

## Texas Influenza Surveillance Report 2014–2015 Season/2015 MMWR Week 16

(April 19, 2015 – April 25, 2015)

Report produced on 5/01/2015

### Summary

Influenza activity is low in Texas. Texas influenza laboratory data demonstrated a slight decrease compared to last week. Influenza-like illness (ILI) activity marginally increased compared to last week, but remained below the 2014-2015 state ILINet baseline of 5.42%.

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)	Decreased	Sporadic	Local	--
Statewide ILINet Activity Indicator assigned by CDC (intensity of influenza-like illness)	No change	Minimal	Minimal	--
Percentage of specimens positive for influenza	▼0.21%	2.48%	2.69% <sup>†</sup>	1
Percentage of visits due to ILI (ILINet)	▲0.75%	4.13%	3.38% <sup>†</sup>	3
Number of regions reporting increased flu/ILI activity	▼1	0	1	5
Number of regions reporting decreased flu/ILI activity	▼2	2	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 pediatric influenza deaths	New Cases Reported	2	0	6

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

### Laboratory Results

#### *Influenza*

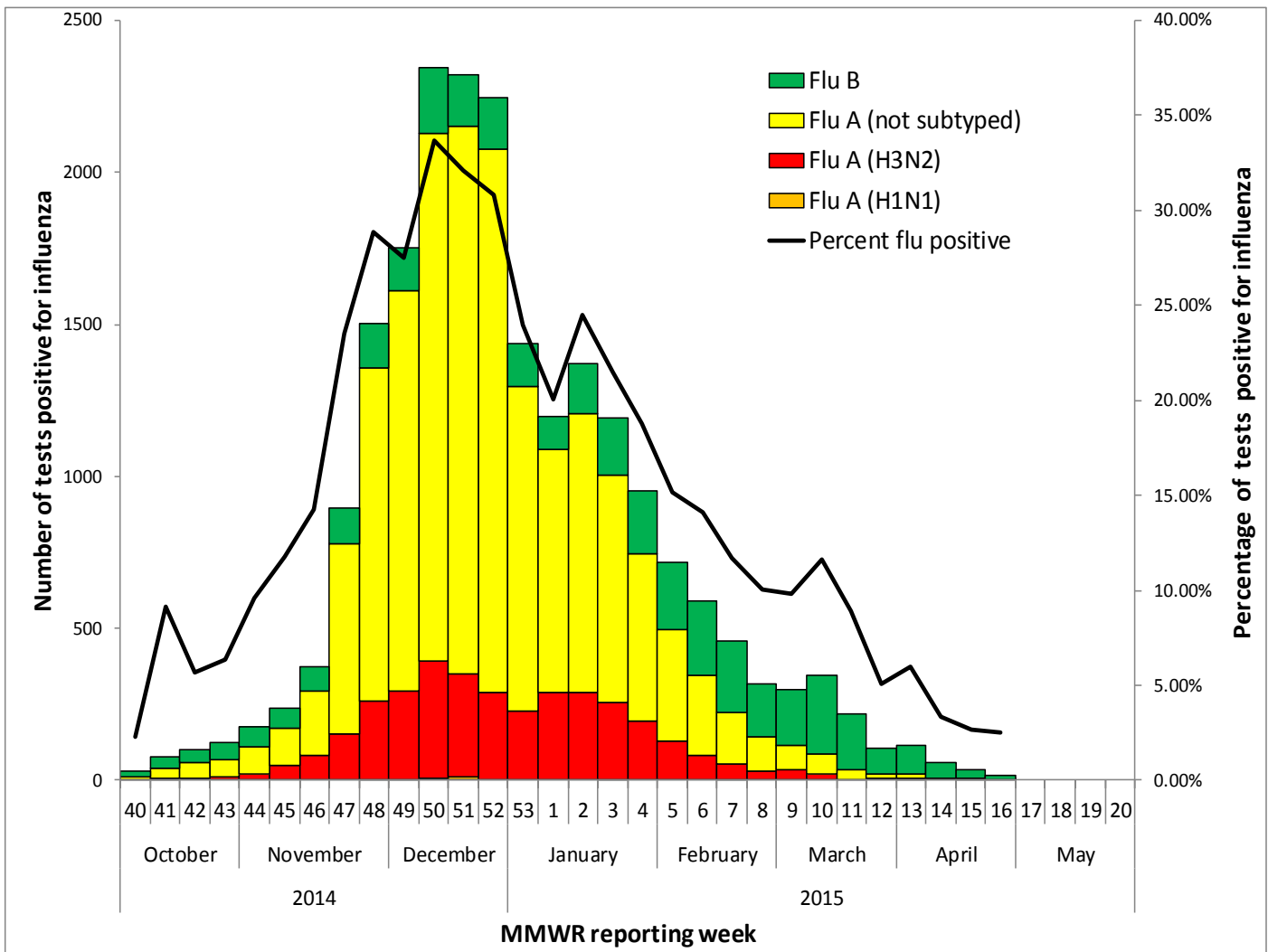
Hospital laboratories across Texas voluntarily report influenza tests (antigen, culture, and PCR) to the National Respiratory and Enteric Virus Surveillance System (NREVSS). Providers throughout Texas also submit specimens for influenza testing (PCR) to Texas public health laboratories, including the 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 is summarized in the table 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 Laboratories for the Current Week

