



# BOSTON PUBLIC HEALTH COMMISSION (BPHC)

Communicable Disease Control Division  
 1010 Massachusetts Ave - Boston, MA 02118  
 Phone: (617) 534-5611 - Fax: (617) 534-5905

## Influenza Report - For the Week Ending 5/4/2019 (Final Report of 2018-19 Season)

### Historical Data (MMWR Weeks 40 to 18): Current Season and Previous Influenza Season (2017-2019)

9/30/2018-5/4/2019 (Week 18)	
Reported Cases (Boston Residents)	# (% of total)
Influenza A (H1N1 predominant)	3050 (79.3%)
Influenza B	790 (20.5%)
Influenza A and B	8 (0.2%)
Influenza (type unspecified)	0
<b>TOTAL (through Week 18)</b>	<b>3848</b>

10/1/2017-5/5/2018 (Week 18)	
Reported Cases (Boston Residents)	# (% of total)
Influenza A (H3N2 predominant)	3023 (73%)
Influenza B	1115 (28%)
Influenza A and B	0
Influenza (type unspecified)	0
<b>TOTAL (through Week 18)</b>	<b>4138</b>

SEASONAL HOSPITALIZATION RATES (MMWR WEEKS 40 TO 18)			
SEASON	# CASES	# HOSPITALIZED	% HOSPITALIZED***
2018-2019	3848	588	15
2017-2018	4138	772	19

Boston ED ILI Surveillance*	
This Week ILI% (Week 18)	0.97%
Last Week ILI% (Week 17)	1.08%
State/National ILI Surveillance** (Week 18)	
This Week Massachusetts ILI%	1.38%
This Week National ILI%	1.58%

**Cases of influenza diagnosed in Boston confirmed by any laboratory test must be reported to BPHC throughout the year by calling (617) 534-5611 or faxing a completed case report form to (617) 534-5905.**

\*Influenza-like illness (ILI) is defined as "flu" OR "fever AND (cough OR sore throat)" in ED chief complaint data captured by BPHC Syndromic Surveillance System.

\*\*Massachusetts and National ILI data are calculated using ILInet outpatient surveillance data from sentinel sites. The City of Boston uses different methodology derived from the BPHC Syndromic Surveillance System. For more information on ILInet go to: <https://www.cdc.gov/flu/weekly/overview.htm>.

\*\*\*% Hospitalized=proportion of all confirmed influenza cases who were hospitalized.

**Summary:** As of 5/4/2019, 3,848 cases of laboratory-confirmed flu in Boston residents have been reported to BPHC since 9/30/2018. Flu B constituted a majority of recently reported cases (see Figure 2).

This season, flu activity in Boston was characterized by a bimodal peak in activity (based on two metrics of activity: influenza-like-illness (ILI)% and confirmed case counts). The 2018-19 season was a primarily A(H1N1)-predominant season. The last A(H1N1) predominant season was 2015-16. National flu subtyping data identified a wave of A(H3N2) activity that followed the initial peak of flu activity in February. A(H3N2) eventually superseded A(H1N1) as the predominant circulating strain as the 2018-19 season progressed. This, along with increased flu B activity, may have contributed to the second wave of overall flu activity. This reinforces the need for continual monitoring of flu activity even when activity appears to have subsided. A seemingly clear downward trend in activity is not always indicative that flu activity has resolved (see Figure 2).

The 2018-19 season was the longest flu season in 10 years, with national ILI at or above baseline for 21 weeks. The previous high of 20 weeks occurred during 2014-15, a season classified overall as "high" severity, especially for older adults, by CDC and was notable for the predominance of circulating flu A (H3N2) viruses marked by antigenic drift resulting in vaccine component mismatch. Although the 2018-19 season in Boston had a similar case count to the 2017-18 season, the current season was less severe than 2017-18, which was assessed as one of "high" severity for all age groups by CDC. CDC's preliminary findings this season related to severity indicators (ILI% and hospitalization rates) are consistent with an overall season of "moderate" severity. CDC estimates that more than 500,000 people have been hospitalized by flu so far this season. For information on the methodology CDC uses to characterize flu severity and to track when the final seasonal severity assessment is published, go to: <https://www.cdc.gov/flu/about/classifies-flu-severity.htm>.

