



4 takeaways from the 2016-2017 flu season

By Chelsea Rice | May 18, 2017

If the flu season felt longer this year than usual, that's because it was.

That's one of the insights drawn from the athenaInsight Flu Dashboard – which, like the Centers for Disease Control and Prevention surveillance system, uses electronic health record data to report on patient visits to 25,000 healthcare providers on athenahealth's national network.

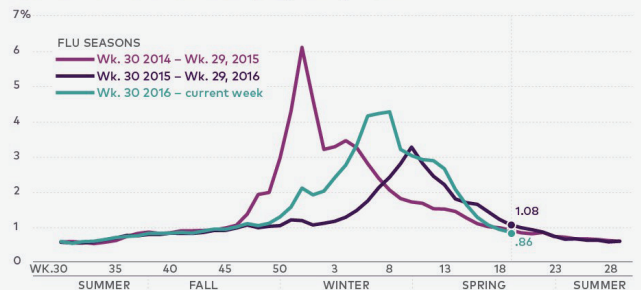
During the 2016-2017 flu season, athenahealth data scientists analyzed patterns of 1 million patients who visited pediatricians, primary care, and emergency medical providers with symptoms of influenza-like-illness (ILI): fever, cough, and/or sore throat.

As the rates of flu wind down, here are four key observations from this year's season:

1. Less intense, but longer

The annual viral outbreak kicked off in December, when the percentage of patients with ILI rose above the CDC's national baseline of 2.2 percent. But the flu didn't hit its seasonal peak until the week of Feb. 19 – when 4.4 percent of 700,000 patients across

Percentage of office visits with an influenza-like illness (ILI) diagnosis



Source: athenaResearch
 Sample: Based on 700,000 patient visits per week to primary care physicians, pediatricians, retail/urgent care, and emergency departments at practices on athenaNet since 2013. Weeks correspond with the CDC's Morbidity and Mortality Weekly Report.

the athenahealth network saw their primary care providers with influenza-like illness.

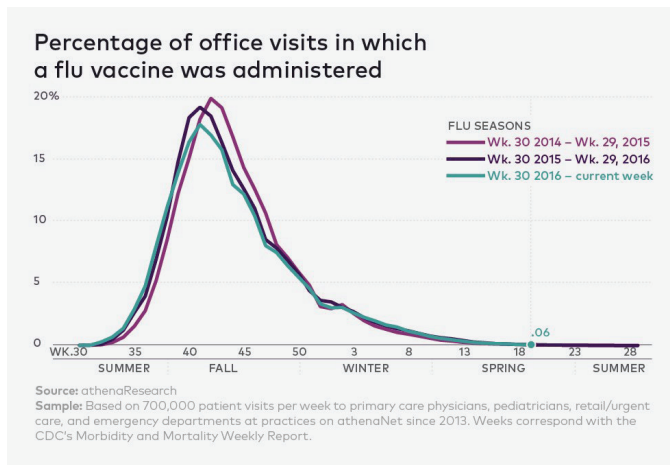
The West and Northeast were the first regions impacted in early February, but the flu quickly spread across the country by the end of the month. According to Stewart Richardson, a data scientist at athenahealth, the flu didn't impact any particular regions more than others this year.

The flu's nationwide peak of 4.4 percent was smaller, and came later, than two years ago, when the portion of patients visiting their doctors with the flu hit an astounding 6.3 percent in mid-December.

But the 2016-17 flu peak was higher than last season's, and lasted longer – with ILI rates above the national baseline from December until April for patients of all ages.

2. Earlier, less effective vaccines kept flu around longer

The percentage of patients getting flu shots at their doctors' offices peaked at approximately 17 percent of primary care visits the week of Oct. 9 this season, compared to 19 percent at the same time last season. Because this peak occurred at the same time in concurrent years, Richardson says it indicates that patients are getting vaccinated earlier than the past.



But that's not necessarily good news. While pharmacies are advertising flu shots earlier and earlier, studies have shown that the vaccines lose their effectiveness almost entirely by five or six months, leaving patients unprotected later in the season. That means this season, many patients may have been vulnerable in February when the flu hit its peak.

The CDC also reported that flu vaccines were only 43 percent effective this year, compared to 60 percent last year.

“When you combine this with slightly less vaccination activity across patients of all ages this year,” says Richardson, “it could explain why the flu season lasted longer.”

3. Seniors continued to skip flu shots

Every year, the CDC estimates that one in three seniors skips the flu shot. This year was no different.

Despite warnings from the CDC about the need for flu protection, data from the athenahealth network showed that only 16 percent of patients over 65 had received flu vaccinations from their primary care doctors as of the end of October – similar to rates from the last two years.

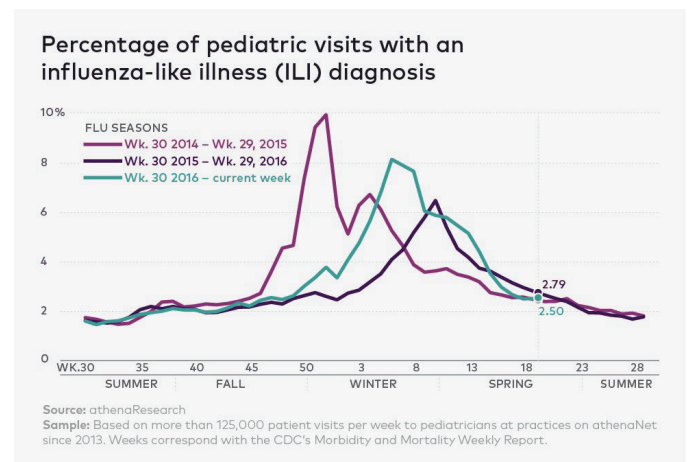
The lack of significant improvement highlights the need for increased attention and research about how to change seniors' behavior, said Kimberly Shea, Ph.D., an epidemiologist at Boston University.

There's certainly an urgent need. According to the CDC, the highest rate of flu-related hospitalizations – more than 287 per every 100,000 – was among adults 65 and over.

4. Children experienced a sudden peak season

Children are usually affected by the flu earlier than adults, and this year was no exception. Compared to 2015-2016, pediatric patients began their flu season two weeks earlier: the week of Feb. 5.

Between January and February, the portion of pediatric visits related to ILI rose from 3.3 percent to approximately 8 percent in five weeks, based on a sample of 125,000 visits per week. That sharp uptick signaled a coming peak among adult patients, which soon followed.



Richardson says that while this flu season showed a slightly higher peak for pediatric patients, it wound down more quickly than last year's. And it didn't even come close to the intensity of two years ago, when pediatric flu season peaked in mid-December at 9.9 percent and lasted longer at an elevated rate.

But the higher level of infected children, who continued to spread the virus at school and among family members, helped ensure that an elevated level of flu would linger longer among the general population.

With each of these factors in mind, Richardson says this year's flu season will probably be remembered not for its intensity, but for its duration.

Chelsea Rice is a senior writer for athenaInsight. Data analysis by Stewart Richardson.

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