	Week 16
Number of labs reporting flu tests	14
Number of specimens tested	726
Number of positive specimens (%) <sup>†</sup>	18 (2.48%)
Percentage of total tests that were antigen detection tests	58.13%
<b>Positive specimens by type/subtype [n (%)]</b>	
<b>Influenza A</b>	<b>2 (11.11%)</b>
Subtyping performed	0 (0.00%)
A (H1N1)	0 (0.00%)
A (H3N2)	0 (0.00%)
Subtyping not performed	2 (100.00%)
<b>Influenza B</b>	<b>16 (88.89%)</b>

<sup>†</sup>Laboratory data in 2014-2015 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 and Subtype Reported by Texas Laboratories, 2014–2015 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), 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	284	15	5.28%
HMPV	5	265	18	6.79%
Parainfluenza virus	6	284	19	6.69%
Rhinovirus	4	249	54	21.69%
RSV <sup>†^</sup>	11	404	12	2.97%

<sup>†</sup>RSV tests displayed in the table are antigen detection tests only. 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 September 28, 2014, CDC has reported antigenic characterization results from 36 influenza A (H3N2) viruses and 37 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 (H3N2) [36]

- Three (8.3%) viruses were related to A/Texas/50/2012, the influenza A (H3N2) component of the 2014-2015 Northern Hemisphere influenza vaccine.
- Thirty-one (86.1%) viruses tested showed reduced titers with antiserum produced against A/Texas/50/2012 and were antigenically similar to A/Switzerland/9715293/2013, the H3N2 virus selected for the 2015 Southern Hemisphere influenza vaccine. A/Switzerland/9715293/2013 is related to, but antigenically and genetically distinguishable, from the A/Texas/50/2012 vaccine virus. A/Switzerland-like H3N2 viruses were first detected in the United States in small numbers in March of 2014 and began to increase through the spring and summer.
- Two (5.6%) viruses tested showed reduced titers with antiserum produced against A/Texas/50/2012 and A/Switzerland/9715293/2013.

#### Influenza B [37]

- Yamagata lineage [14]: Thirteen (35.1%) influenza B/Yamagata-lineage virus has been characterized from Texas. A B/ Massachusetts/2/2012-like virus is included as an influenza B component of the 2014-2015 Northern Hemisphere trivalent and quadrivalent influenza vaccines. One (2.7%) of the B/Yamagata-lineage viruses tested showed reduced titers to B/Massachusetts/2/2012. It is expected that a proportion of all isolates tested will exhibit somewhat reduced titers compared with the homologous titer for the reference strain.
- Victoria lineage [23]: Twenty-three (62.2%) influenza B/Victoria-lineage viruses were characterized as B/Brisbane/60/2008-like, which is included as an influenza B component of the 2014-2015 Northern Hemisphere quadrivalent influenza vaccine.