The number of reported laboratory-confirmed cases of flu in Boston residents was similar to the 2017-18 season: 3848 versus 4138 cases. However, peak ILI% (percent of all visits to Boston emergency departments, irrespective of residence, for ILI) was much lower during this season (2.82%) than the last (5.23%). Flu-related hospitalization rates (15% vs 19%, respectively) and flu-related mortality (8 vs 19 identified deaths, respectively) were lower this season compared to last season. No flu-related pediatric deaths were reported in Boston residents during either season.

As has been the case for the past several flu seasons, Blacks and Latinos continue to be overrepresented among lab-confirmed cases compared to the overall Boston population. State-wide flu vaccination estimates are available through CDC based on self-report using various sampling methods. Boston-specific vaccination coverage estimates are not available through any local or national surveillance system due to small sample sizes. For more information on state-specific and national flu vaccination coverage estimates, go to: <https://www.cdc.gov/flu/fluview/index.htm>.

It is important to note that over the past several seasons, BPHC has increased the number of facilities reporting flu cases through outreach to outpatient settings using point of care (POC) testing (often not reported through electronic lab reporting), which increased the number of confirmed cases reported. Direct year-to-year comparisons of case counts must be interpreted with caution as they are subject to testing and reporting biases as well as level of provider/patient concern and media influences.

CDC released interim vaccine effectiveness (VE) estimates in February 2019. Overall VE was 47% (95% CI: 34%-57%). This is consistent with what has been seen (40%-60%) in recent seasons when vaccine is well-matched to circulating strains. The highest overall VE (61%) was noted among children 6 months of age to 17 years of age. These estimates are interim and likely to change based on the late season emergence of A(H3N2) strains that were not well-matched to the 2018-19 seasonal vaccine. For more information go to: <https://www.cdc.gov/mmwr/volumes/68/wr/pdfs/mm6806-H.pdf> and <https://www.cdc.gov/flu/vaccines-work/2018-2019.html>.

Vaccination against flu is the key strategy to reduce morbidity and mortality for all people aged 6 months and older, particularly vulnerable populations at risk for severe complications. Vaccinated people who develop flu tend to have milder illness and are less likely to transmit the virus to others, including those unable to receive vaccine. Flu vaccine has been shown to be lifesaving in children; 80% of pediatric flu deaths occur in unvaccinated children.

