

2016-2017 Influenza Season (10/02/2016 – 9/30/2017)

Synopsis:

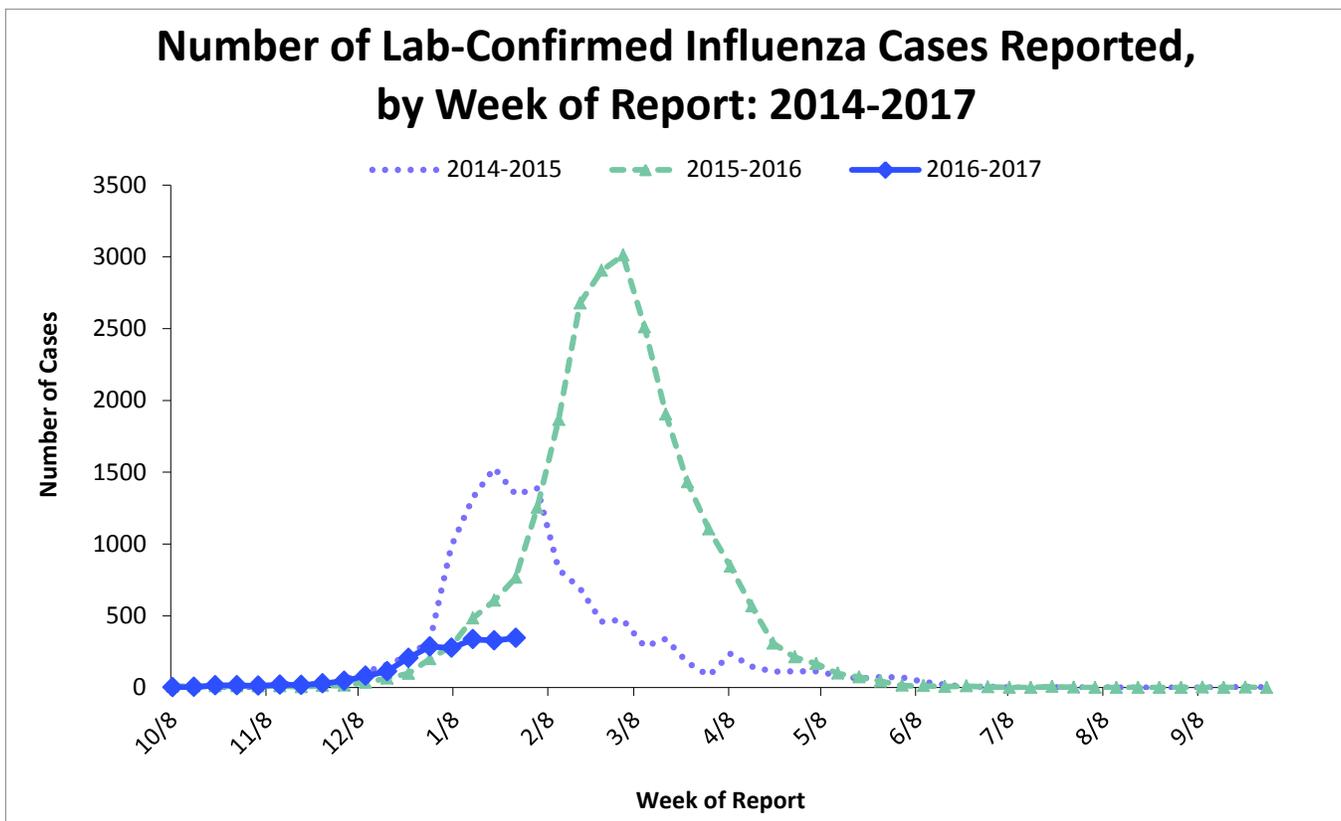
Influenza activity is elevated in Arizona. Arizona reported Regional Activity for week 4.

Influenza activity highlights:

- 345 laboratory-confirmed cases of influenza were reported in the past week, from thirteen counties. 2,138 cases have been reported this season, with laboratory-confirmed cases identified in fifteen counties.
- 1,924 (90%) reports this season are influenza A, 177 (8%) are influenza B, and 37 (2%) are of unknown type.
- 153 (93%) of 165 specimens tested positive for influenza at ASPHL last week: 8 influenza A (H1N1) pdm09 viruses, 139 influenza A (H3) viruses, 1 influenza B/Victoria virus, and 5 influenza B/Yamagata viruses.
- Influenza-like illness activity at sentinel providers was above Arizona’s threshold in week 3.
- 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.

