Alaska State Virology Laboratory (ASVL) Weekly Report – Week #24
June 9 - 15, 2019

(This report was prepared by Jayme Parker, Public Health Microbiologist III at the Alaska State Virology Lab in Fairbanks, Alaska)

The Section of Epidemiology is the primary contact for consultation for the following potential active infections: rabies, norovirus, measles, mumps, rubella, varicella zoster, and novel influenza. Please direct your calls to the Epi-Team at 907-269-8000; or their 24 hour # 1-800-478-0084.

1. Influenza virus

PCR Testing for Week #2019-24 TP: true positive, FP: false positive, TN: true negative, FN: false negative. True = 2 tests concur, False = 2 tests do not concur Collection Date Range: 5/6/2019 – 5/31/2019		Corresponding Influenza Sentinel Providers Results								
		Rapid Influenza Test Results				PCR Test Results				No Data
ASVL PCR Results		TP	TN	FP	FN	TP	TN	FP	FN	
Influenza A/H1 2009 pdm Positive										
Influenza A/H3 Positive	4					4				
Influenza A (subtype pending)	4					4				
Influenza B Positive (Yamagata lineage)										
Influenza B Positive (Victoria lineage)	8					8				
Influenza B (genotype pending)	5					5				
Influenza Negative	54		2				48	1		3
Total # Specimens Tested	**75**	**0**	**2**	**0**	**0**	**21**	**48**	**1**	**0**	**3**

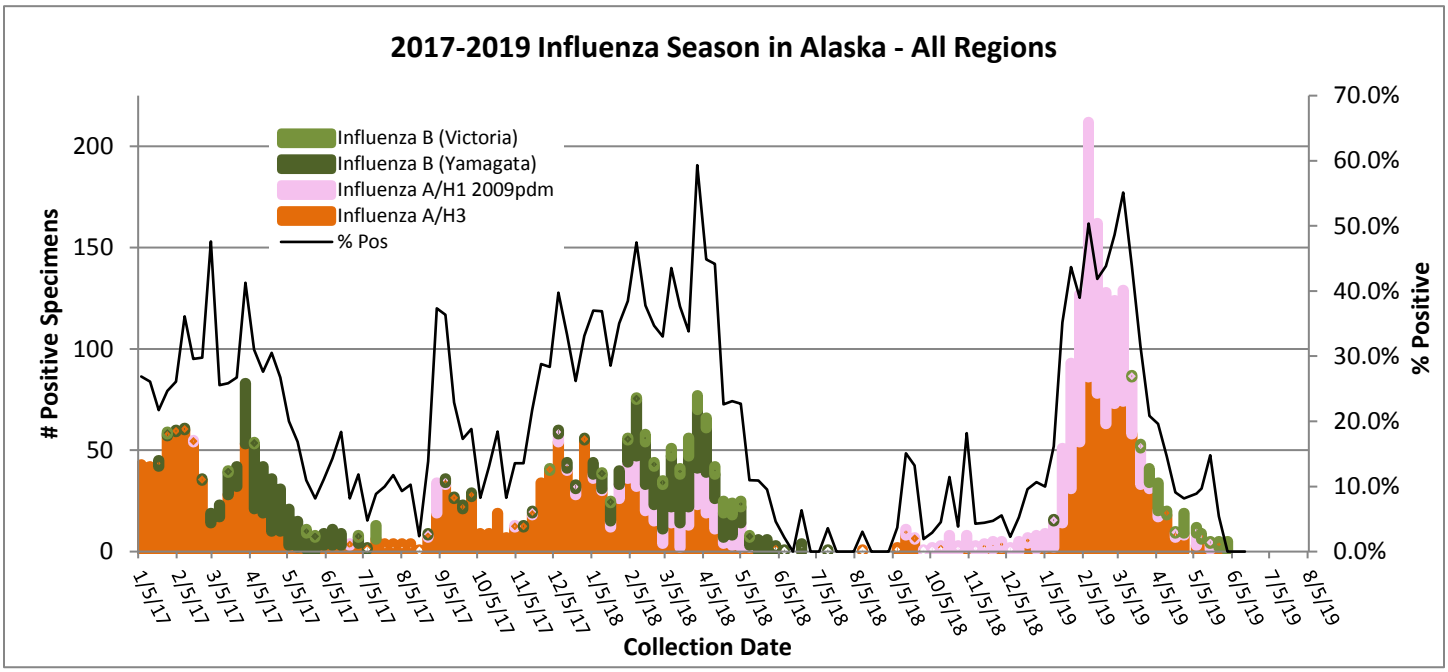
Summary: Influenza vaccine strain match (specimens collected between 6/1/2018 – present)