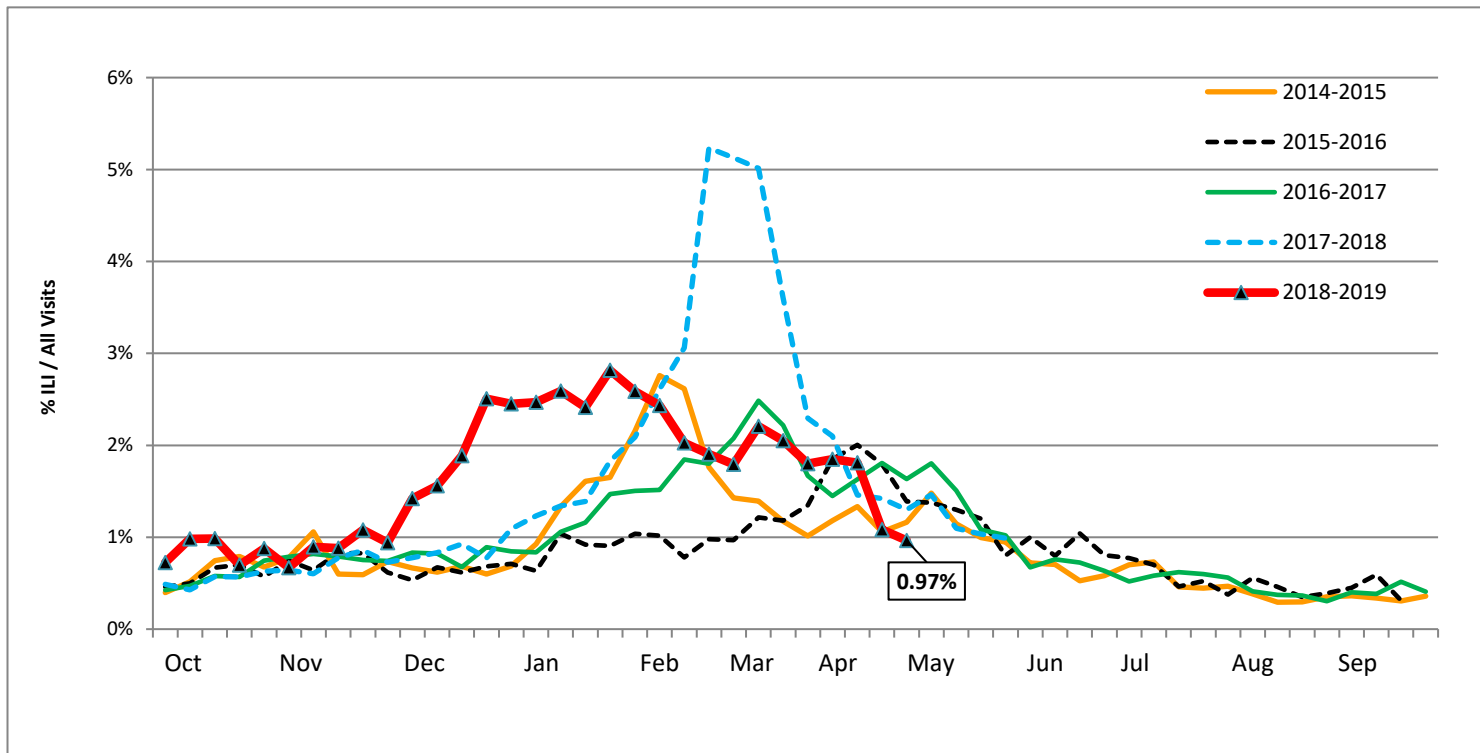
BPHC will distribute Flu In Review prior to the beginning of the 2019-20 season, providing a summary of the 2018-19 season as well as specific updated recommendations for the 2019-20 season reflecting the most current information from CDC and WHO. ILI activity will be monitored throughout the year. Providers