Laboratory-Confirmed Influenza Activity by Season [2014-2017]

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.



Reported Laboratory-Confirmed Cases Compared to Last Week and Last Season

	Cumulative Season Total	Current Week Total
2016-2017	2,138	345
2015-2016	2,641	766
5 year average	3,702	1,033
% increase, compared to 2015-2016 season	-19%	-55%
% increase, compared to a typical flu season	-42%	-67%
% increase, compared to last week	19%	5%

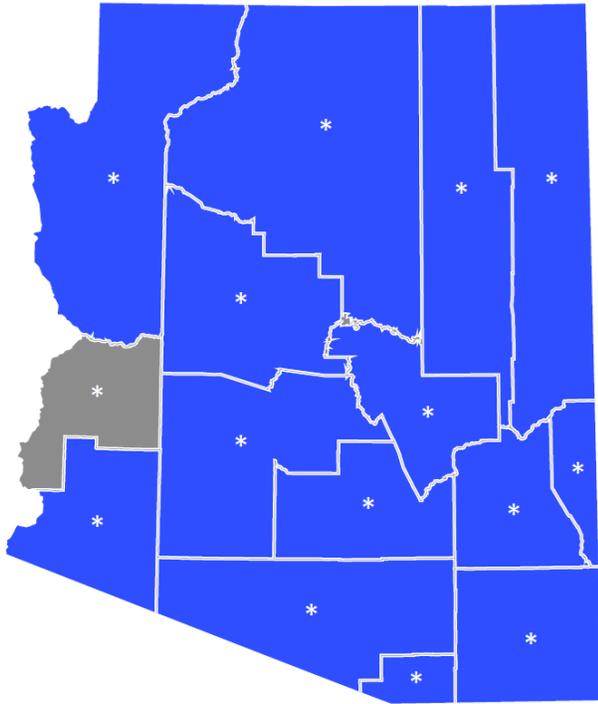
Arizona Influenza Activity Levels *(see definitions at the end of this report)*

	2016-2017	2015-2016	2014-2015	2013-2014	2012-2013
This Week	Regional	Regional	Widespread	Widespread	Widespread
Last Week	Regional	Regional	Widespread	Widespread	Widespread
Date First Case Confirmed, no travel	Oct. 13, 2016	Oct. 4, 2015	Nov. 3, 2014	Oct. 4, 2013	Oct. 30, 2012
Weeks with Widespread Activity	N/A	Week 5-14	Weeks 1-6	Weeks 3-8	Weeks 1-7

Laboratory-Confirmed Cases Reported, by County, 2016-2017 Influenza Season

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

County	2016-2017 Season	Past Three Weeks	Last Week
Apache	100	80	30
Cochise	58	32	9
Coconino	105	79	49
Gila	12	7	3
Graham	8	1	1
Greenlee	2	1	0
La Paz	2	0	0
Maricopa	801	458	142
Mohave	302	58	9
Navajo	93	39	13
Pima	232	112	46
Pinal	93	58	19
Santa Cruz	17	9	6
Yavapai	293	60	13
Yuma	20	15	5
Total	2,138	1,009	345



Key:

- * = Any activity reported this season
- = Activity reported in the previous three weeks
- = No activity reported in the previous three weeks

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.

Age Group of Reported Influenza Cases, 2013-2014 through 2016-2017 Seasons

Age Group	2016-2017 Season (N=2,138)	2015-2016 Season (N=23,689)	2014-2015 Season (N=12,594)	2013-2014 Season (N=12,443)
0 to 4 years	294 (14%)	4,104 (17%)	2,152 (17%)	2,319 (19%)
5 to 18 years	415 (19%)	5,099 (22%)	3,366 (27%)	2,797 (22%)
19 to 49 years	526 (25%)	7,357 (31%)	3,044 (24%)	4,478 (36%)
50 to 64 years	295 (14%)	3,159 (13%)	1,222 (10%)	1,563 (13%)
65 years or older	587 (27%)	3,879 (16%)	2,669 (21%)	1,205 (10%)
Unknown age	21 (1%)	91 (1%)	141 (1%)	81 (1%)

