



**HOUSTON HEALTH**  
DEPARTMENT

**Division of Disease Prevention and Control**  
**Program of Public Health Informatics**  
**Influenza Surveillance Weekly Report**  
CDC MMWR Week 15: Apr 08, 2018 to Apr 14, 2018  
**Influenza Activity by County, State, and National Levels**

Houston/ Harris County: Week 15	Texas: Week 15	CDC: Week 15
Minimal	Minimal	Normal

**Highlights**

- In Week 15, flu activity is declining, and this is the last Influenza Surveillance Report for 2017-2018 flu season published by the Houston Health Department (HHD). The flu vaccine is still recommended.
- The Bureau of Epidemiology has followed-up with **10 facilities** during this flu season to detect, control, and prevent the spread of influenza A.
- Two pediatric<sup>®</sup> and two adults\*\* flu-related deaths have occurred in Houston during this flu season.

**Influenza Like Illness**

- The percentage of reported influenza-like illness (ILI) detected from emergency centers in Houston/Harris County slightly **increased** from 5.4% in week 14 to 6.1% in week 15.
- The percentage of Athena ILI reports **decreased** from 0.18% to 0.13%.
- The count of Flu Near You users reporting ILI **decreased** from 2 to 0.
- The lab confirmed ILI cases among HISD students **decreased** from Feb (n=171) to Mar (n=20).

**Virology**

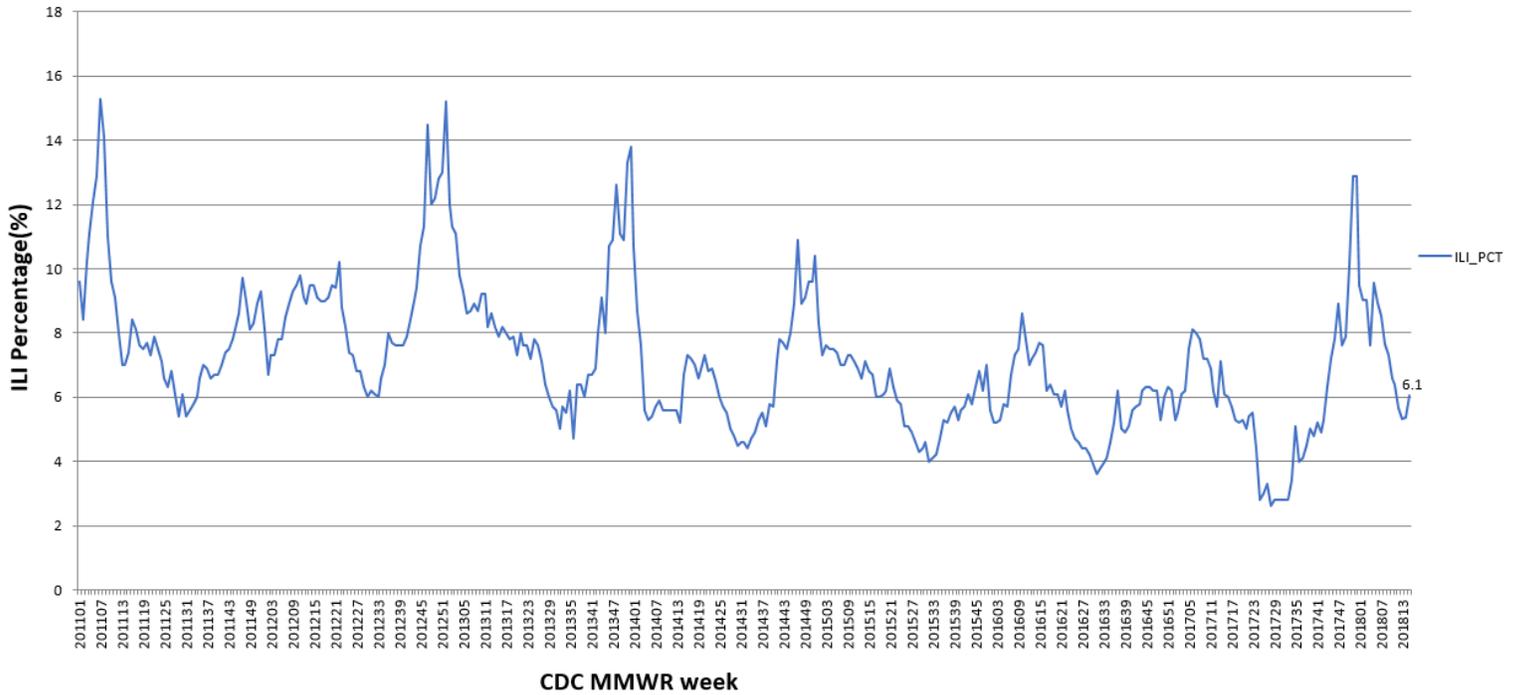
- In week 15, the percentage of positive flu tests from sentinel providers in Houston remained at 0%<sup>‡</sup> from week 14.
- Cumulatively in the year of 2017, the City of Houston Bureau of Laboratory Services has tested 517 surveillance specimens. Among the positive influenza tests (n=191), Influenza A/H3 accounts for **56.5% (n=108)**.
- HHD receives electronic lab reports from clinical labs. In week 15, there was a **increase** in positive flu tests (**n=198**). Flu A activity accounts for **96%** of the flu positives this season so far. Week 52 of 2017 has the highest count (**n=869**) of flu positives this season.
- HHD received non-electronic lab reports from clinical labs. During this flu season, **January** showed the highest flu activity (**n=6**).

**National**

- At the national level during week 15, 2.08% of specimens tested and reported to the CDC by clinical labs were positive for influenza. The proportion of outpatient visits for ILI (3.58%) was **below** the baseline (6.41%) and **7,081<sup>†</sup>** pneumonia and influenza deaths were reported in Texas during this flu season.