are required to continue to report lab-confirmed cases of flu and any clusters (including ILI clusters) to BPHC throughout the year.



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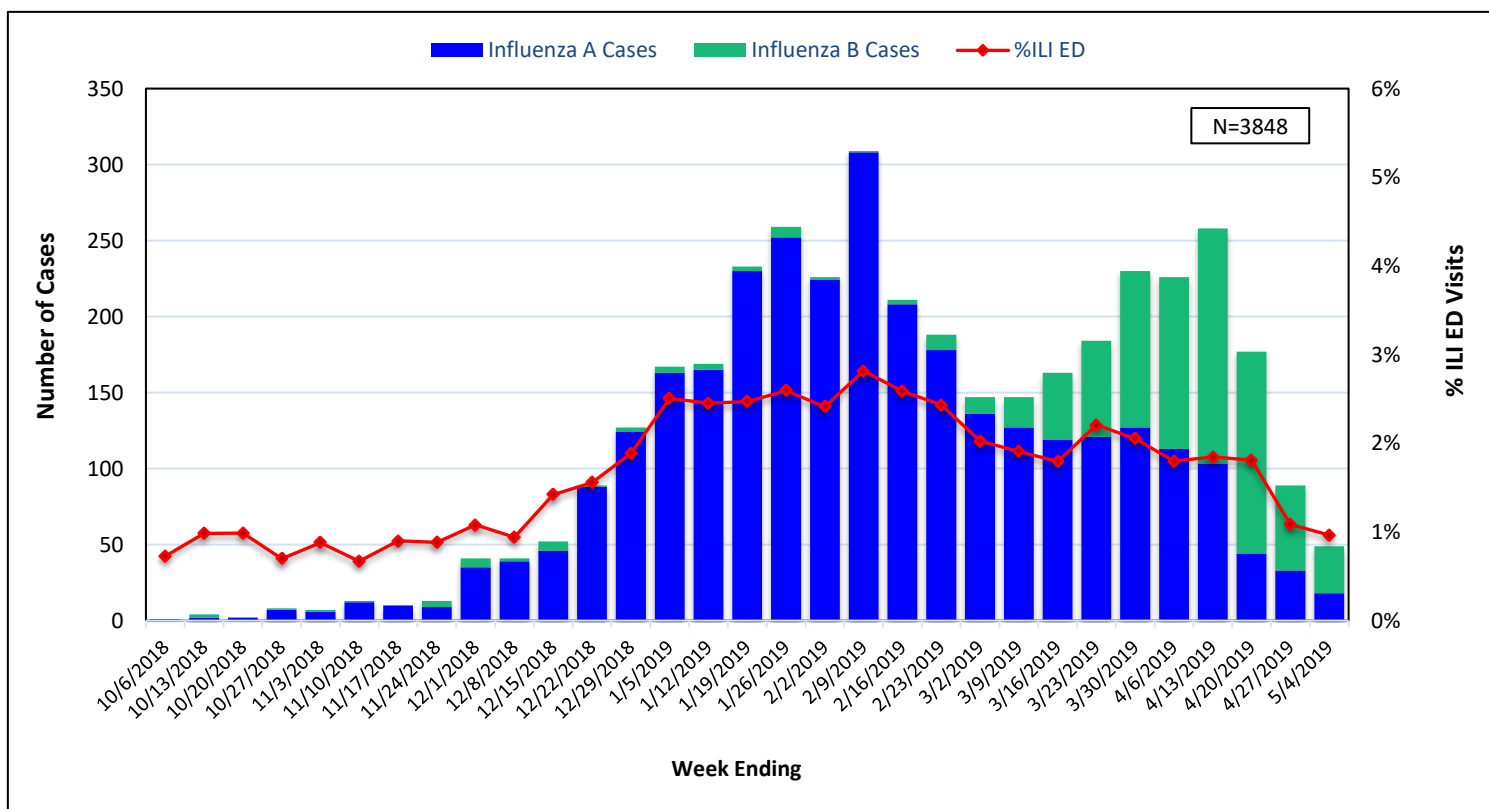
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**Figure 1. Weekly % ILI Boston ED Visits, 2013-2019**