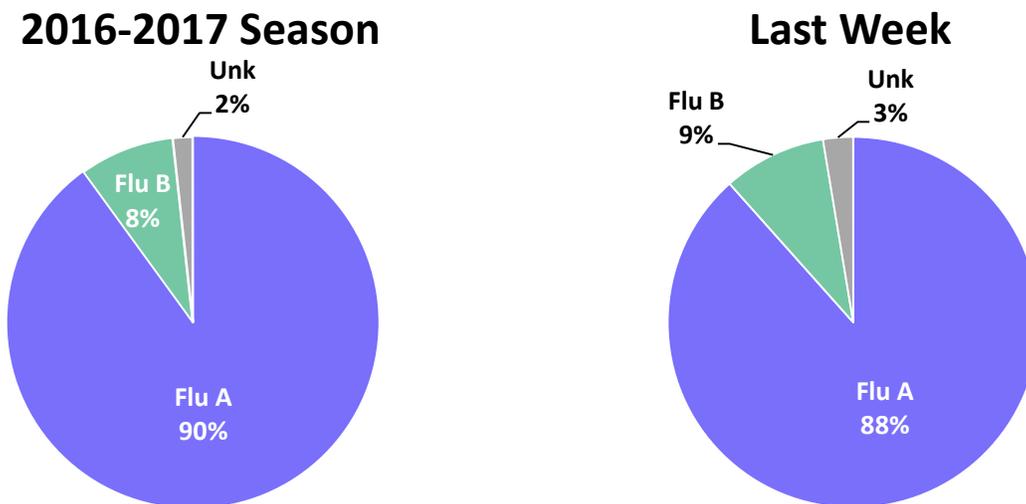
Age Group by Type, 2016-2017 Influenza Season

Age Group	All Confirmed Cases (N=2,138)	Influenza A (N=1,924)	Influenza B (N=177)	Unknown Type (N=37)
0 to 4 years	294 (14%)	252 (13%)	31 (18%)	11 (30%)
5 to 18 years	415 (19%)	381 (20%)	27 (15%)	7 (19%)
19 to 49 years	526 (25%)	469 (24%)	48 (27%)	9 (24%)
50 to 64 years	295 (14%)	263 (14%)	29 (16%)	3 (8%)
65 years or older	587 (27%)	541 (28%)	39 (22%)	7 (19%)
Unknown age	21 (1%)	18 (1%)	3 (2%)	0 (0%)

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.