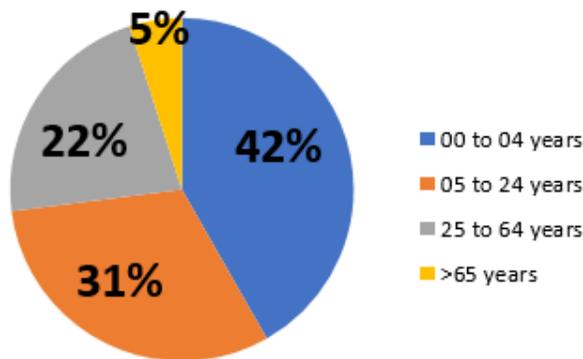
Syndromic Surveillance: 2011-2018

ILI-related ED visits in 2011-2018

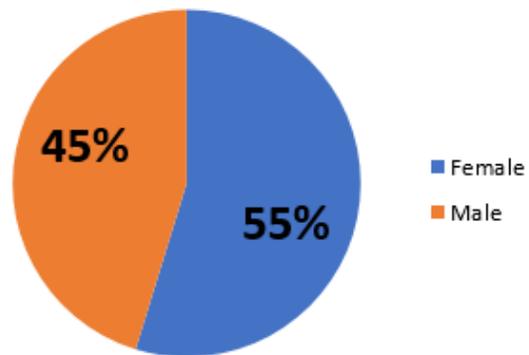


Syndromic Surveillance: 2017-2018 Influenza Season Age and Gender Distribution

Age Group



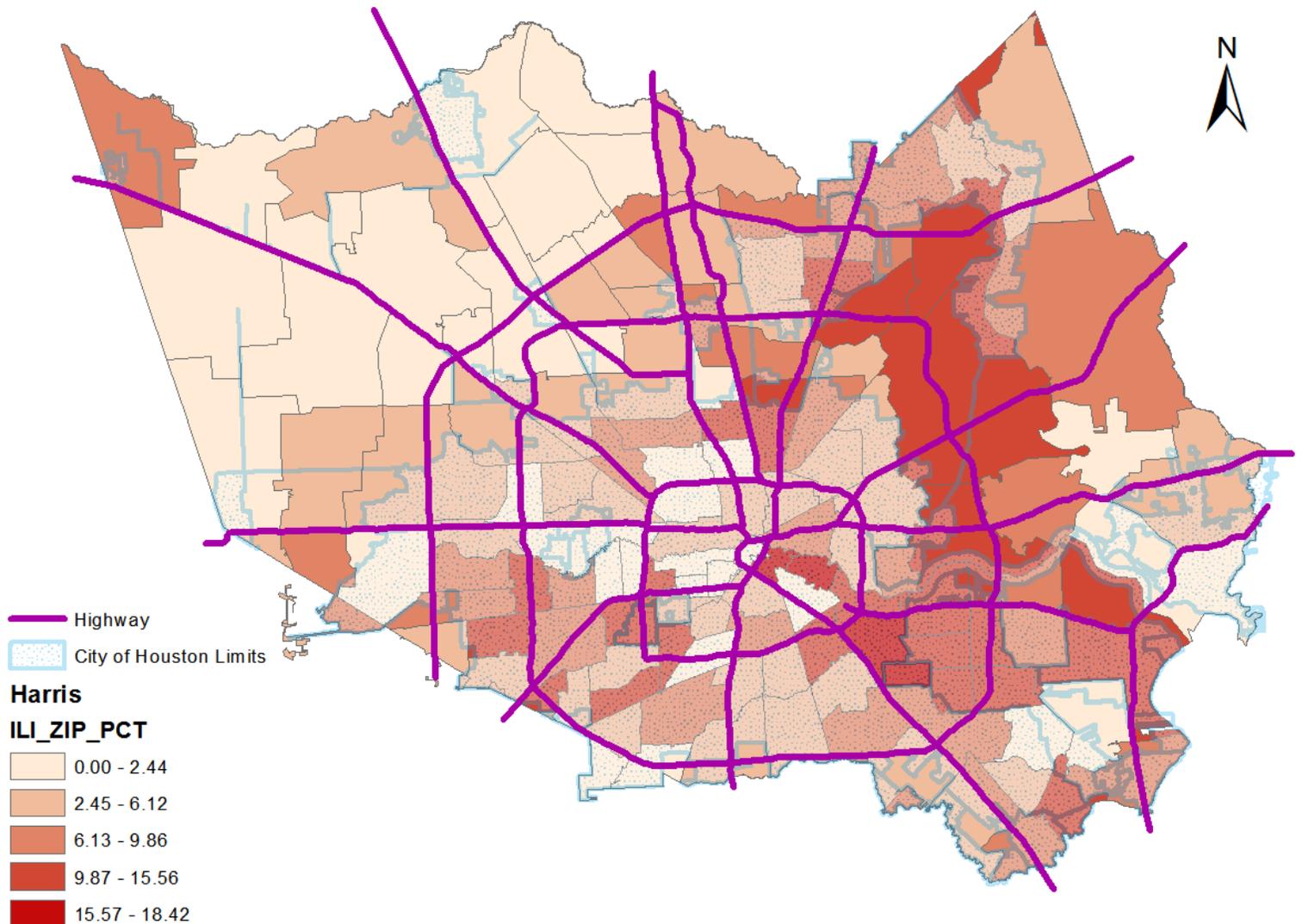
Gender



In week 15, 6.1% of emergency center (EC) visits were due to influenza-like illness (ILI) complaints. Of the 1,127 patients presenting with ILI, the age group that recorded the most EC visits was the 00 to 04 year old (42%). Females accounted for 55% of patients presenting with ILI.