# AK Specimens Tested by CDC	Results	Most closely related subtype	Clade	Match 2018–19 flu vaccine?
26 Influenza A/H3 viruses	6 (23.1%)	A/SINGAPORE/INFIMH-16-0019/2016-LIKE (H3N2)	3C.2a	Yes
	5 (19.2%)	A/SINGAPORE/INFIMH-16-0019/2016-LIKE (H3N2)	3C.2a1	Yes
	15 (57.7%)	A/SINGAPORE/INFIMH-16-0019/2016-LIKE (H3N2)	3C.3a	Lower affinity*
22 Influenza A/H1N1 viruses	22 (100%)	A/MICHIGAN/45/2015-LIKE (H1N1)pdm09	6B.1A	Yes
2 Influenza B virus (Yamagata)	2 (100%)	B/PHUKET/3073/2013-LIKE	Y3	Yes
2 Influenza B viruses (Victoria)	2 (100%)	B/COLORADO/06/2017-LIKE	V1A-3del	Lower affinity*

Summary: Influenza antiviral resistance surveillance (specimens collected between 6/1/2018 – present)

# AK Specimens Tested by CDC	Results	Description
15 Influenza A/H3 virus	15 (100%)	Susceptible; wild-type neuraminidase gene sequence at amino acid positions 119, 292, and 294
10 Influenza A/H1N1 virus	10 (100%)	Susceptible; wild-type neuraminidase gene sequence at amino acid positions 223 and 275
0 Influenza B (Victoria)		
0 Influenza B (Yamagata)		

*Lower affinity: Viruses are characterized both by antigenic and genetic features. Antigenic matching refers to immunogenicity and similarity to the antibodies needed for virus neutralization which assigns the most closely related subtype. Genetic matching refers to similarities evident through whole genome sequencing and provides phylogenetic clade information. Although most influenza viruses circulating in Alaska antigenically match the current vaccine strain candidates, influenza A/H3 viruses from the 3C.3a clade and influenza B/Victoria from the V1A-3del clade have been shown to react poorly with antibodies produced by the vaccine in laboratory experiments. Nationally, the majority (73%) of influenza A/H3 viruses belong to this 3C.3a clade and 30% of influenza B/Victoria viruses belong to the V1A-3del clade. For more information, visit the weekly U.S. influenza surveillance report at https://www.cdc.gov/flu/weekly/weeklyarchives2018-2019/Week19.htm.



For recent specimens collected in week #24 (June 9 - 15, 2019): 0 of 0 respiratory specimens were positive for influenza (0.0% positive). Additional specimens from this collection date range are pending due to transit delays or further subtyping, thus percent positivity will adjust as specimen results become available.

2. Hepatitis C virus (HCV)

For recommendations on types of Hepatitis C testing, test interpretation and post-test patient counseling:

- CDC MMWR: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6104a1.htm
- 5/27/15 AK Epidemiology Bulletin: http://www.epi.alaska.gov/bulletins/docs/b2015_11.pdf

HCV Antibody screening	Total Tested	Total Positive (%)
Week #2019-24	241	57 (23.7%)
Last 12 month period	5,514	802 (14.5%)
HCV RNA testing		
Week #2019-24	0	0 (0.0%)
Last 12 month period	880	582 (66.1%)