### Antiviral Resistance

Table 4 displays the number of influenza viruses from Texas that have been tested for antiviral resistance since September 28, 2014. No influenza viruses have tested positive for mutations that confers resistance to oseltamivir, zanamivir, or peramivir.

Table 4: Cumulative Antiviral Resistance Results from Texas Influenza Viruses, 2014-2015 Season<sup>†</sup>

	Oseltamivir		Zanamivir		Peramivir <sup>^</sup>	
	Virus samples tested (n)	Resistant viruses, number (%)	Virus samples tested (n)	Resistant viruses, number (%)	Virus samples tested (n)	Resistant viruses, number (%)
Influenza A (H1N1)	0	0 (0%)	0	0 (0%)	0	0 (0%)
Influenza A (H3N2)	96	0 (0%)	96	0 (0%)	96	0 (0%)
Influenza B	21	0 (0%)	21	0 (0%)	21	0 (0%)

<sup>†</sup>This table includes specimens submitted as part of routine surveillance and not for diagnostic purposes.

<sup>^</sup> 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 16
Number of providers reporting <sup>†</sup>	98
Number of providers reporting patient visits	94
Number (%) of providers with at least one ILI case	73 (77.66%)
Percentage of all visits due to ILI	4.13%
Texas ILINet baseline <sup>‡</sup> , 2014–2015	5.42%

<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 4/30/2015 10:53 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+			
201440	112	160	384	313	112	93	1062	28992	3.66%
201441	112	181	390	312	139	93	1115	30402	3.67%
201442	112	237	430	296	133	94	1190	29486	4.04%
201443	116	210	475	368	136	103	1292	30221	4.28%
201444	114	207	495	363	109	116	1290	28667	4.50%
201445	117	211	522	346	119	90	1288	29165	4.42%
201446	83	249	387	103	32	22	793	22064	3.59%
201447	110	294	858	426	109	31	1718	26133	6.57%
201448	111	260	702	472	108	45	1587	21456	7.40%
201449	117	380	1011	680	288	221	2580	31461	8.20%
201450	119	459	1576	677	268	209	3189	31306	10.19%
201451	100	556	1611	715	280	210	3372	23802	14.17%
201452	86	416	666	256	133	137	1608	17869	9.00%
201453	97	417	573	750	329	220	2289	17517	13.07%
201501	101	388	774	791	372	311	2636	23584	11.18%
201502	108	478	1361	923	279	94	3135	29338	10.69%
201503	108	507	1417	946	277	102	3249	29443	11.03%
201504	114	435	1246	813	253	94	2841	30968	9.17%
201505	118	407	1240	760	327	200	2934	31757	9.24%
201506	116	340	1049	736	301	193	2619	31785	8.24%
201507	115	350	906	692	330	225	2503	31042	8.06%
201508	117	272	827	582	245	189	2115	29542	7.16%
201509	117	323	931	624	255	181	2314	31187	7.42%
201510	117	292	703	612	280	187	2074	28663	7.24%
201511	118	268	534	549	224	164	1739	28264	6.15%
201512	115	251	587	568	234	197	1837	30124	6.10%
201513	108	200	555	453	229	198	1635	26423	6.19%
201514	108	210	446	343	252	162	1413	28495	4.96%
201515	105	157	310	177	134	148	926	27417	3.38%
201516	98	159	262	225	140	162	948	22971	4.13%

Figure 2: Percentage of Visits Due to Influenza-like Illness Reported by Texas ILINet Participants, 2014–2015 Season