*NOTE: Houston/Harris County ILI activity is assessed using information provided by surveillance participants in the Real-time Outbreak Disease Surveillance System (RODS). For week 15, 36 surveillance participants reported ILI information to Houston Health Department. Influenza-like illness (ILI) is defined as the mention of fever AND cough, OR fever AND sore throat, OR flu in the patient's Emergency Department (ED) chief complaint. These data do not represent laboratory confirmed cases of influenza nor do they represent all ED visits in Houston/Harris County. The algorithm for ILI-related ED visit has been updated to meet the national standard in December 2017. The changes were applied to all previous data points. The new algorithm is more inclusive and when applied to previously reported data it resulted in an increase in percentages of ED visits classified as ILI. As the result of the changes, the overall percentage has been changed, but the overall trend remained the same. As the criteria changes, the health department tends to be more inclusive for catching flu activity.*

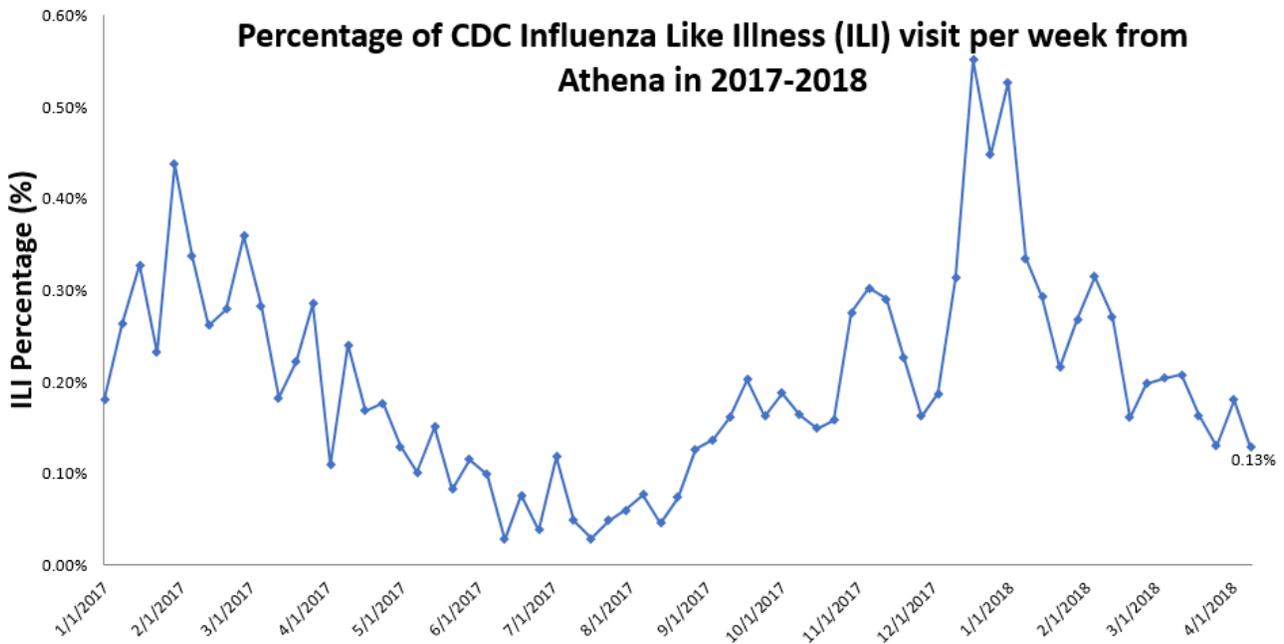
## Syndromic Surveillance: Geographic Distribution Map of ILI



During week 15, the ZIP codes that have the greatest percentage of ED visits related to ILI (15.56% or greater) are: 77003, 77011, 77017, 77217, 77233, 77372, 77440, 77480, 77485, 77508, 77519, 77522, 77542, 77569, and 77587.

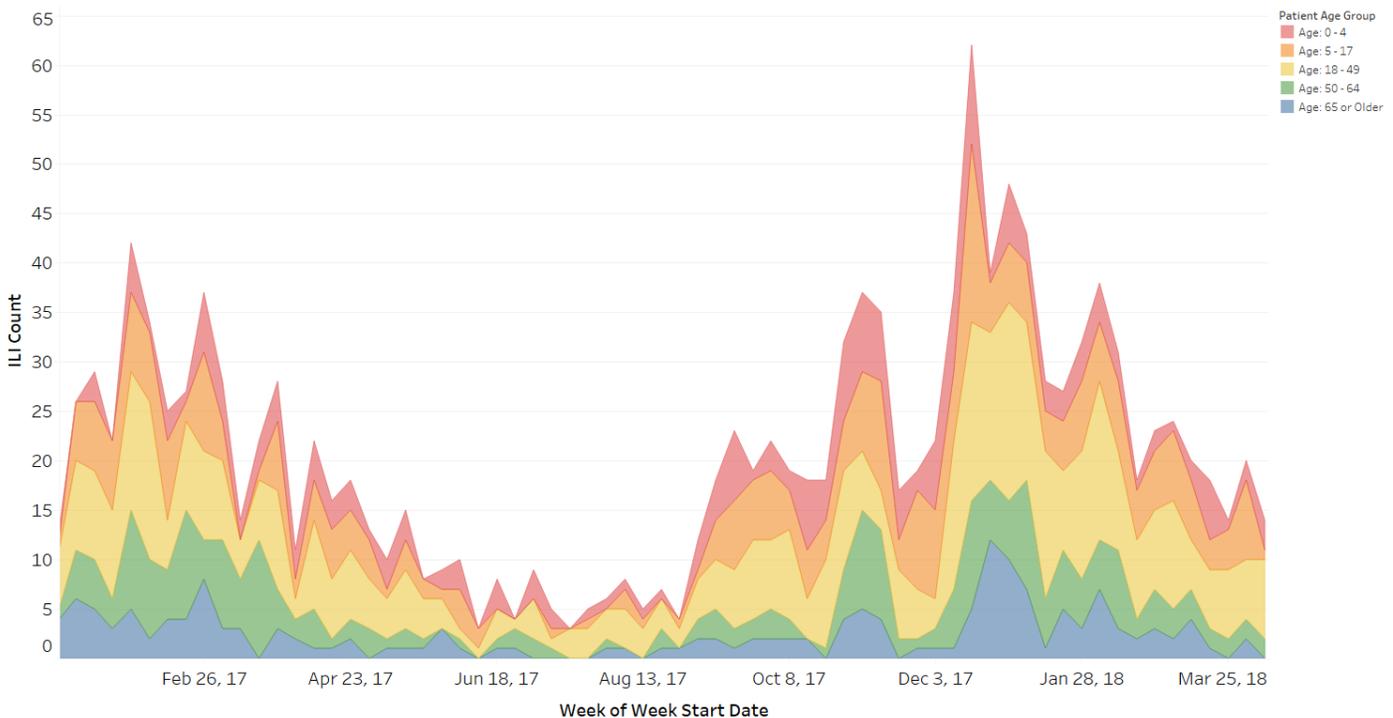
*NOTE: Houston/Harris County ILI distribution map was created using data provided by 36 hospitals that voluntarily provide data based on chief complaints in the Real-time Outbreak Disease Surveillance System (RODS). This map reflects the percentage of ILI cases from each residential zip code during the current week of reporting. Influenza-like illness (ILI) is defined as the mention of fever AND cough, OR fever AND sore throat, OR flu in the patient's ED chief complaint. These data do not represent laboratory confirmed cases of influenza nor do they represent all ED visits in Houston/Harris County.*