Weekly ILI ED visits are shown from the 2014-2015 season to present. For the week ending 5/4/2019, ILI accounted for 0.97% of ED visits, a decrease of 0.11% from the prior week.

**Figure 2. Weekly Reported Influenza Cases (in Boston Residents) and % ILI ED Visits, 2018-2019 Season**



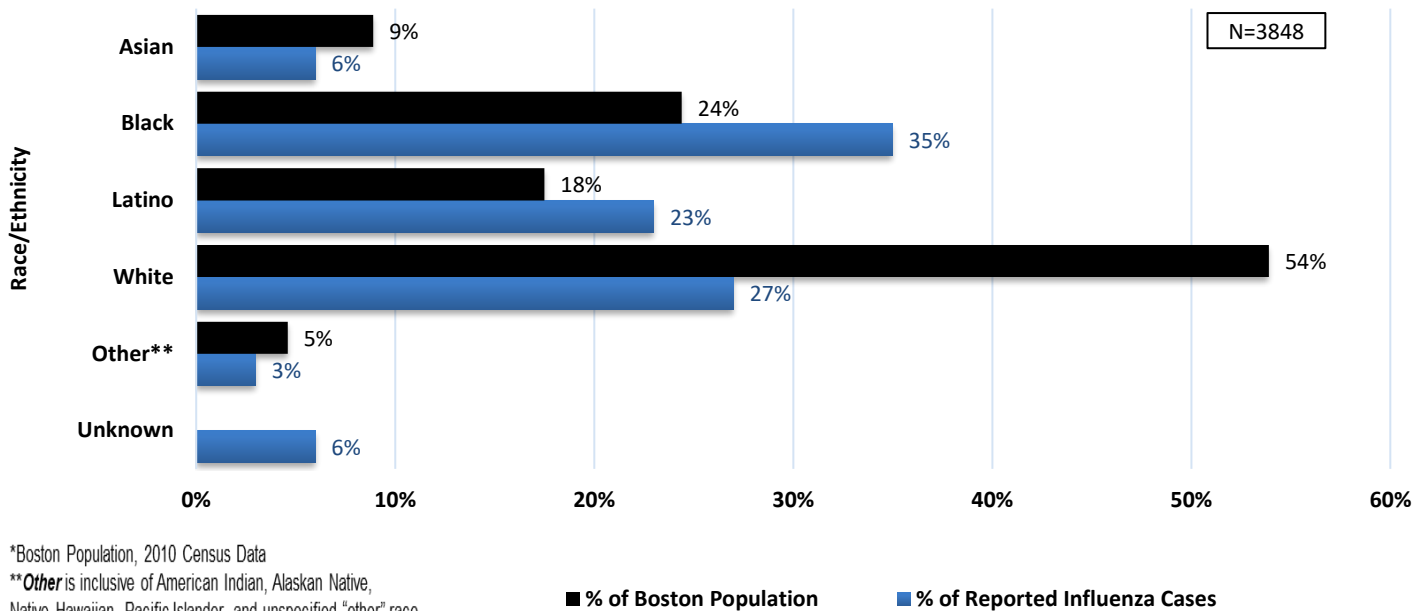


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## Race/Ethnicity Distribution Through Week Ending 5/4/2019

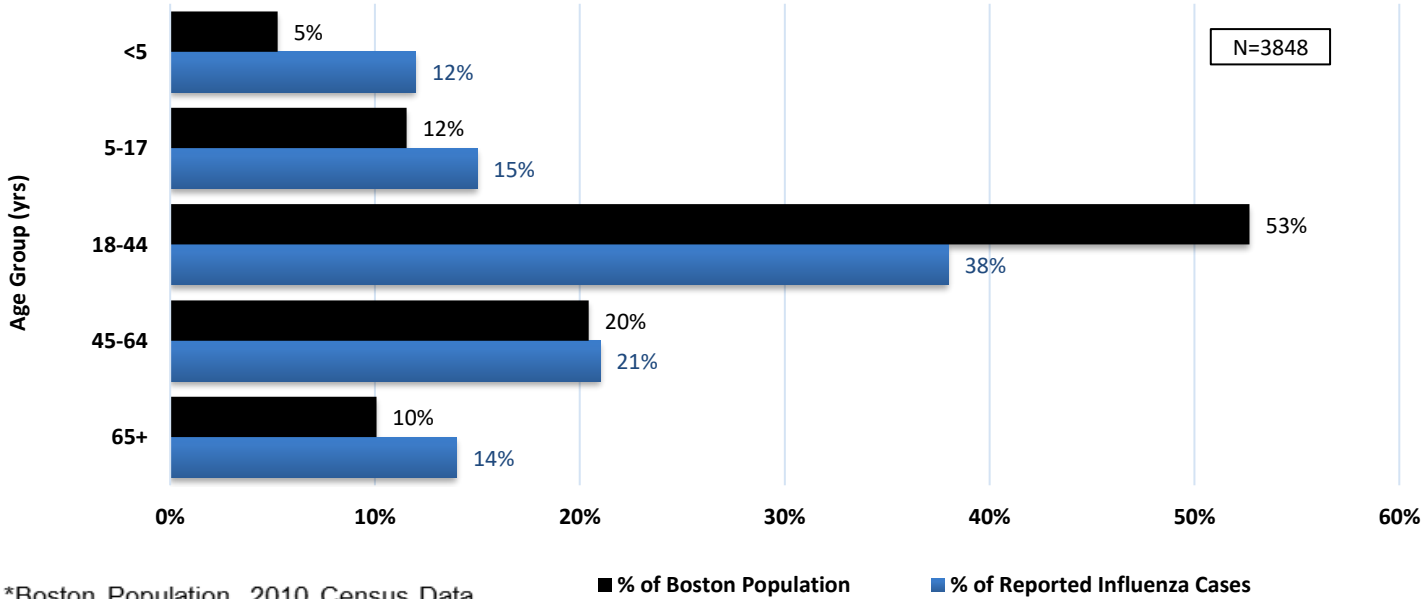
Figure 3. Reported Influenza Cases by Race/Ethnicity in Boston Residents Compared to the Overall Boston Population\*



Black and Latino Boston residents, who account for 42% of all Boston residents, continue to be disproportionately impacted by influenza, representing a total of 58% of all confirmed cases reported to BPHC.

