

2017–2018 Influenza Season (10/01/2017 – 9/29/2018)

Synopsis:

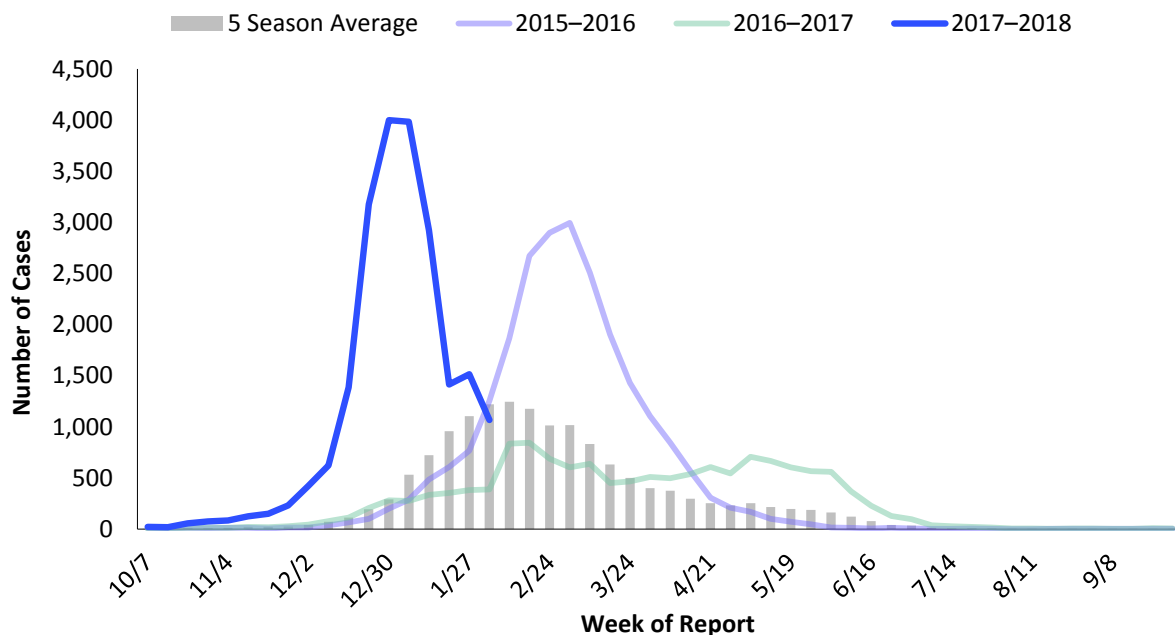
Influenza activity is elevated. Arizona reported Widespread Activity for week 5. Subscribe to the *Flu & RSV* report at azhealth.gov/email.

Influenza activity highlights:

- The numbers in this report are based on processed cases. There are a large number of reports that are still being processed.
- 1,066 laboratory-confirmed cases of influenza were reported in the past week, from 15 counties. 21,268 cases have been reported this season, with laboratory-confirmed cases identified in 15 counties.
- 18,699 (88%) reports this season are influenza A, 2,320 (11%) are influenza B, and 249 (1%) are of unknown type.
- To date, 461 Pneumonia and influenza deaths were identified this season.
- Two influenza-associated pediatric deaths have been reported for the 2017–2018 season in Maricopa County residents. One case was PCR positive for influenza A (H3), and one for influenza B/Victoria. One previously reported pediatric death has been retracted due to a laboratory result that was later determined to be a false positive from an out of state clinical laboratory.

Laboratory-Confirmed Influenza Activity by Season

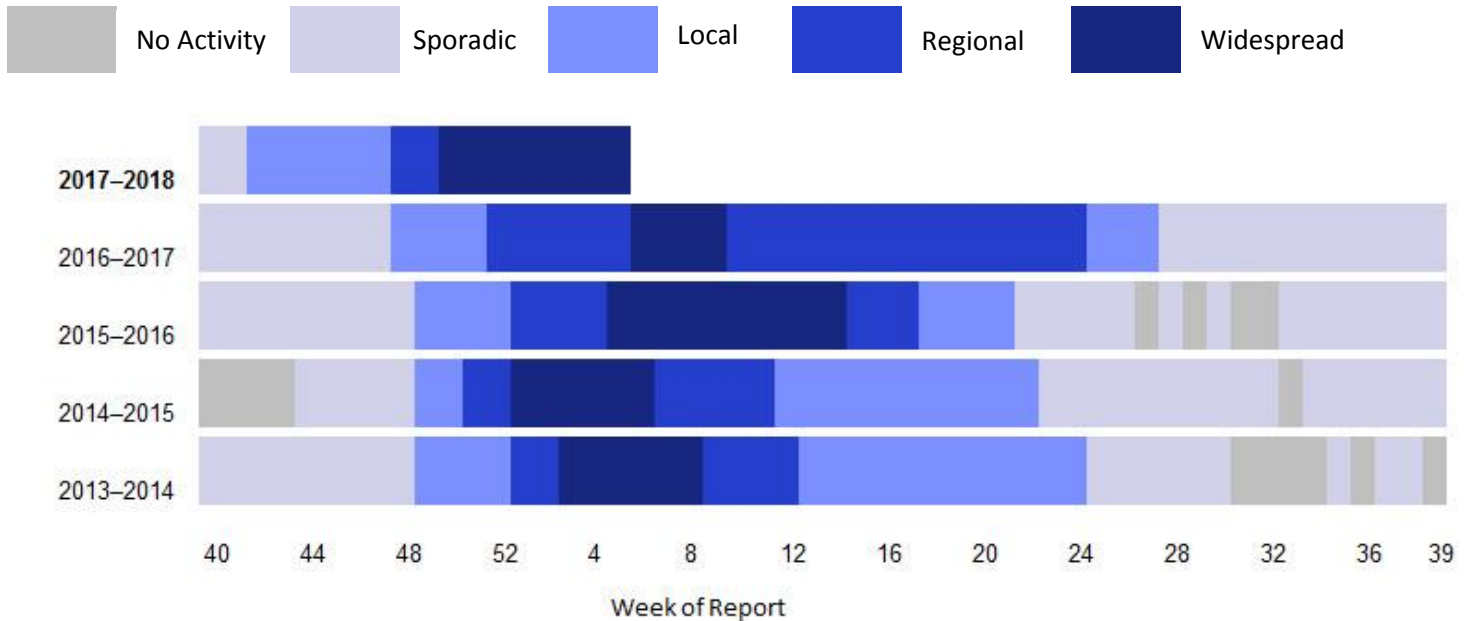
This past week there were **1,066 laboratory confirmed cases**, over 650 more cases compared to the same week last season. There have been a total of over 18,700 more cases to date this season compared to last season.