## Athena: ILI percentage per week



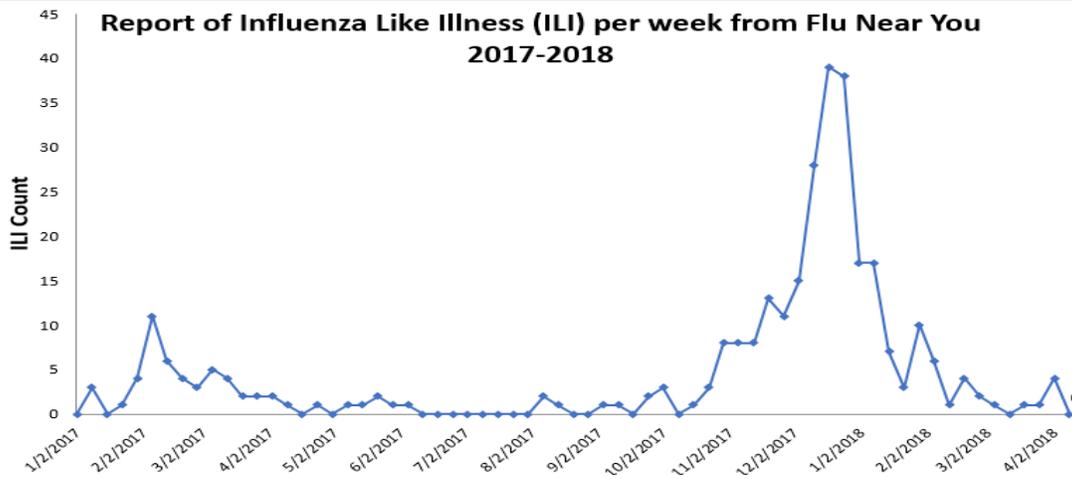
## Athena: ILI per week by age group

Athena: Total number of weekly ILI visits by age Group



In week 15, ILI accounted for 0.13% of outpatient visits in the Athena network. The count of ILI visits decreased from 20 in the week of 04/01/2018 to 14 in the week of 04/08/2018. The age group that accounted for the highest counts of ILI outpatient visits was age 18-49 (n=8).

## Flu Near You: ILI per week



Flu Near You (FNY) is a participatory surveillance tool which compliments traditional disease surveillance. No ILI cases were reported by FNY users in the week of 4/9/2018, compared to 4 ILI cases\* in the previous week. See the last page for information on how to participate in FNY.