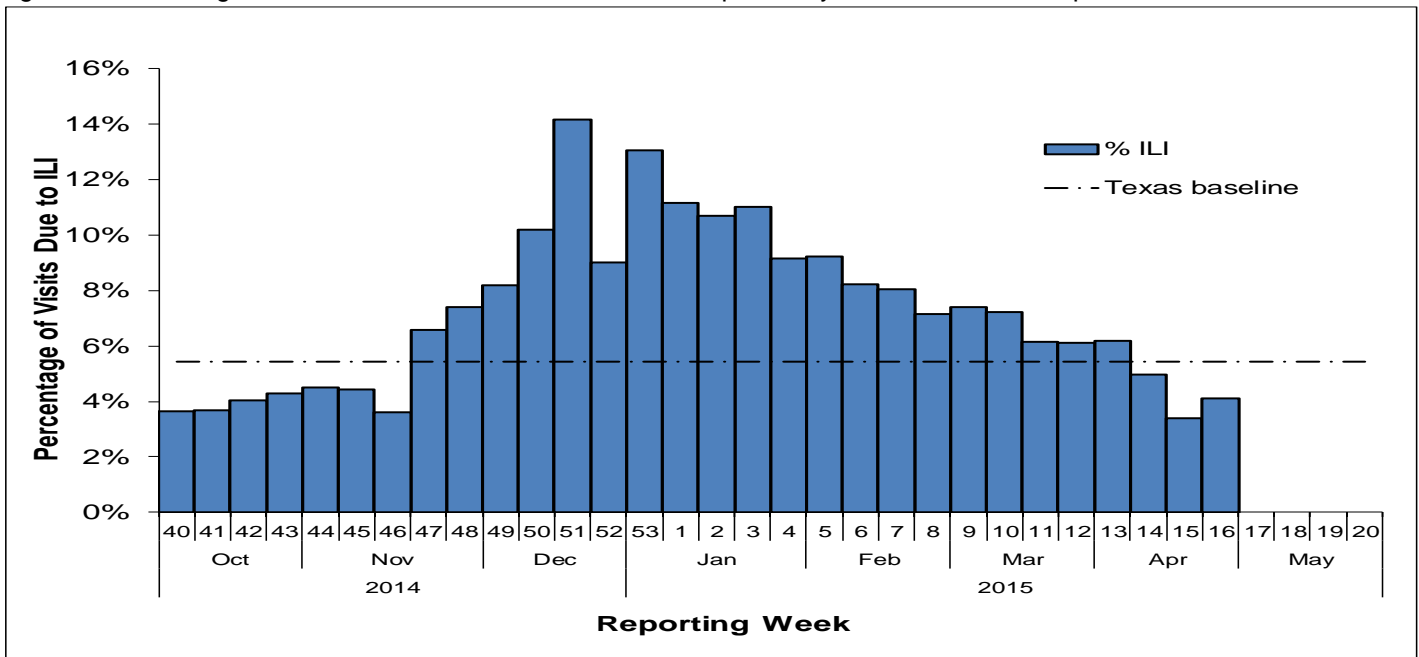
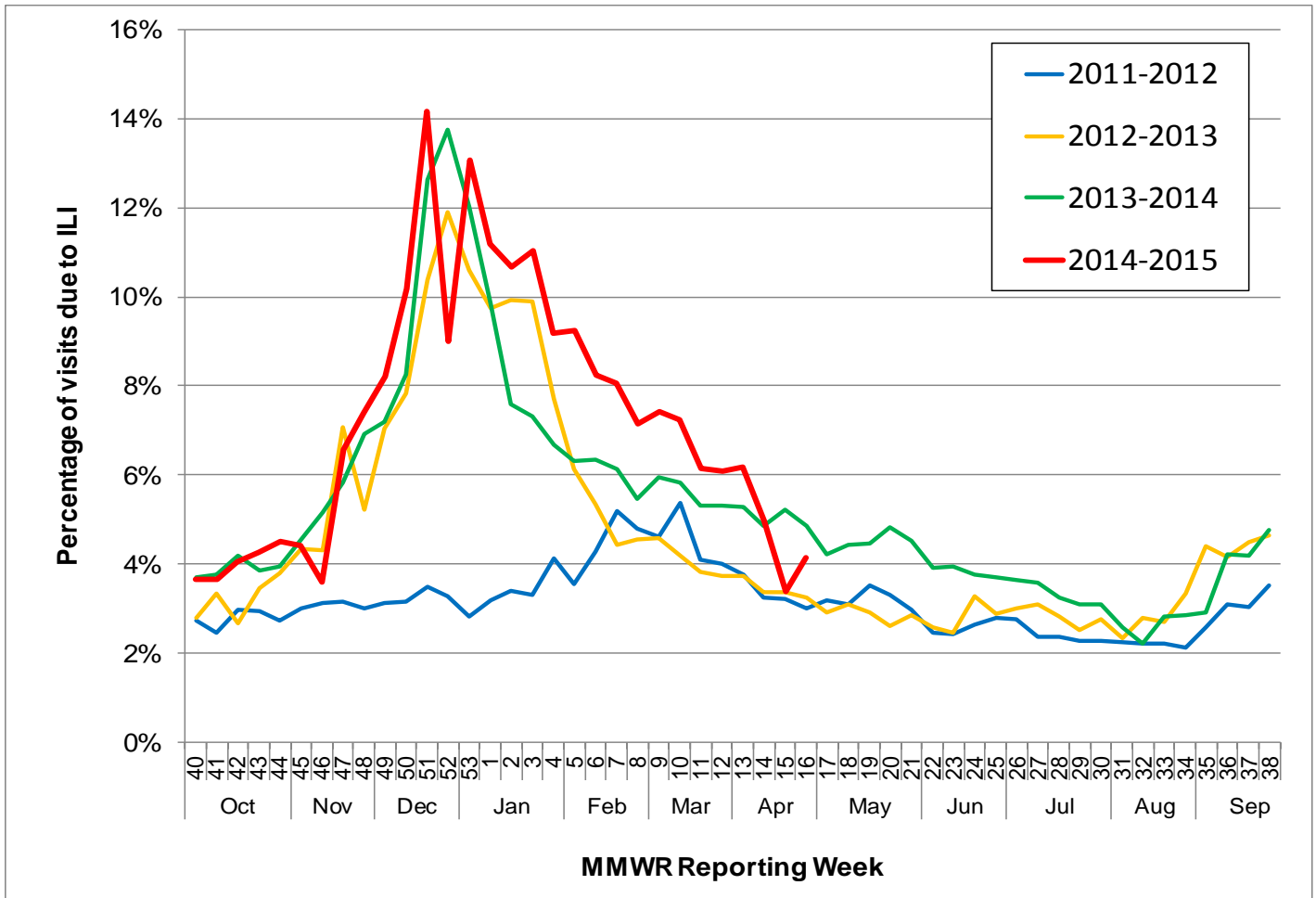