Number of Lab-Confirmed Influenza Cases Reported, by Week of Report: 2012–2018

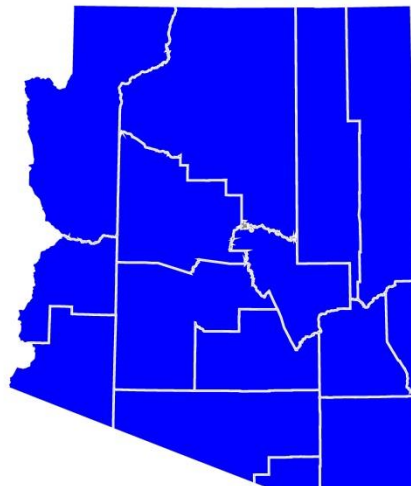
Arizona Influenza Activity Levels (see definitions at the end of this report)

Arizona reported **Widespread** activity for week 5.



See [Table 2](#) in the appendix for additional information

15 counties had a Laboratory-Confirmed Case in the past three weeks.
(Includes ALL reported lab-confirmed influenza reports, regardless of subtype)

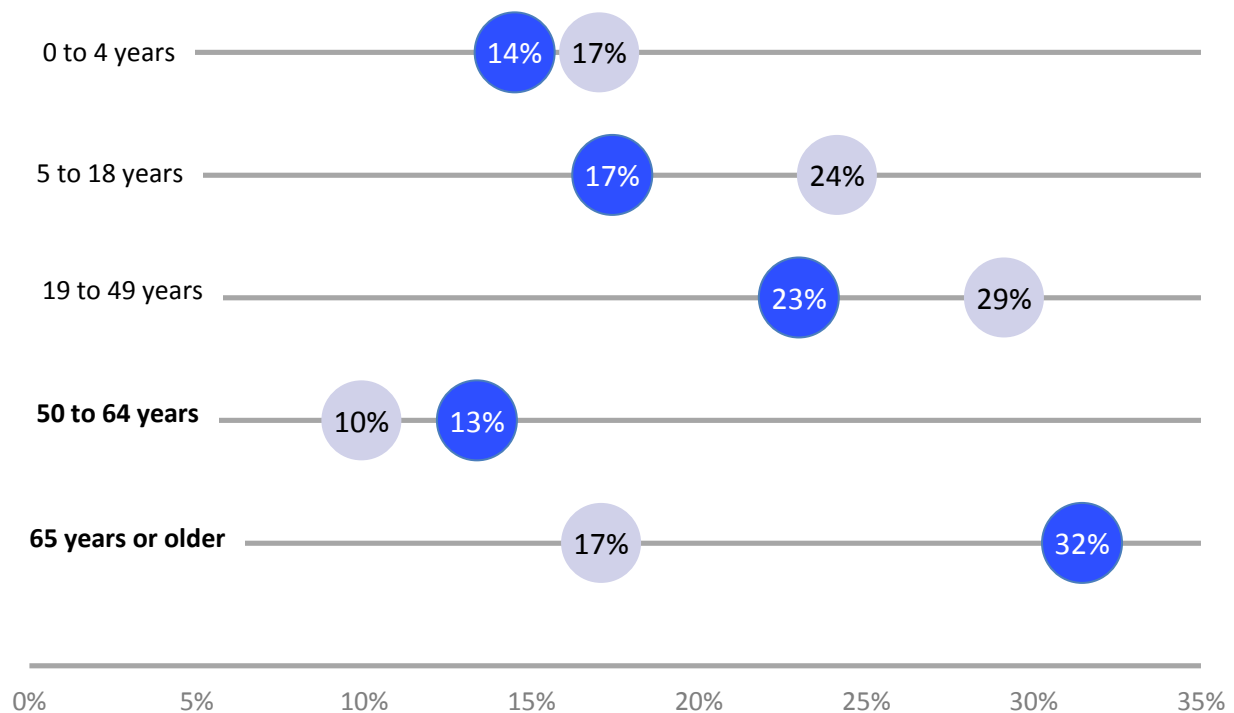


See [Table 3](#) in the appendix for additional information

Age of Reported Influenza Cases

The age groups most affected by influenza vary somewhat season-to-season, depending in part on the circulating influenza types and subtypes and any existing immunity in the community. Variations in age groups of reported influenza cases can also be caused by differences in laboratory testing and reporting practices year-to-year.

A larger percentage of individuals 50 years and older are being affected by influenza this 2017–2018 season compared to the average of the five previous seasons.