## School Surveillance

Table 1: ILI and Influenza Cases by Type and School Type<sup>1</sup> per Month

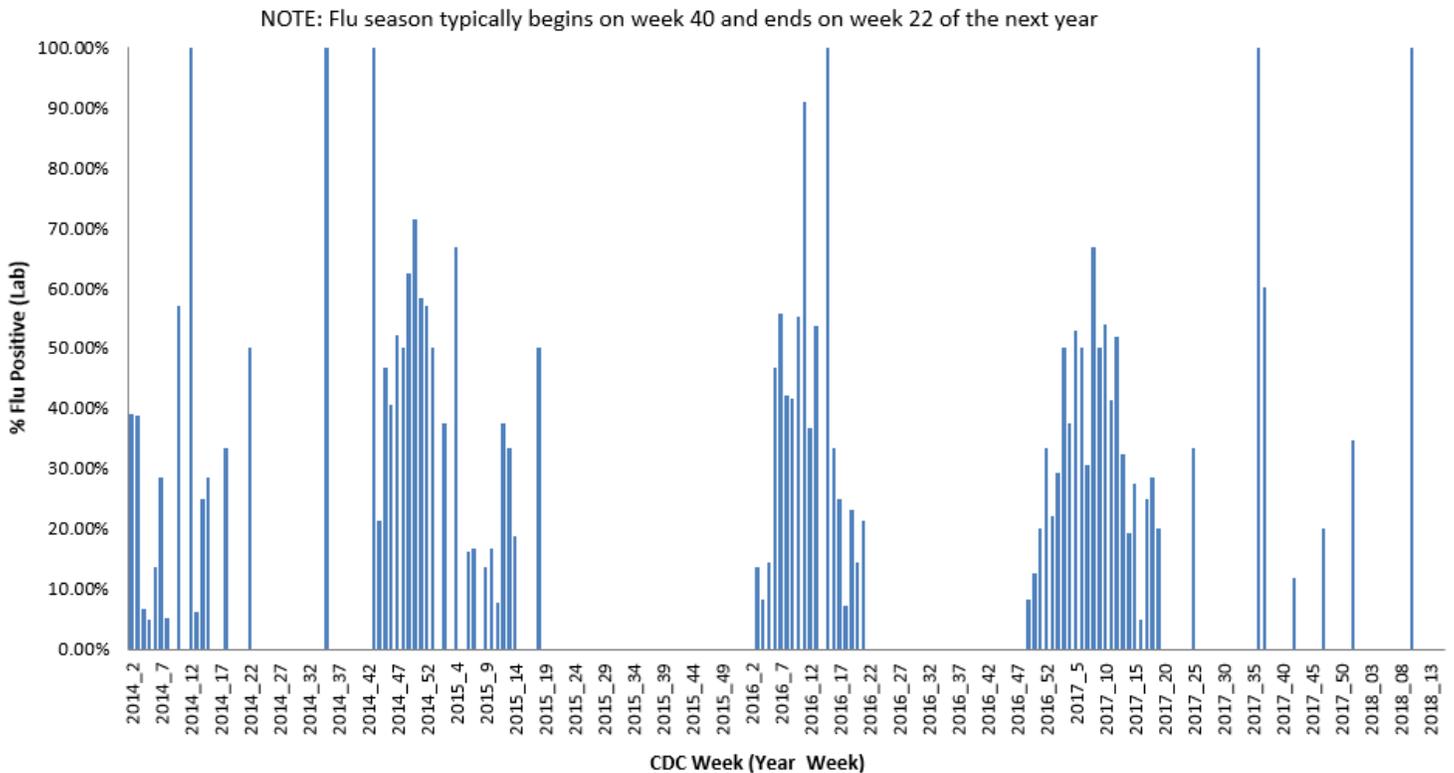
	Total Cases	Lab Confirmed		Flu A	Flu B	A+B	Unclassified		Elem Schools	Middle Schools	High Schools	Multi-Level Schools
		#	%									
Mar	90	38	42%	7	5	0	26		60	16	9	5
Apr	31	5	16%	3	0	0	2		10	0	7	14
May	17	0	0%	0	0	0	0		9	1	3	4
Jun-Sept	-	-	-	-	-	-	-		-	-	-	-
Oct	50	22	44%	10	1	0	11		47	0	2	1
Nov	91	42	46%	21	1	0	20		67	3	5	16
Dec	233	39	17%	11	2	0	26		146	31	11	45
Jan	321	91	28%	19	8	0	64		75	2	7	7
Feb	576	171	30%	25	38	0	108		149	6	4	12
Mar	66	20	30%	0	4	0	16		18	0	2	0
<b>Total</b>	<b>1475</b>	<b>428</b>	<b>28%</b>	<b>96</b>	<b>59</b>	<b>0</b>	<b>273</b>		<b>581</b>	<b>59</b>	<b>50</b>	<b>104</b>

No school surveillance activity reported from June to September due to summer vacation and Hurricane Harvey. October was the first full month of reporting during the 2017-2018 flu season. Schools were closed in late December for holidays. Among 20 laboratory confirmed flu cases reported in March 2018, 4 cases were identified as influenza B.

*NOTE: Data on student ILI and influenza cases is collected from 306 schools within Houston Independent School district.<sup>1</sup> School will be counted more than once if more than one case from the same school is reported during the same reported period.*

Laboratory Surveillance: Influenza Rapid Test Results, Houston 2014-2018

Laboratory Flu Positive Rate 2014-2018



Laboratory Surveillance: Influenza Rapid Test Results, Houston

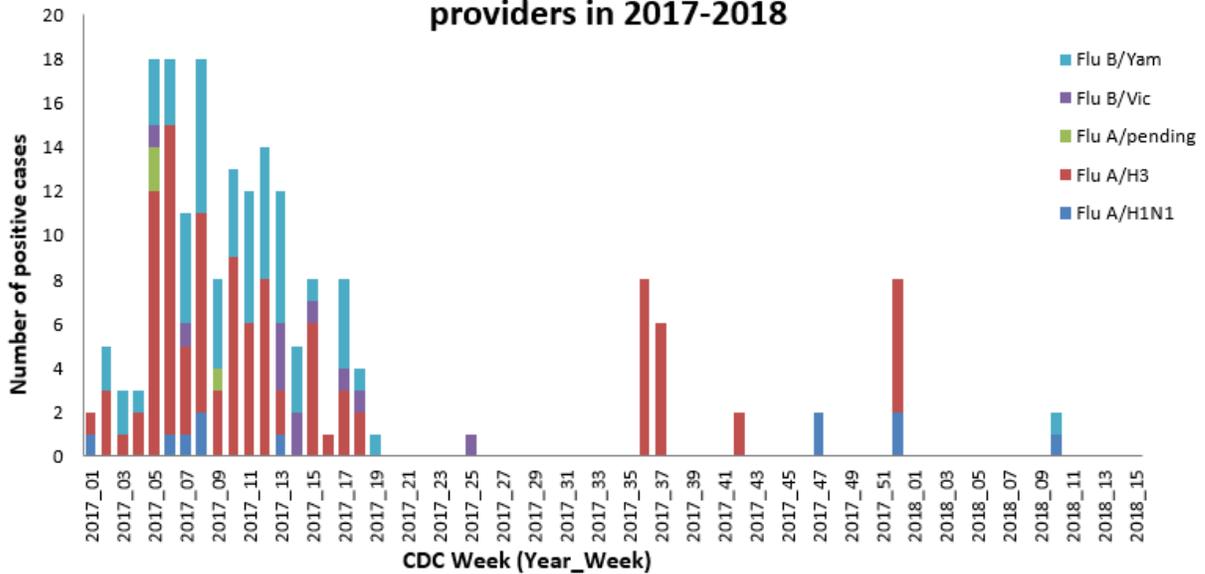
CDC Week Number	13 (Mar 25-31)	14 (Apr 01-07)	15 (Apr 08-14)
# of Influenza Tests Performed <sup>‡</sup>	0	0	0
% Influenza Positive	0%	0%	0%
# Influenza A Positive	0	0	0
% Influenza A Positive	0%	0%	0%
# Influenza B Positive	0	0	0
% Influenza B Positive	0%	0%	0%
# Non-differentiated Positive	0	0	0
% Non-differentiated Positive	0%	0%	0%