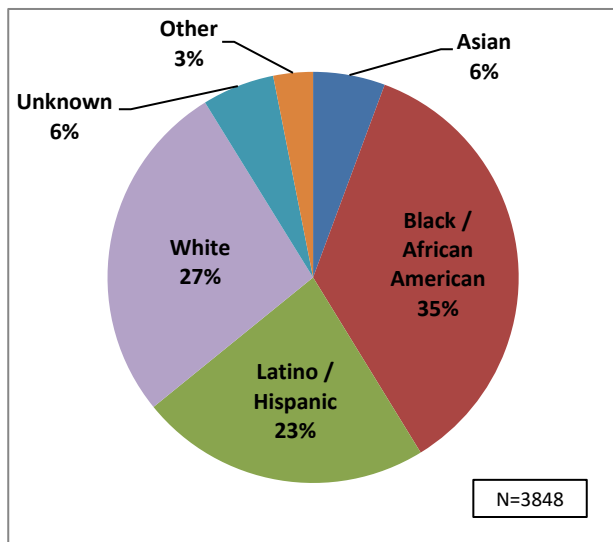
## Age Distribution Through Week Ending 5/4/2019

Figure 4. Reported Influenza Cases by Age Group in Boston Residents Compared to the Overall Boston Population\*

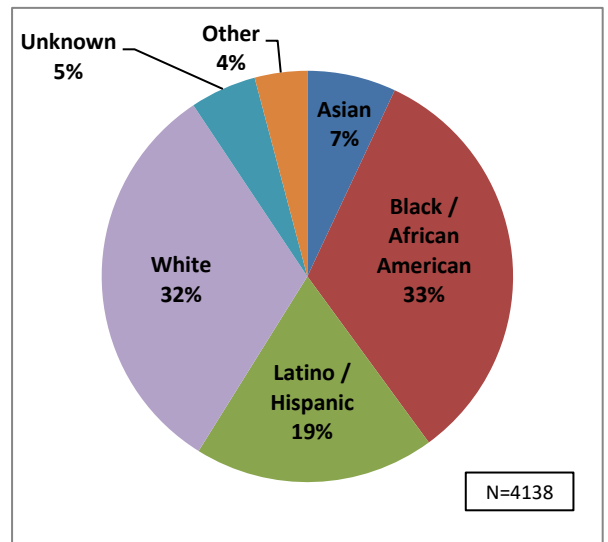


**Race/Ethnicity and Age Distribution of Confirmed Cases Through MMWR Week 18**

**Figure 5a.**  
**Race/Ethnicity** of Confirmed Influenza Cases,  
Boston Residents  
**2018-2019** Season Through MMWR Week 18

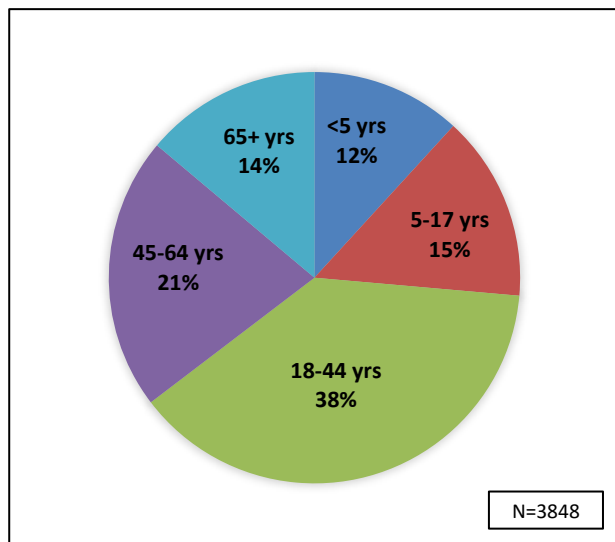


**Figure 5b.**  
**Race/Ethnicity** of Confirmed Influenza Cases,  
Boston Residents  
**2017-2018** Season Through MMWR Week 18

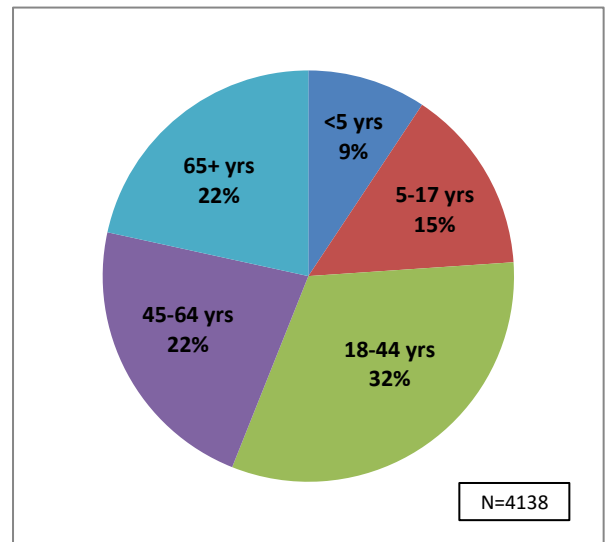


Influenza disproportionately impacts Black and Latino residents as seen in Figure 3. For the 2018-19 season through MMWR week 18, Black and Latino residents comprise 58% of all cases, compared to 52% of cases during the previous 2017-18 season through MMWR week 18.