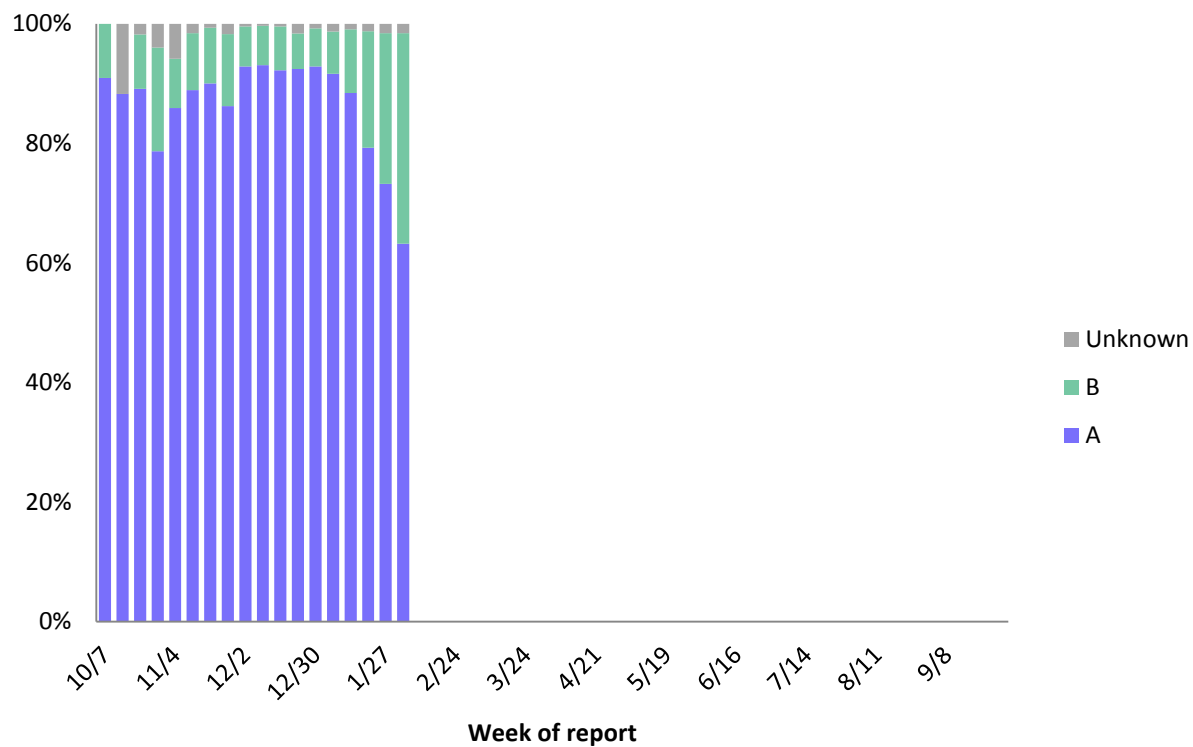


See [Tables 4 & 5](#) in the appendix for additional information

Influenza Types and Subtypes

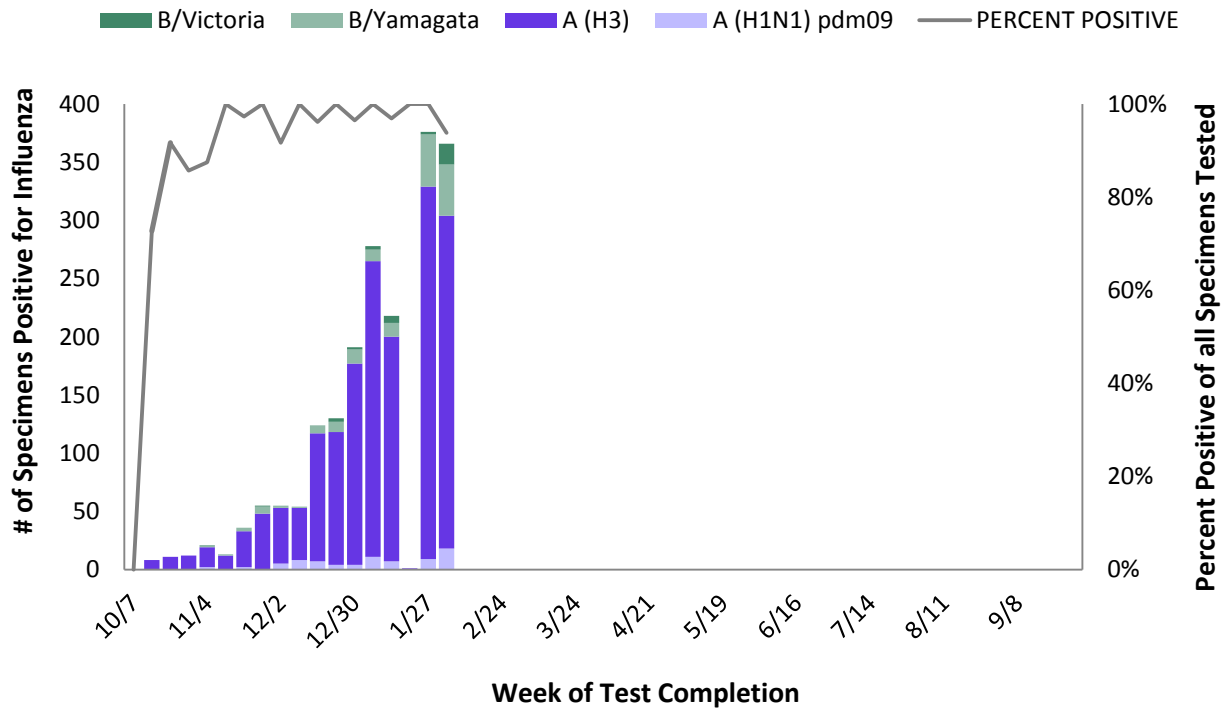
There are two main types of influenza – Type A and Type B – that cause illness in people. Influenza A viruses can be further divided into subtypes such as A (H1), or A (H3). While most tests can distinguish between influenza A and B, only specialized testing such as that done at the State Public Health Laboratory and a few other labs around the state can differentiate subtypes. Viral culture or molecular testing (reverse transcriptase polymerase chain reaction or RT-PCR) are the methods used to identify subtypes; knowing the type and subtype of the influenza viruses circulating can help health professionals make the best treatment and vaccination decisions.