HCV Genotyping	Total Tested	Type 1a	Type 1b	Type 2a/c	Type 2b	Type 3	Type 4	Type 6	Unable to Genotype
Week #2019-24	0								
Last 12 month period*	582	376 (64.6%)	19 (3.3%)	2 (0.3%)	61 (10.5%)	111 (19.1%)	0 (0.0%)	0 (0.0%)	13 (2.2%)

*HCV genotyping data includes 1 coinfection (1 specimen with subtypes 1a & 3)

3. Human Immunodeficiency virus (HIV)

HIV Antibody screening (4th Generation)	Total Tested	Total Confirmed Positive
Week #2019-24	189	0 (0.0%)
Last 12 month period	7,998	16 (0.20%)

4. Norovirus Outbreaks

- No new outbreaks to report.

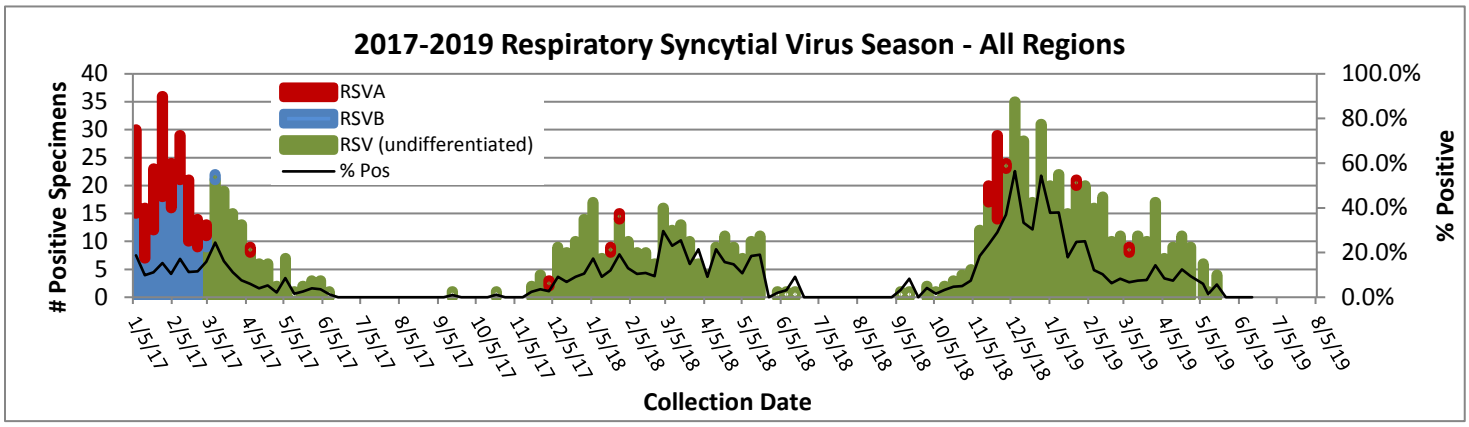
5. Rabies virus - Human Exposures

- A musk ox from the northern region has tested **negative** for rabies.
- A cat from the Anchorage/Mat-Su region has tested **negative** for rabies.

6. Respiratory Syncytial Virus (RSV)

*Surveillance of RSV using a PCR assay that does not differentiate groups A from B began 2/27/2017. Seasons are calculated from October 1 – September 30.

PCR testing	Total Tested	Total Positives (% pos)	Total Positive RSV A (% of pos)	Total Positive RSV B (% of pos)	Total Positive (RSV undifferentiated)* (% of pos)
Week #2019-24	81	4 (4.9%)	0 (0.0%)	0 (0.0%)	4 (100.0%)
Season 2018-2019 (current)	2,984	458 (15.3%)	21 (4.6%)	0 (0.0%)	437 (95.4%)
Season 2017-2018	2,952	256 (8.7%)	3 (1.2%)	0 (0.0%)	253 (98.8%)
Season 2016-2017	5,550	383 (6.9%)	108 (28.2%)	158 (41.3%)	117 (30.5%)
Season 2015-2016	4,987	388 (7.8%)	145 (37.4%)	243 (62.6%)	0 (0.0%)



For recent specimens collected in week #24 (June 9 - 15, 2019): 0 of 0 respiratory specimens were positive for RSV (0.0% positive). Additional specimens from this collection date range are pending due to transit delays, thus percent positivity will adjust as specimen results become available.