**Figure 6a.**  
**Age** Distribution of Confirmed Influenza Cases,  
Boston Residents  
**2018-2019** Season Through MMWR Week 18



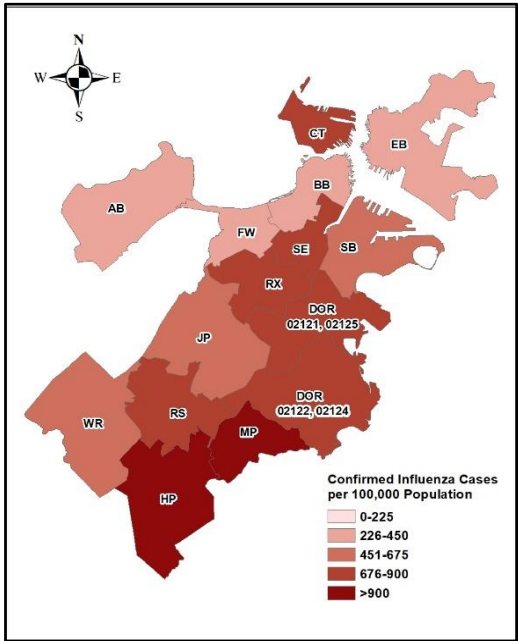
**Figure 6b.**  
**Age** Distribution of Confirmed Influenza Cases,  
Boston Residents  
**2017-2018** Season Through MMWR Week 18



For the 2018-19 season through MMWR week 18, adults 65 years of age and older accounted for 14% of confirmed influenza cases compared to 22% for the 2017-18 season through MMWR week 16. This is likely related to the predominant circulation of A(H1N1) viruses (which shifted to a predominance of A(H3N2) viruses around March) in contrast to the predominance of A(H3N2) viruses during the entirety of the 2017-18 season.

**Geographic Distribution**

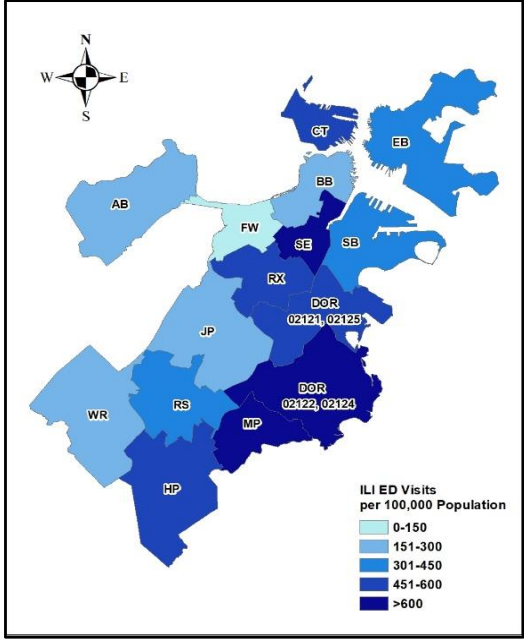
**Figure 7a. Rate of Confirmed Influenza Cases by Neighborhood per 100,000 Population September 30, 2018 - May 4, 2019**