Last week, **63%** of influenza cases were **type A** and **35%** were **type B**.



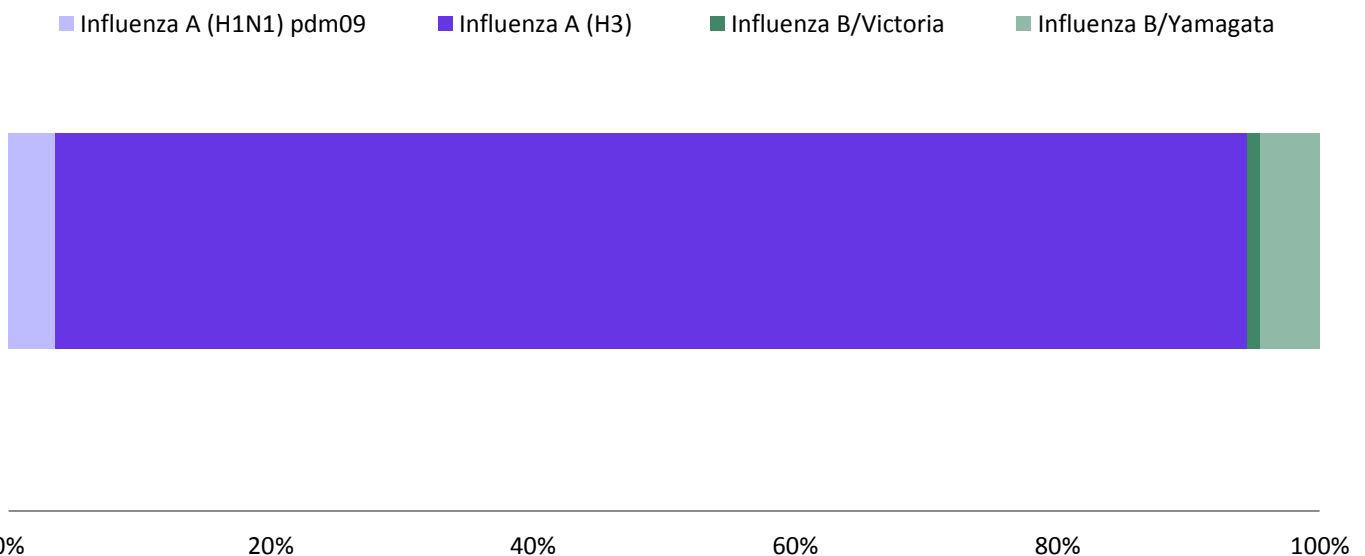
See [Table 6](#) in the appendix for additional information

In the past week, 366 (94%) of 390 specimens tested positive for influenza at ASPHL: 18 influenza A (H1N1) pdm09 viruses, 286 influenza A (H3) viruses, 18 influenza B/Victoria viruses, and 44 influenza B/Yamagata viruses.



Culture/PCR Testing Conducted at the Arizona State Public Health Laboratory, 2017–2018

91% of subtyped cases this season were influenza A (H3).