Influenza Type, from all tests reported



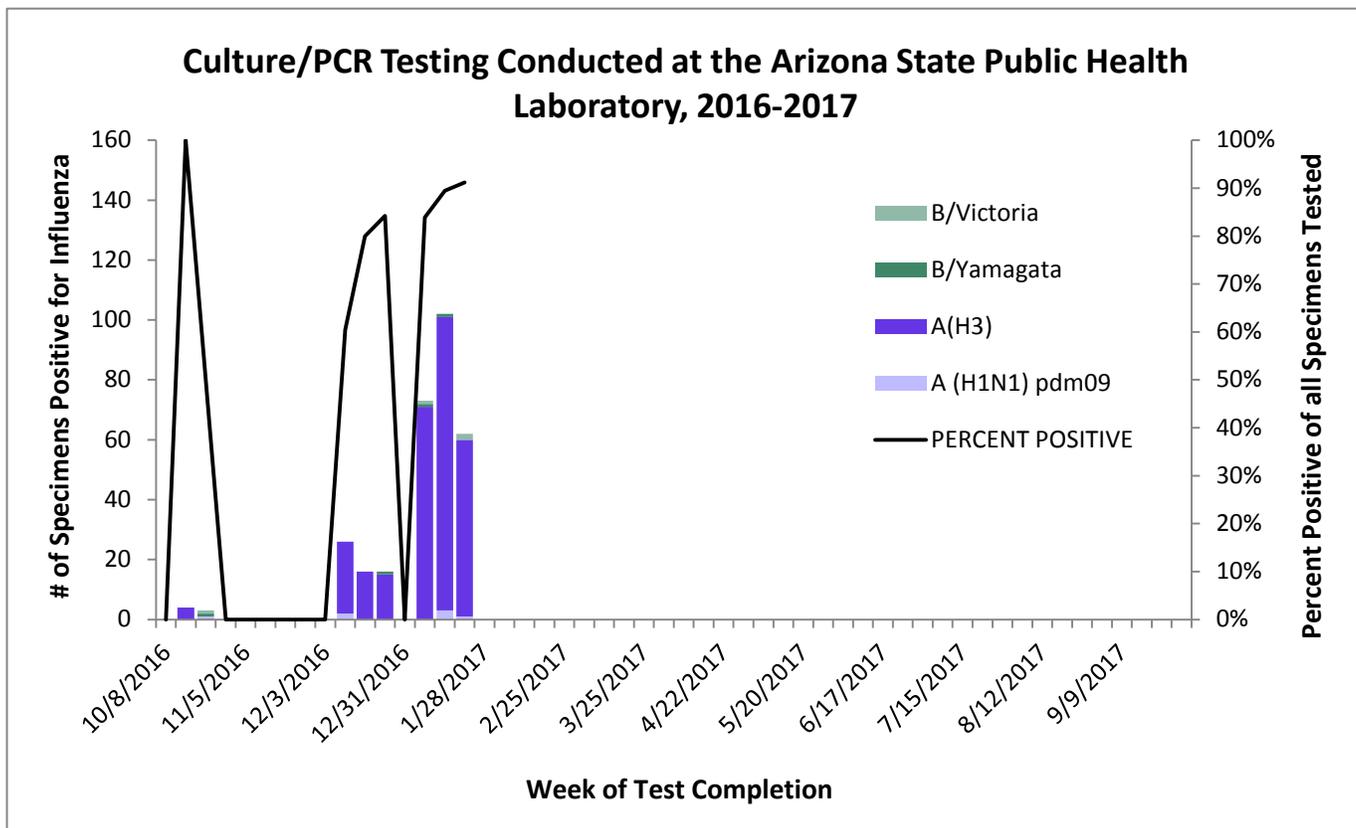
Influenza Type, by Season

	2016-2017 Season Number	2016-2017 Season Percent	2015-2016 Number (Percent)	2014-2015 Number (Percent)	2013-2014 Number (Percent)
Total	2,138	100%	23,689 (100%)	12,594 (100%)	12,443 (100%)
Influenza A	1,924	90%	17,199 (73%)	11,013 (87%)	9,495 (76%)
Influenza B	177	8%	6,220 (26%)	1,428 (11%)	2,750 (22%)
Unknown	37	2%	270 (1%)	153 (1%)	198 (2%)

Influenza Subtype

Data from the Arizona State Public Health Laboratory (ASPHL)

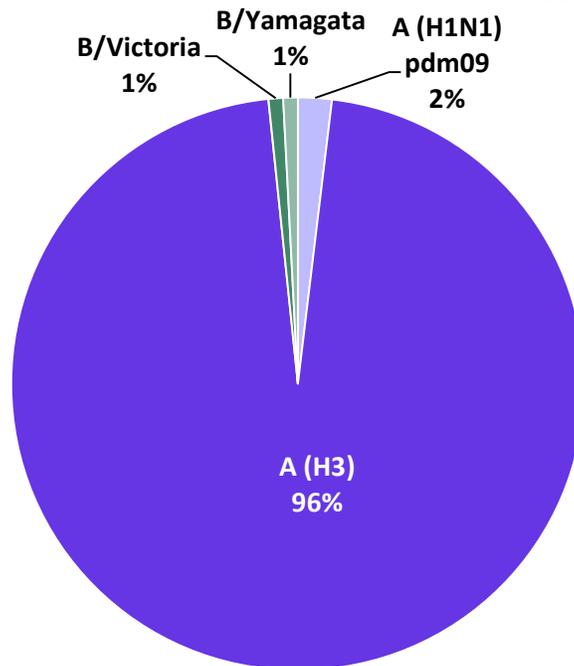
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Influenza subtype, by season, from any laboratories performing culture or RT-PCR

	2016-2017 Season Number	2016-2017 Season Percent	2015-2016 Number (Percent)	2014-2015 Number (Percent)	2013-2014 Number (Percent)
Influenza Subtypes	366	100%	4,871 (100%)	2,202 (100%)	1,795 (100%)
Influenza A (H1N1) pdm09	7	2%	1,298 (27%)	5 (0.1%)	1,480 (82%)
Influenza A (H3)	353	96%	1,344 (28%)	2,127 (97%)	151 (8%)
Influenza B/Victoria	3	1%	1,248 (26%)	20 (1%)	128 (7%)
Influenza B/Yamagata	3	1%	981 (20%)	50 (2%)	36 (2%)