## Laboratory Based Respiratory Viruses Surveillance, Houston

### Influenza Viral Surveillance Summary

- During the calendar year of 2017, the HHD Office of Surveillance and Public Health Preparedness tested 517 specimens from sentinel providers, and 191 (36.9%) tested positive. Among positive influenza tests, the results showed Influenza A/H3 (56.5%), Influenza 2009 A/H1N1 (5.2%), Influenza B (36.6%) and Influenza co-infection (0.5%). In 2017, Week 5, 6, and 8 had the highest number of positive influenza cases.
- For 2018 MMWR Week 15, no specimen<sup>+</sup> was collected.

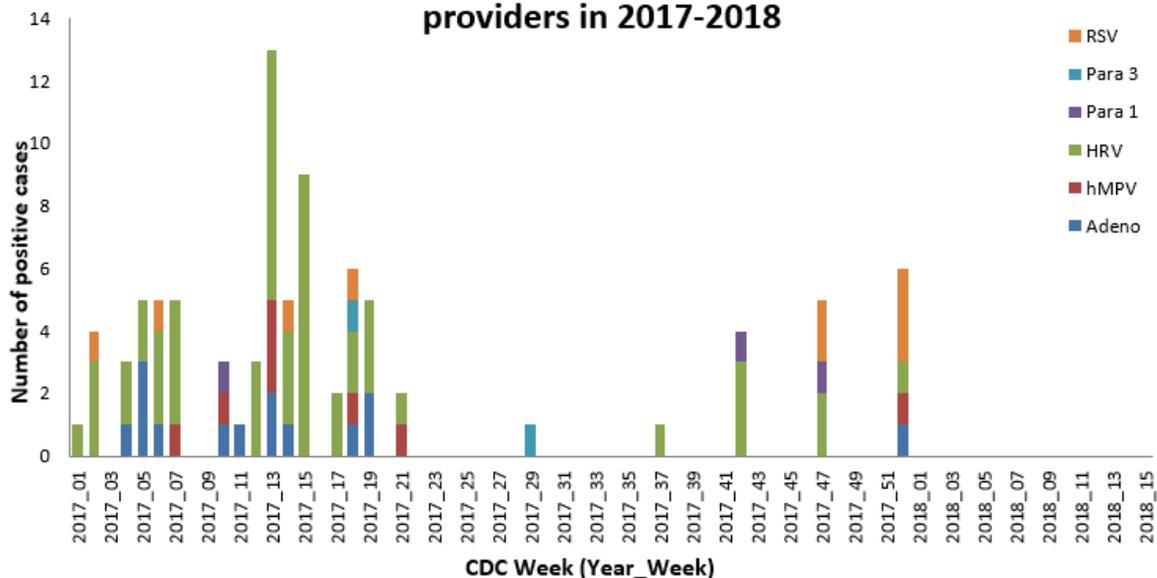
**Influenza positive specimens detected through sentinel providers in 2017-2018**



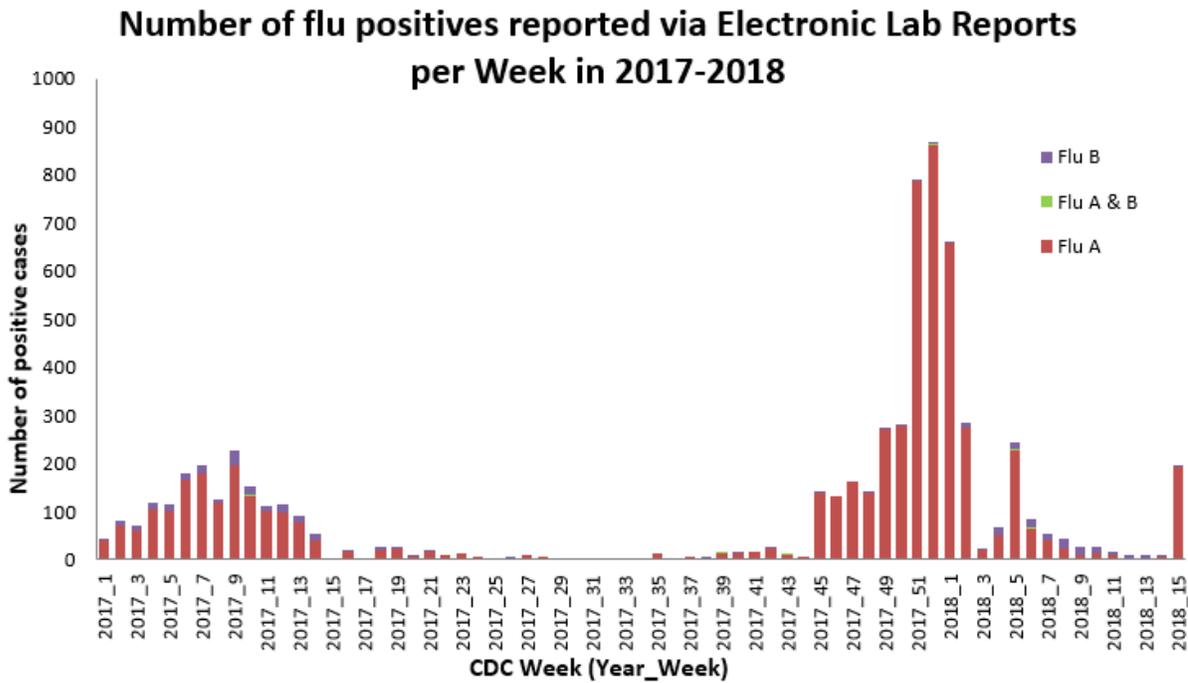
### Non-influenza respiratory virus surveillance