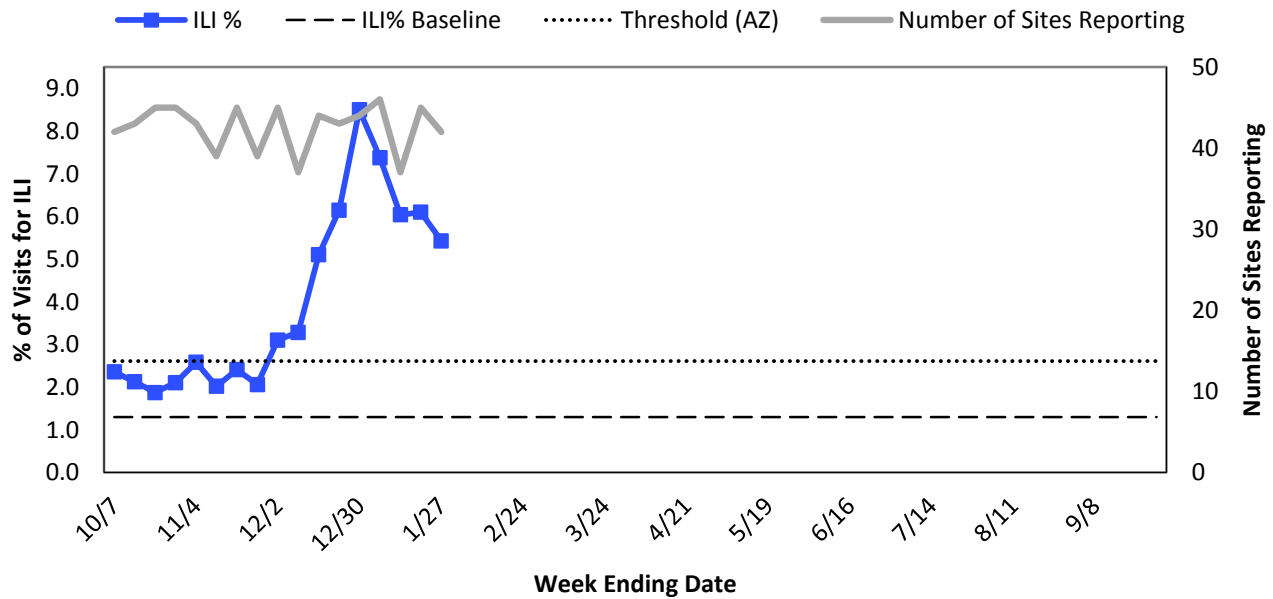


See [Tables 7 & 8](#) in the appendix for additional information

Influenza-Like Illness (ILI) Surveillance from Sentinel Outpatient Providers

ILI is defined as a fever of at least 100°F plus either a cough or a sore throat. In weeks when a relatively low number of enrolled facilities report data, the ILI proportion may not be as representative of Arizona activity as for other weeks. The state ILI baseline is 1.3% and the epidemic threshold is 2.6%*.

ILI percent was above threshold at **5.4%** in week 4.



Percentage of Visits for ILI at Sentinel Providers, 2017–2018, Arizona

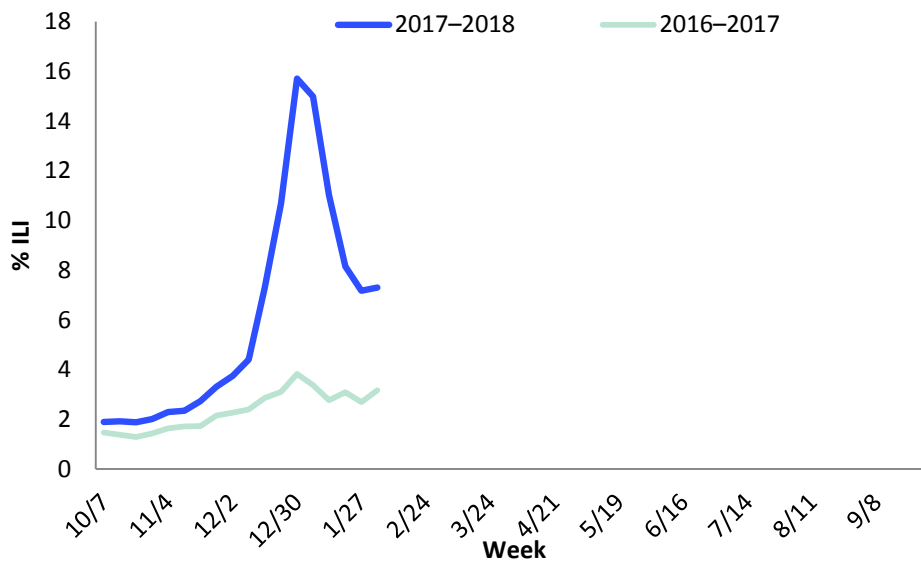
*Note: The baseline is defined as the mean of the state ILI% in weeks in the 2014–2017 influenza seasons in which two or more consecutive weeks each accounted for less than 2% of the season’s total number of specimens testing positive for influenza at the Arizona State Public Health Laboratory. The epidemic threshold is defined as the mean plus two standard deviations.

See [Table 10](#) in the appendix for additional information

Hospital Influenza-Like Illness (ILI) Surveillance

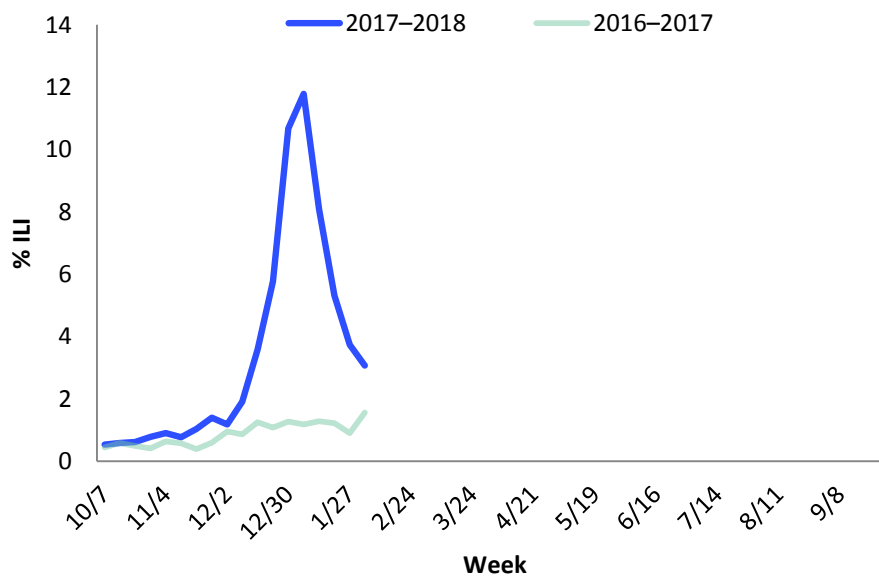
Hospital influenza-like illness data are analyzed using tools in the national BioSense Platform. More than 20 hospitals in Arizona share limited data about all emergency department visits and inpatient admissions (hospitalizations) with public health officials via an automated feed. Additionally, data from participating healthcare facilities in other states provide a national comparison. Patients meeting an ILI syndrome have a diagnosis of influenza or fever plus either a cough or a sore throat.