Figure 3: Percentage of Visits Due to Influenza-like Illness Reported by Texas ILINet Participants, 2011–2015 Seasons



**Reports from Health Service Regions**

Reports were received from all Health Service Regions (HSRs) during week 16. HSRs 2/3, 4/5N, 6/5S, 8, and 11 reported the same level of flu activity compared to week 15. HSR 1 and 9/10 reported a decreased level of flu activity compared to week 15. HSR 7 could not determine the level of flu activity compared to week 15.

**Variant Influenza Viruses**

No variant or novel influenza viruses have been detected in Texas in 2014 or 2015.

**Institutional Outbreaks and School Closures**

No ILI or influenza-associated outbreaks were reported during week 16.

No school closures were reported during week 16.

## Influenza-Associated Pediatric Mortality

An influenza associated pediatric death was reported during week 16 that occurred during week 47. The child was a 3 year old resident of HSR 6/5S with no underlying health conditions. A specimen collected from the child was positive for influenza B by rapid test; another specimen from the child was positive for adenovirus and enterovirus by PCR. The child was not vaccinated for influenza for the current season. Another influenza-associated pediatric death was reported that occurred during week 12. The child was a 17 year-old resident of HSR 6/5S with no underlying health conditions. A specimen collected from the child was positive for influenza B by PCR; another specimen from the child was positive for RSV by antigen test. The child was not vaccinated for influenza for the current season.