- During the calendar year of 2017, among the specimens tested by culture or respiratory virus panel, 89 (17.2%) non-influenza respiratory virus cases were detected: Human Rhinovirus (60.0%), Respiratory Syncytial Virus (10.1%), Parainfluenza 1 (3.4%), Parainfluenza 3 (2.2%), Adenovirus (15.7%), Human Metapneumovirus (9.0%) and Co-Infection (16.9%).

**Non-Influenza positive specimens detected through sentinel providers in 2017-2018**

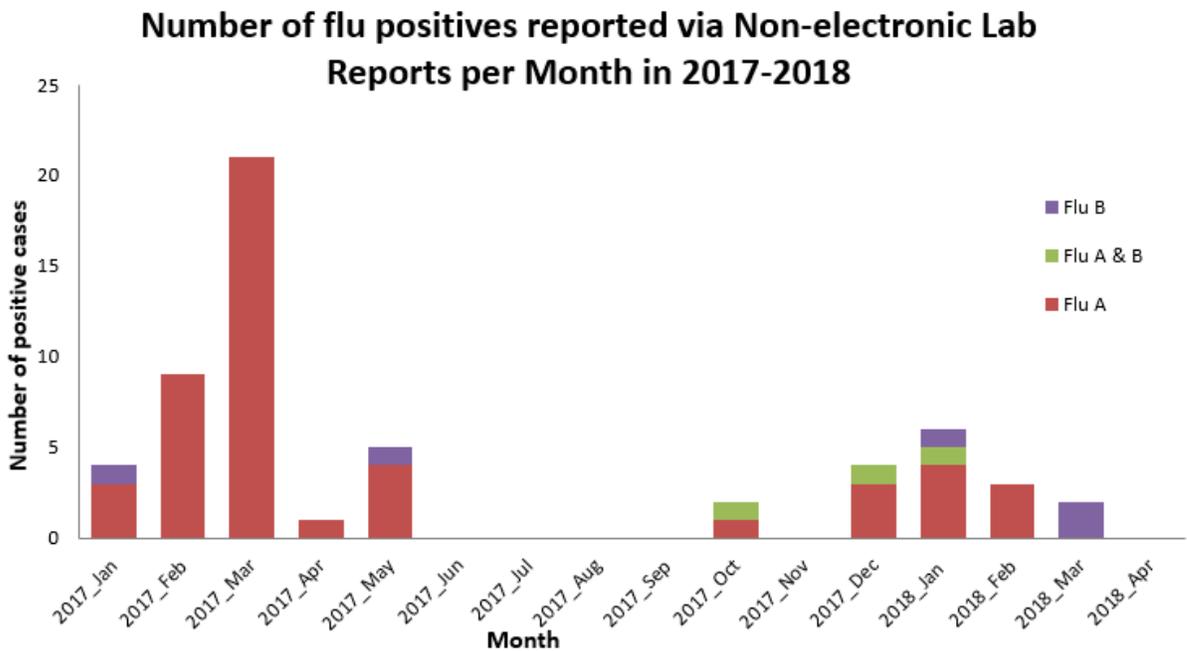


Passive Viral Surveillance, Electronic lab reports



HHD receives electronic lab reports from clinical laboratories. In Week 15 of 2018, there were 198 laboratory confirmed influenza cases. Flu A activity accounts for 96% of the flu positives this 2017-2018 flu season. Week 52 of 2017 had the highest count (869) of flu positives in this flu season.

Passive Viral Surveillance, Non-electronic lab reports

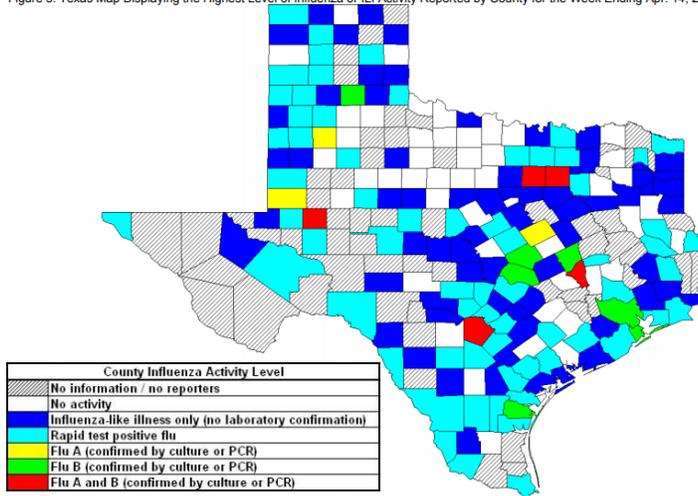


HHD receives non-electronic lab reports of flu positive results from clinical laboratories. March had the highest counts for the calendar year of 2017, 21 cases of Flu A. In March 2018, 2 positive lab reports for Flu B were received non-electronically. January of 2018 accounts for highest counts (n=6) for this flu season of 2017-2018.

## Texas and National Influenza and ILI Activity

### Statewide Influenza Activity Map

Figure 5. Texas Map Displaying the Highest Level of Influenza or ILI Activity Reported by County for the Week Ending Apr. 14, 2018 (MMWR Week 15)



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.