7% of Emergency Room visits were ILI in the past week compared to 3% for the same week in the 2016–2017 season.

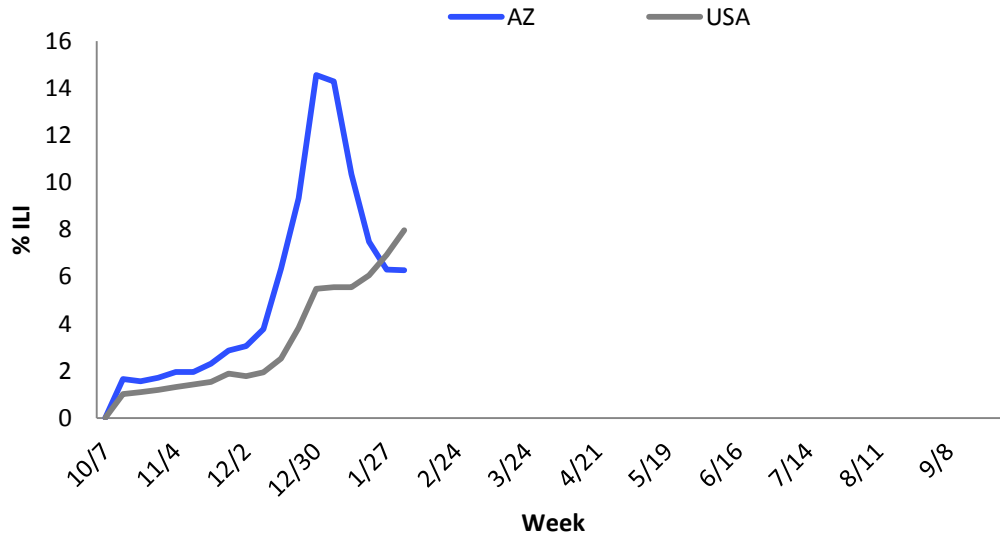


*Note: Emergency room visits that resulted in inpatient admissions at the same hospital are counted in inpatient admissions below.

3% of Hospitalizations (inpatient admissions) were ILI in the past week compared to 2% for the same week in the 2016–2017 season.



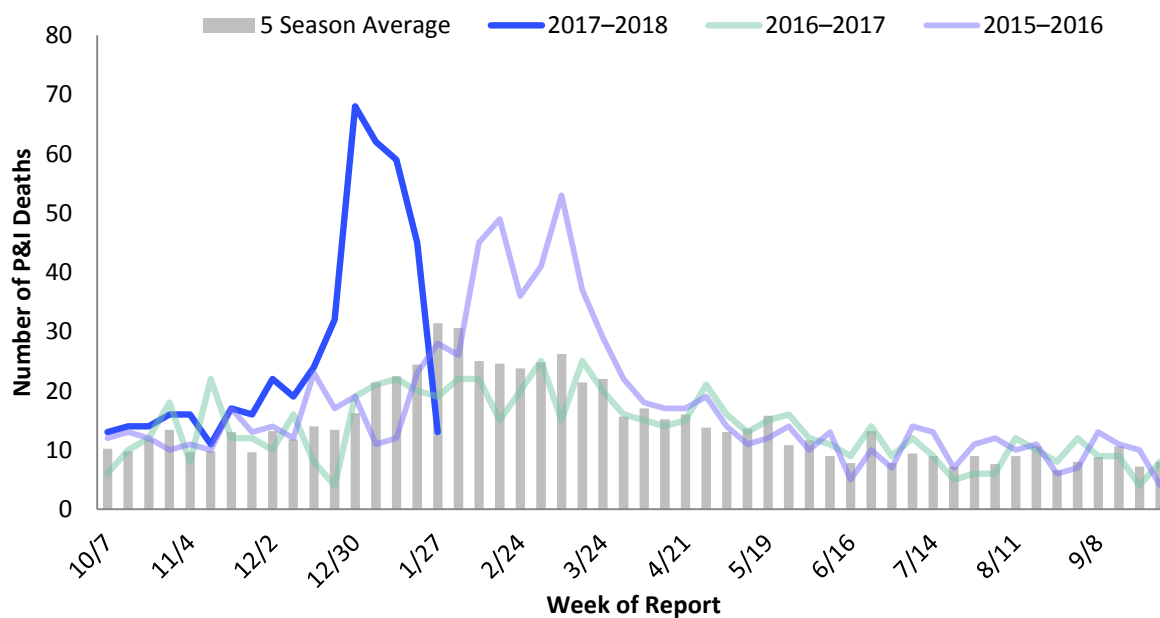
In **Arizona**, **6%** of all hospital visits in the past week were ILI, compared to **8%** nationally.



Pneumonia and Influenza Mortality from Death Certificates

Influenza-associated deaths in adults are not reportable in Arizona, and thus the number of laboratory-confirmed deaths each year is not available. Many influenza-related deaths are due to complications of influenza infection, including pneumonia, and influenza is infrequently listed as the cause of death on death certificates. Influenza mortality surveillance often uses the category of “pneumonia and influenza” (P & I) on death certificates as an indicator of the severity of an influenza season or of the trends within a season, even though not all pneumonias are associated with influenza. See the CDC website for more information http://www.cdc.gov/flu/about/disease/us_flu-related_deaths.htm.

To date, there have been 461 P&I deaths identified this season, over 200 more deaths than this same time last season.