2016-2017 Season by Subtype



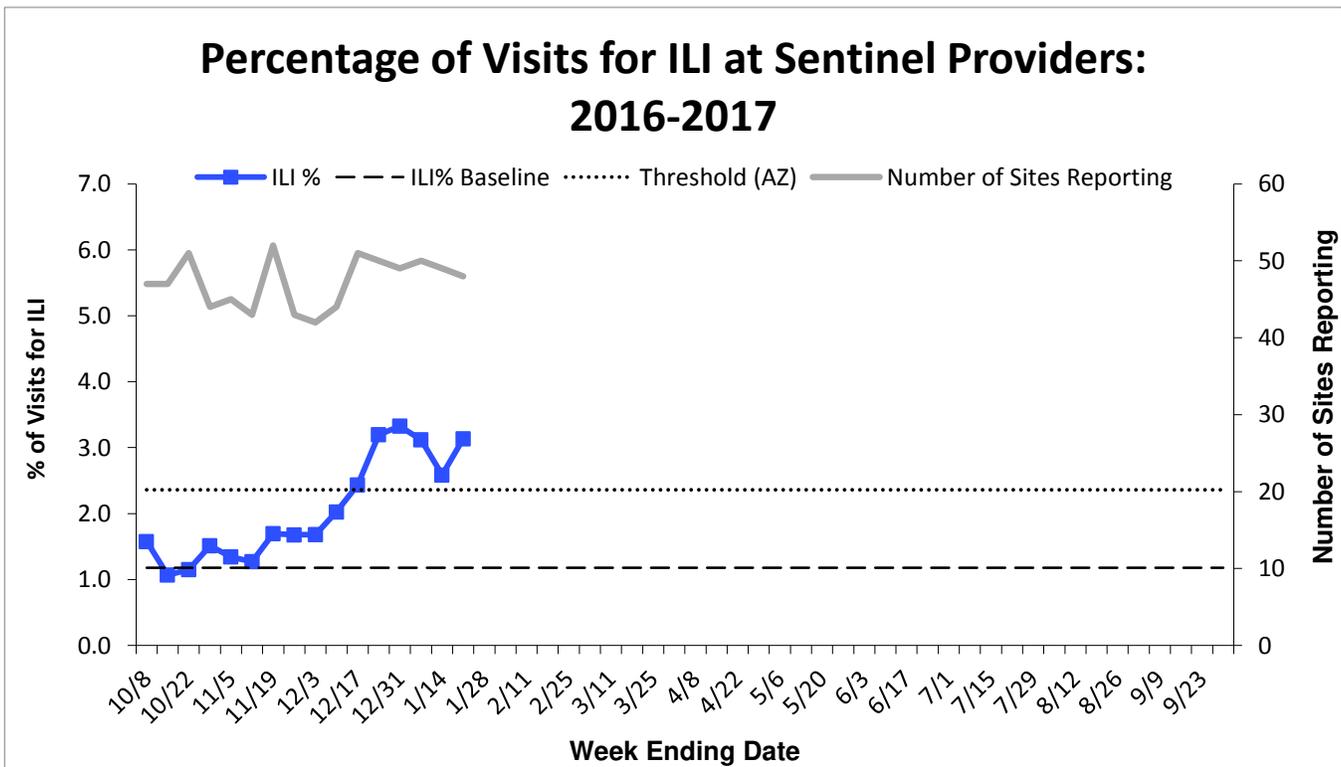
Influenza subtyping of culture or RT-PCR results, by region

Region*	Influenza A (H1N1) pdm09	Influenza A (H3)	Influenza B/Victoria	Influenza B/Yamagata	Total
Arizona	7 (2%)	353 (96%)	3 (1%)	3 (1%)	366 (100%)
Central	6 (3%)	185 (94%)	3 (2%)	3 (2%)	197 (100%)
Northern	0 (0%)	77 (100%)	0 (0%)	0 (0%)	77 (100%)
Southern	1 (2%)	47 (98%)	0 (0%)	0 (0%)	48 (100%)
Western	0 (0%)	44 (100%)	0 (0%)	0 (0%)	44 (100%)

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 1.2% and the epidemic threshold is 2.4%*.

	Week 3	Week 2
Proportion of patient visits to sentinel providers for ILI	3.1%	2.6%
Comparison to epidemic threshold*	Above threshold	Above threshold
Intensity level (<i>see definitions at the end of report</i>)	Moderate	Low



*Note: The baseline is defined as the mean of the state ILI% in weeks in the 2013-2016 flu 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.

Glossary of Key Terms:

2016-2017 Influenza Season – The season is defined by surveillance weeks. The first day of the 2016-2017 influenza season was October 2nd, 2016, or week 40 and the 2016-2017 surveillance season will continue through September 30th, 2017, or week 39.

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 Levels: 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.