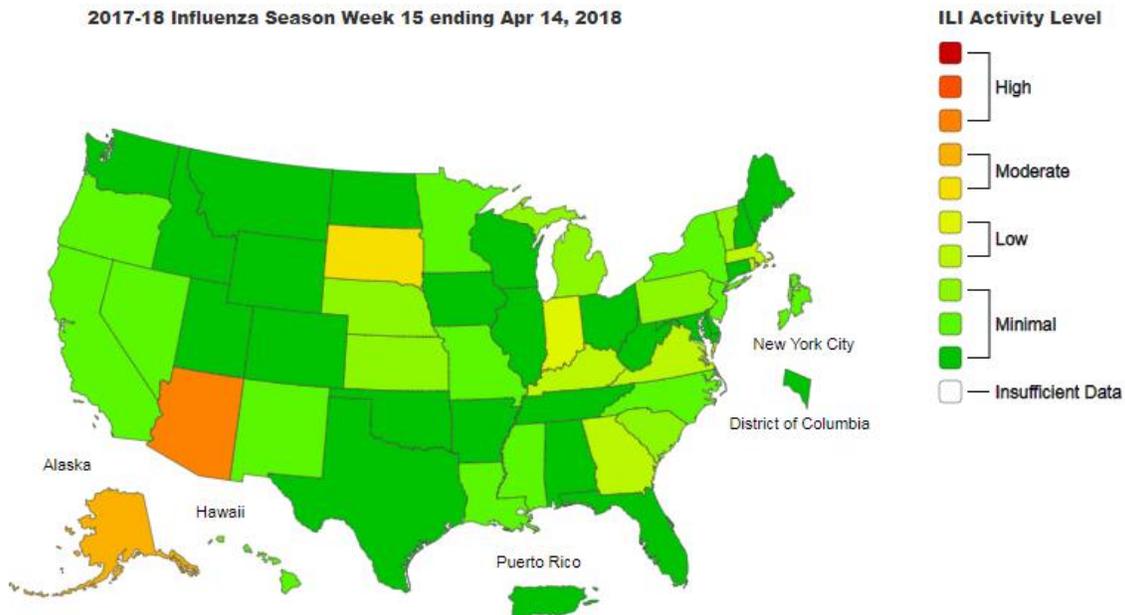
*NOTE: Influenza activity level corresponds to current MMWR week only and does not reflect previous weeks' activity. The majority of influenza cases are not reportable by law to the Texas Department of State Health Services. This map contains data from sentinel sites and does not represent all influenza cases in the state. Positive laboratory results are reported according to specimen collection date or date received in the lab if the former is unknown.*

<http://www.dshs.texas.gov/IDCU/disease/influenza/surveillance/2017---2018-Texas-Influenza-Surveillance-Activity-Report.xls>

### A Weekly Influenza Surveillance Report Prepared by the Influenza Division

#### Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet

2017-18 Influenza Season Week 15 ending Apr 14, 2018



*NOTE: Data collected in ILINet are used to produce a measure of ILI activity by state. Activity levels are based on the percent of outpatient visits in a state due to ILI and are compared to the average percent of ILI visits that occur during spring and fall weeks with little or no influenza virus circulation. This map uses the proportion of outpatient visits to health care providers for ILI to measure the ILI activity level within a state. It does not, however, measure the extent of geographic spread of flu within a state. Therefore, outbreaks occurring in a single city could cause the state to display high activity levels. Data collected in ILINet may disproportionately represent certain populations within a state, and therefore may not accurately depict the full picture of influenza activity for the whole state. <http://www.cdc.gov/flu/weekly/>*

The *Houston Influenza Surveillance Weekly Report* is available on the Houston Health Department web site at:  
<http://www.houstontx.gov/health/weekly-flu-report>

Flu Near You is a participatory surveillance (crowd sourcing) tool which complements traditional disease surveillance activities. Registered users can obtain real-time information on flu activity and influenza vaccines in the Greater Houston Metropolitan Area. Flu Near You features include:

- Report symptoms
- Find vaccines
- Map flu cases in the Greater Houston Metropolitan area
- Get flu news
- Share on social media

This season HHD invites you to register for Flu Near You at <https://flunearyou.org>



## NOTE:

*Influenza-like Illness (ILI) is defined as fever (temperature  $\geq 100^{\circ}\text{F}$ ) plus a cough OR a sore throat, in the absence of a known cause other than influenza.*

*Houston ILI baselines were determined using the same method as the Centers for Disease Control and Prevention Regional ILI baselines. The baseline is developed by calculating the mean percentage ILI of ED visits during non-influenza weeks for the previous three seasons and adding two standard deviations. A non-influenza week is defined as periods of two or more consecutive weeks in which each week accounted for less than 2% of the season's total number of specimens that tested positive for influenza.*

*Additional information regarding Houston, Texas and national ILI activity can be accessed at:*

*<http://www.houstontx.gov/health/> <http://www.dshs.texas.gov/IDCU/disease/influenza/surveillance/2017--2018-Texas-Influenza-Surveillance-Activity-Report.xls>*

*<http://www.cdc.gov/flu/weekly/>*

*<http://www.who.int/csr/don/en/>*

*© The numbers for pediatric flu-related deaths may change as information becomes available.*

*\*\* Flu-related deaths in adults are not required to be reported to health department. Numbers for flu-related deaths may change as information becomes available.*

*‡ The number of samples collected for influenza test was lower than expected due to the delay of availability of new rapid flu test kits from the manufacturer.*

*† Inherent delays in death reporting and coding practices may cause the number of reported Pneumonia and Influenza deaths to vary considerably each week.*

*\* Information may change as the data becomes available.*

## Houston Health Department

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