***Note: Typically there is a >2 week reporting lag for cause of death, these numbers are provisional and will be revised as more data is received.**

See [Table 11](#) in the appendix for additional information

Appendix

Table 1: Reported Laboratory-Confirmed Influenza Cases Compared to Past Weeks and Seasons

| | Cumulative Season Total | Current Week Total |
|---|-------------------------|--------------------|
| 2017–2018 | 21,268 | 1,066 |
| 2016–2017 | 2,561 | 386 |
| 5 season average | 5,342 | 1,220 |
| % increase, compared to 2016–2017 season | 730% | 176% |
| % increase, compared to a typical flu season | 298% | -13% |
| % increase, compared to last week | 5% | -30% |

Back to Report: [Laboratory-Confirmed Influenza Activity by Season](#)

Table 2: Influenza Activity

| | 2017–2018 | 2016–2017 | 2015–2016 | 2014–2015 | 2013–2014 |
|---|---------------|---------------|--------------|--------------|--------------|
| Date First Case Confirmed, no travel | Oct. 16, 2017 | Oct. 13, 2016 | Oct. 4, 2015 | Nov. 3, 2014 | Oct. 4, 2013 |
| Weeks with Widespread Activity | Weeks 50–5 | Weeks 6–9 | Weeks 5–14 | Weeks 1–6 | Weeks 3–8 |

Back to Report: [Arizona Influenza Activity Levels](#)

Table 3: Laboratory-Confirmed Influenza Cases Reported, by County, 2017–2018 Influenza Season

(Includes ALL reported lab-confirmed influenza reports, regardless of subtype)

| County | 2017–2018 Season | Past Three Weeks | Last Week |
|--------------|------------------|------------------|--------------|
| Apache | 433 | 237 | 36 |
| Cochise | 567 | 264 | 42 |
| Coconino | 675 | 213 | 46 |
| Gila | 401 | 72 | 14 |
| Graham | 311 | 81 | 8 |
| Greenlee | 94 | 12 | 2 |
| La Paz | 106 | 15 | 7 |
| Maricopa | 10,480 | 1,463 | 452 |
| Mohave | 943 | 278 | 80 |
| Navajo | 579 | 288 | 79 |
| Pima | 2,598 | 470 | 105 |
| Pinal | 1,903 | 372 | 140 |
| Santa Cruz | 222 | 32 | 9 |
| Yavapai | 1,318 | 146 | 22 |
| Yuma | 638 | 51 | 24 |
| Total | 21,268 | 3,994 | 1,066 |

Back to Report: [Counties with a Laboratory-Confirmed Case in the Past Three Weeks](#)

Table 4: Age Group of Reported Influenza Cases, 2014–2015 through 2017–2018 Seasons

| Age Group | 2017–2018 Season (N=21,268) | 2016–2017 Season (N=13,588) | 2015–2016 Season (N=23,657) | 2014–2015 Season (N=12,594) |
|-------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 0 to 4 years | 3,083 (14%) | 1,859 (14%) | 4,093 (17%) | 2,152 (17%) |
| 5 to 18 years | 3,703 (17%) | 3,510 (26%) | 5,098 (22%) | 3,366 (27%) |
| 19 to 49 years | 4,890 (23%) | 3,447 (25%) | 7,343 (31%) | 3,044 (24%) |
| 50 to 64 years | 2,844 (13%) | 1,685 (12%) | 3,159 (13%) | 1,222 (10%) |
| 65 years or older | 6,688 (32%) | 2,998 (22%) | 3,879 (16%) | 2,669 (21%) |
| Unknown age | 60 (1%) | 89 (1%) | 85 (1%) | 141 (1%) |

Back to Report: [Age of Reported Influenza Cases](#)

Table 5: Age Group by Type, 2017–2018 Influenza Season

| Age Group | All Confirmed Cases (N=21,268) | Influenza A (N=18,699) | Influenza B (N=2,320) | Unknown Type (N=249) |
|-------------------|-----------------------------------|---------------------------|--------------------------|-------------------------|
| 0 to 4 years | 3,083 (14%) | 2,719 (15%) | 312 (13%) | 52 (21%) |
| 5 to 18 years | 3,703 (17%) | 2,970 (16%) | 668 (29%) | 65 (26%) |
| 19 to 49 years | 4,890 (23%) | 4,338 (23%) | 508 (22%) | 44 (18%) |
| 50 to 64 years | 2,844 (13%) | 2,498 (13%) | 316 (14%) | 30 (12%) |
| 65 years or older | 6,688 (32%) | 6,118 (33%) | 513 (22%) | 57 (23%) |
| Unknown age | 60 (1%) | 56 (<1%) | 3 (<1%) | 1 (<1%) |

Back to Report: [Age of Reported Influenza Cases](#)

Table 6: Influenza Type, by Season

| | 2017–2018 Number | 2017–2018 Percent | 2016–2017 Number (Percent) | 2015–2016 Number (Percent) | 2014–2015 Number (Percent) |
|-------------|---------------------|----------------------|----------------------------------|----------------------------------|----------------------------------|
| Total | 21,268 | 100% | 13,850 (100%) | 23,657 (100%) | 12,594 (100%) |
| Influenza A | 18,699 | 88% | 8,397 (61%) | 17,179 (73%) | 11,013 (87%) |
| Influenza B | 2,320 | 11% | 5,238 (38%) | 6,207 (26%) | 1,428 (11%) |
| Unknown | 249 | 1% | 215 (1%) | 271 (1%) | 153 (2%) |

Back to Report: [Influenza Types](#)