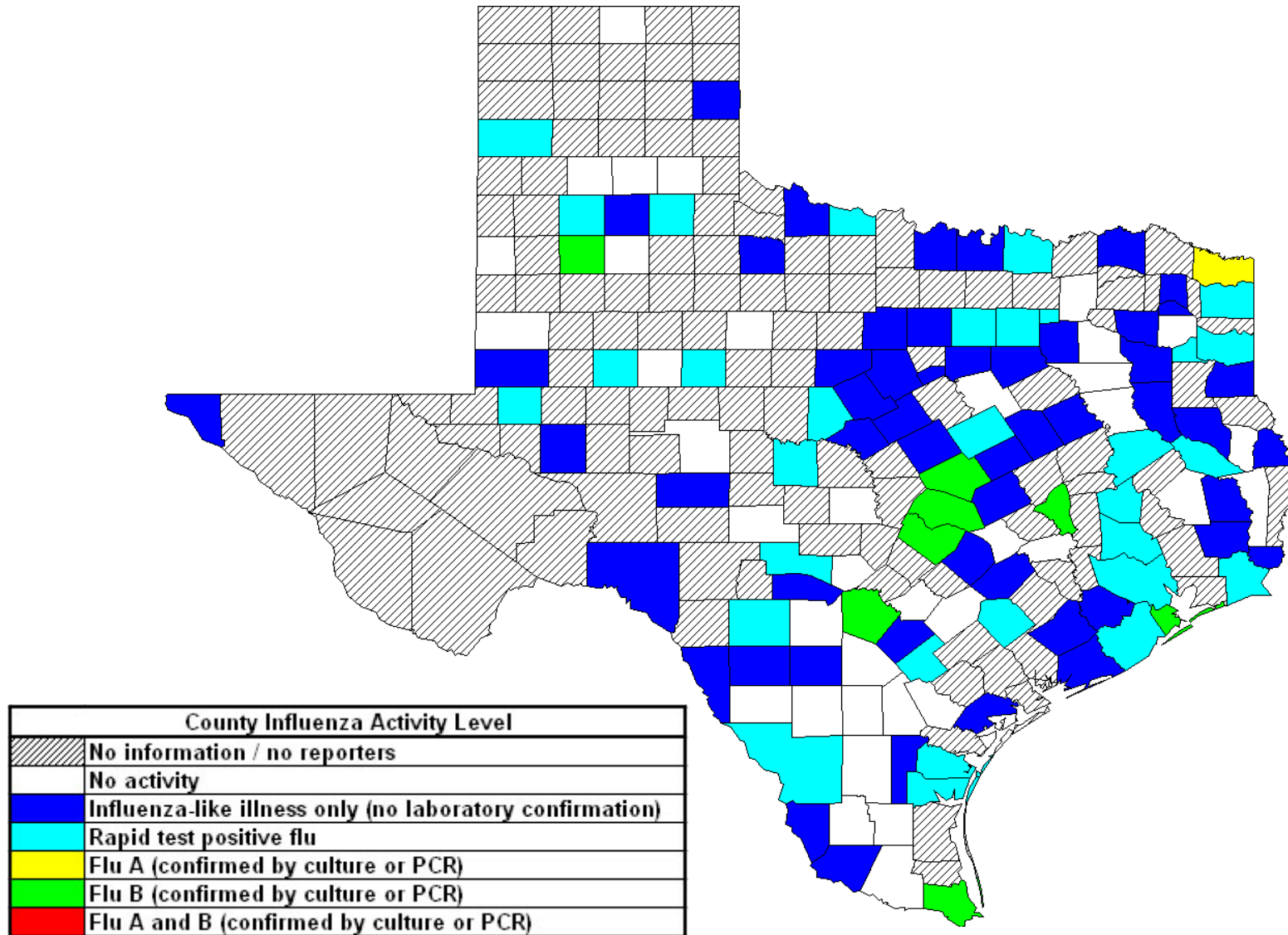
Sixteen influenza-associated pediatric deaths have been reported in Texas during the 2014-2015 influenza season. Cases of influenza-associated pediatric mortality (children <18 years of age) are reportable year-round and by law in Texas.

Table 7: Influenza-Associated Pediatric Deaths Reported in Texas During the 2014–2015 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>2014</b>							
October	0	0	0	0	0	0	0
November	0	0	0	1	0	0	1
December	0	1	4	2	0	0	7
<b>2015</b>							
January	0	2	2	1	0	0	5
February	0	0	0	0	0	0	0
March	0	0	1	2	0	0	3
April	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>3</b>	<b>7</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>16</b>

## Statewide Influenza Activity Map

Figure 4: Texas Map Displaying the Highest Level of Influenza or ILI Activity Reported by County for the Week Ending April 25, 2015 (MMWR Week 16)



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

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/>