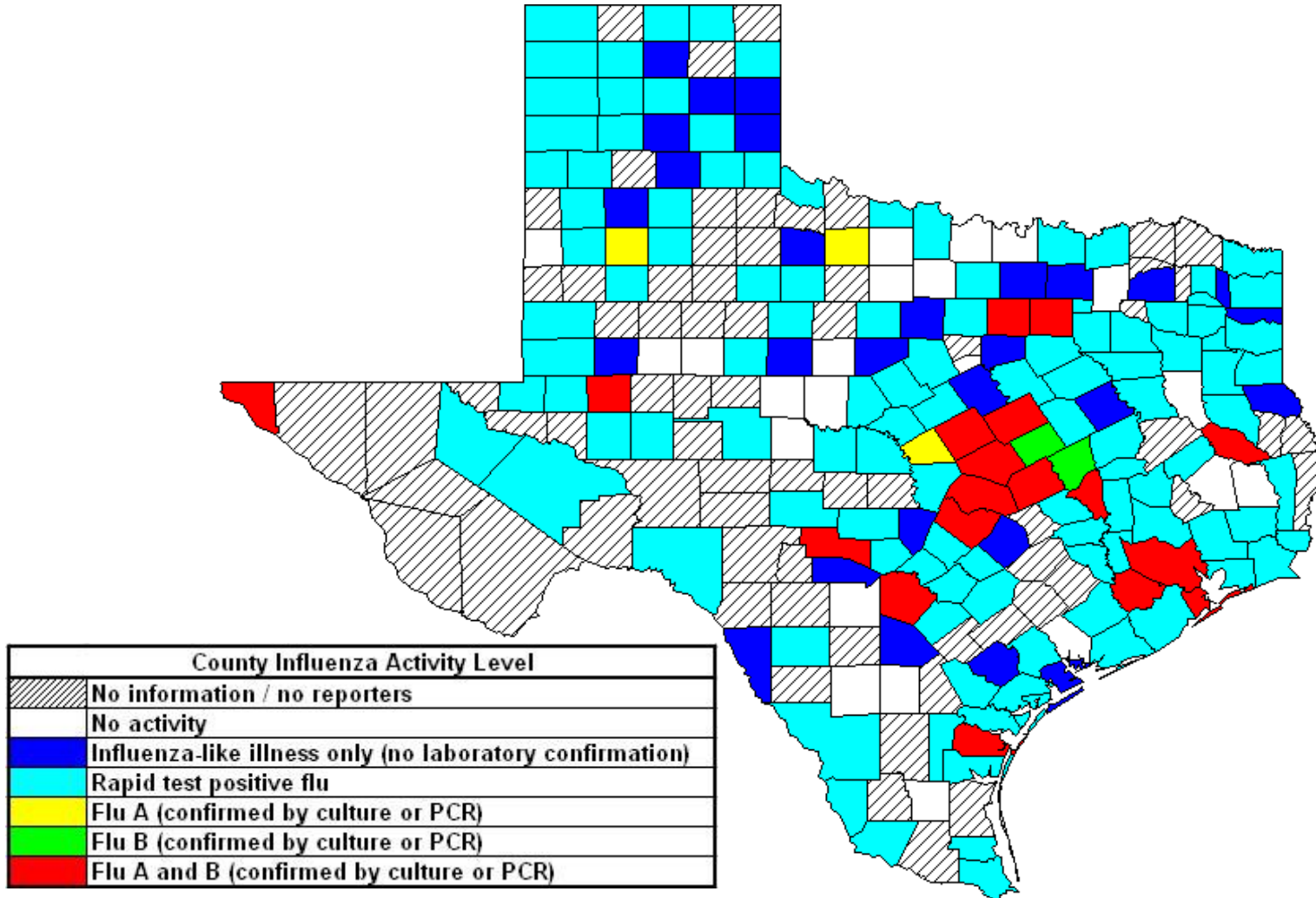
Table 10: Influenza-Associated Pediatric Deaths Reported in Texas during the 2016–2017 Season

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
<b>2016</b>							
October	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0
<b>2017</b>							
January	0	0	0	0	0	0	0
February	1	1	0	0	0	0	2
March	0	0	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>



## 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. 18, 2017 (MMWR Week 11)



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/>