Table 7: Influenza subtyping of culture or RT-PCR results, by season

| | 2017–2018 Number | 2017–2018 Percent | 2016–2017 Number (Percent) | 2015–2016 Number (Percent) | 2014–2015 Number (Percent) |
|---------------------------|---------------------|----------------------|----------------------------------|----------------------------------|----------------------------------|
| Influenza Subtypes | 3,198 | 100% | 2,844 (100%) | 2,757 (100%) | 2,202 (100%) |
| Influenza A (H1N1) pdm09 | 114 | 4% | 74 (2%) | 1,321 (48%) | 5 (0.1%) |
| Influenza A (H3) | 2,908 | 91% | 1,987 (70%) | 999 (36%) | 2,127 (97%) |
| Influenza B/Victoria | 31 | <1% | 222 (8%) | 54 (2%) | 20 (1%) |
| Influenza B/Yamagata | 145 | 5% | 561 (20%) | 383 (14%) | 50 (2%) |

Back to Report: [Influenza Subtypes](#)

Table 8: Influenza subtyping of culture or RT-PCR results, by region

| Region* | Influenza A (H1N1) pdm09 | Influenza A (H3) | Influenza B/Victoria | Influenza B/Yamagata | Total |
|----------|--------------------------|------------------|----------------------|----------------------|--------------|
| Arizona | 114 (4%) | 2,908 (91%) | 31 (<1%) | 145 (5%) | 3,198 (100%) |
| Central | 58 (3%) | 1,673 (91%) | 26 (1%) | 83 (5%) | 1,840 (100%) |
| Northern | 20 (5%) | 360 (87%) | 2 (<1%) | 32 (8%) | 414 (100%) |
| Southern | 31 (6%) | 429 (89%) | 2 (1%) | 18 (4%) | 480 (100%) |
| Western | 5 (1%) | 446 (96%) | 1 (<1%) | 12 (3%) | 464 (100%) |

Back to Report: [Influenza Subtypes](#)

Table 9: Influenza subtyping results of pediatric deaths, by season

| | 2017–2018 Number (Percent) | 2016–2017 Number (Percent) | 2015–2016 Number (Percent) |
|-------------------------------|----------------------------|----------------------------|----------------------------|
| Influenza A (H3) | 1 (50%) | 2 (100%) | 0 (0%) |
| Influenza A (H1N1) pdm09 | 0 (0%) | 0 (0%) | 3 (75%) |
| Influenza A (subtype unknown) | 0 (0%) | 0 (0%) | 1 (25%) |
| Influenza B/Victoria | 1 (50%) | 0 (0%) | 0 (0%) |
| Influenza B/Yamagata | 0 (0%) | 0 (0%) | 0 (0%) |
| Influenza B (lineage unknown) | 0 (0%) | 0 (0%) | 0 (0%) |
| Unknown | 0 (0%) | 0 (0%) | 0 (0%) |
| Total | 2 (100%) | 2 (100%) | 4 (100%) |

Table 10: Influenza-Like Illness Surveillance

| | Week 4 | Week 3 |
|--|-----------------|-----------------|
| Proportion of patient visits to sentinel providers for ILI | 5.4% | 6.1% |
| Comparison to epidemic threshold* | Above threshold | Above threshold |
| Intensity level (see definitions at the end of report) | High | High |

Back to Report: [Influenza-Like Illness \(ILI\) Surveillance from Sentinel Outpatient Providers](#)

Table 11: P&I Mortality Compared to Past Seasons

| Season | Cumulative Season Total |
|------------------|-------------------------|
| 2017–2018 | 461 |
| 2016–2017 | 239 |
| 2015–2016 | 257 |
| 5 Season average | 255 |

Back to Report: [Pneumonia and Influenza Mortality from Death Certificates](#)

Glossary of Key Terms:

2017–2018 Influenza Season – The season is defined by surveillance weeks. The first day of the 2017–2018 influenza season was October 1st, 2017, or week 40 and the 2017–2018 surveillance season will continue through September 29th, 2018, or week 39. Data in this report are provisional and may change as more reports are received.

Laboratory Confirmed Case – Under Arizona Administrative Code R9-6-204, all positive influenza test results are reported to ADHS by laboratories. The cases included in this report represent a small proportion of the true number of cases of influenza. Many people do not visit the doctor when ill and doctors should not be expected to run tests on all patients exhibiting influenza-like symptoms. Positive influenza tests are reported to ADHS. Many types of tests are included in the numbers below: rapid antigen tests, direct fluorescent antigen tests, viral culture, and molecular testing.

BioSense Platform – BioSense Platform is a national secure integrated electronic health information system with standardized analytic tools and processes used by public health officials to analyze syndromic data to improve their common awareness of health threats over time and across regional boundaries. For more information, please visit <https://www.cdc.gov/nssp/overview.html>.

Regions – Regions in Arizona are defined by county: Central (Gila, Maricopa, Pinal); Northern (Apache, Coconino, Navajo, Yavapai); Southern (Cochise, Graham, Greenlee, Pima, Santa Cruz); Western (La Paz, Mohave, Yuma).

Activity Levels: Indicator of the geographic spread of influenza activity, reported to CDC by all states each week.

Widespread: Increased influenza-like illness from sentinel providers (ILI) in three or more regions and large numbers of laboratory-confirmed influenza cases in those regions.

Regional: Increased ILI in two regions and elevated numbers of laboratory-confirmed influenza cases in those regions.

Local: Increased ILI in one region and elevated numbers of laboratory-confirmed influenza cases in that region.

Sporadic: No increase in ILI activity and only isolated laboratory-confirmed influenza cases.

No Activity: No increase in ILI activity and no laboratory-confirmed influenza cases.

Intensity Level – Intensity 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. Intensity levels range from minimal, corresponding to ILI activity from outpatient clinics being below the average, to intense, which would correspond to ILI activity from outpatient clinics being much higher than average.