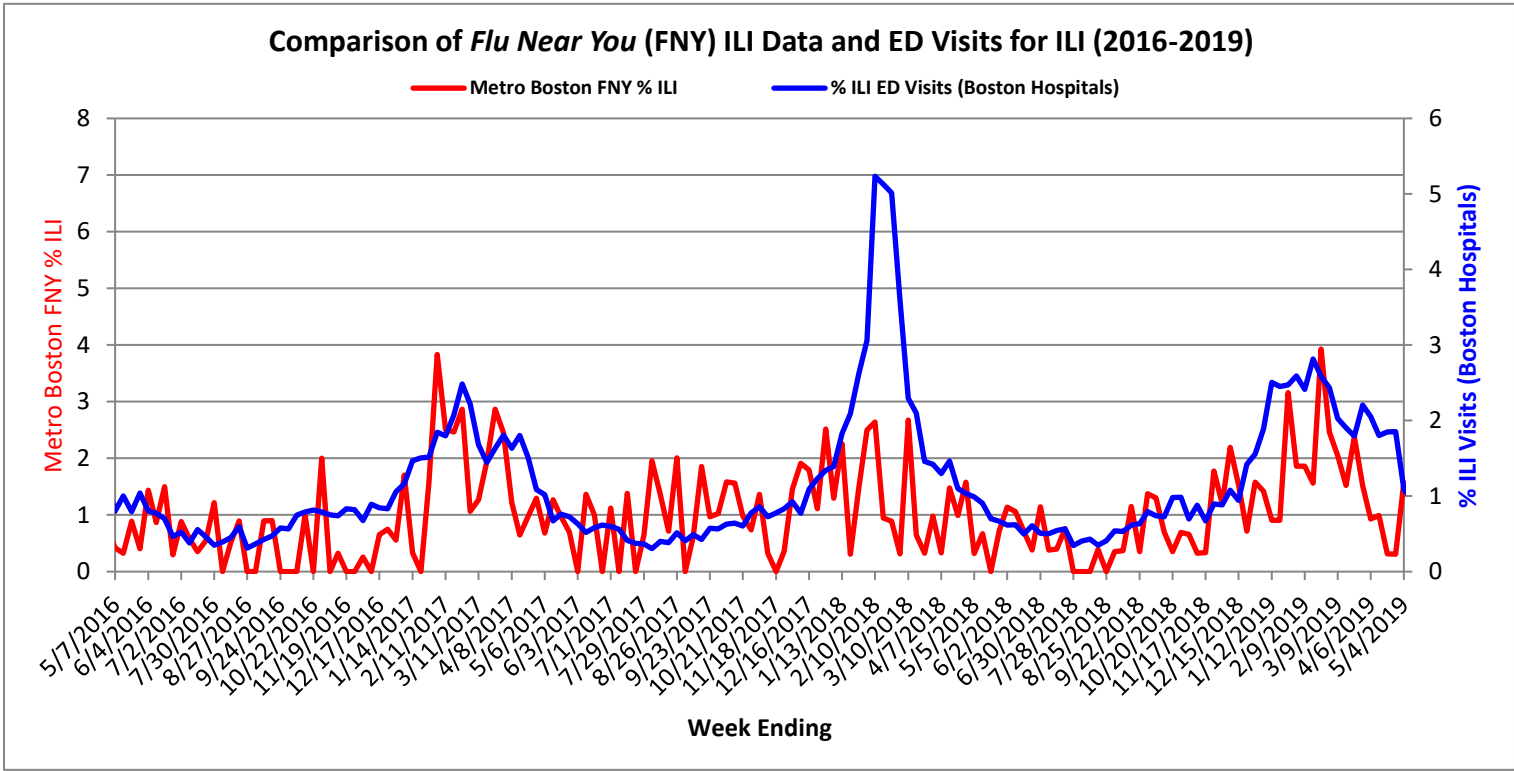
**Neighborhood Legend**

A/B=Allston/Brighton  
 BB=Back Bay  
 CH=Charlestown  
 EB=East Boston  
 DOR=Dorchester  
 FW=Fenway  
 HP=Hyde Park  
 JP=Jamaica Plain  
 MT=Mattapan  
 RS=Roslindale  
 RX=Roxbury  
 SB=South Boston  
 SE=South End

**Figure 7b. Rate of ILI Syndrome ED Visits by Neighborhood per 100,000 Population September 30, 2018 - May 4, 2019**



**Figure 8. Comparison of ILI Using Flu Near You (FNY)\* ILI and Boston ED Visits for ILI, 2016-2019**



\*Flu Near You (FNY) compiles weekly data of ILI activity in the United States. The data come from short, weekly internet-based surveys completed by voluntary participants who indicate whether they are healthy or have experienced any of a short list of symptoms.  
 The public may participate by enrolling in FNY at: <https://flunearyou.org/>