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7. Respiratory Pathogen Panel Summary – by Region

Numbers reflect the total positives detected within a particular time period. Current respiratory season is 10/1/2018 – 9/30/2019. NT = Not tested

	Influenza A/H3	Influenza A/H1pdm09	Influenza A (subtype pending)	Influenza B (Yamagata)	Influenza B (Victoria)	Influenza B (genotype pending)	RSV A	RSV B	RSV (undifferentiated)	Rhino/Enterovirus	Metapneumovirus	Parainfluenza 1	Parainfluenza 2	Parainfluenza 3	Parainfluenza 4	Adenovirus	Coronavirus 229E	Coronavirus NL63	Coronavirus HKU1	Coronavirus OC43	Human Bocavirus	*Chlamydophila pneumoniae*	*Mycoplasma pneumoniae*	**Total Specimens Tested**
All Regions																								
Week #2019-24	4		4		8	5			4															**75**
Season 2018-19 (current)	673	688		1	52		21	0	437	11	0	0	1	0	3	0	2	0	0	2	0	0	2	**4,701**
Season 2017-18	647	179		322	60		2	0	245	23	5	1	0	1	1	1	2	3	0	0	3	1	0	**4,442**
Season 2016-17	946	22		262	15		109	158	125	197	77	9	32	136	31	140	79	3	0	175	1	1	0	**5,864**
Season 2015-16	94	622		226	0		146	254	0	706	183	97	2	70	43	272	25	86	82	115	NT	NT	NT	**5,036**
Anchorage/MatSu Region																								
Week #2019-24	1		1		1																			**32**
Season 2018-19 (current)	252	246		1	8		1	0	77	8	0	0	1	0	1	2	0	0	0	2	0	0	2	**1,618**
Season 2017-18	246	82		82	34		1	0	62	9	1	1	0	0	0	2	0	2	0	0	1	0	0	**1,702**

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Season 2016-17	317	1		49	2		53	24	35	70	52	0	11	37	14	21	32	1	0	64	1	1	0	**2,178**
Season 2015-16	33	203		87	0		25	107	0	253	37	30	0	29	16	102	12	30	22	40	NT	NT	NT	**1,903**
Gulf Coast Region																								
Week #2019-24			1						2															**10**
Season 2018-19 (current)	53	107		0	6		0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**604**
Season 2017-18	49	28		79	4		0	0	48	3	0	0	0	0	0	0	2	0	0	0	0	0	0	**810**
Season 2016-17	109	2		43	1		12	16	18	9	1	7	5	19	7	2	14	0	0	19	0	0	0	**853**
Season 2015-16	7	54		10	0		4	11	0	47	15	9	0	3	2	9	2	9	1	9	NT	NT	NT	**480**
Interior Region																								
Week #2019-24					2																			**7**
Season 2018-19 (current)	228	121		0	33		19	0	141	2	0	0	0	0	2	1	2	0	0	0	0	0	0	**1,128**
Season 2017-18	189	27		112	16		0	0	58	9	4	0	0	1	1	0	0	1	0	0	2	0	0	**933**
Season 2016-17	269	1		44	4		19	65	43	51	19	0	8	44	2	36	16	2	0	42	0	0	0	**1,298**

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Season 2015-16	14	164		72	0		101	62	0	210	75	34	1	19	8	96	6	28	37	31	NT	NT	NT	**1,396**
Northern Region																								
Week #2019-24																								**0**
Season 2018-19 (current)	49	20		0	0		0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**164**
Season 2017-18	19	0		3	1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**35**
Season 2016-17	4	17		4	0		4	1	4	0	0	0	0	0	0	2	0	0	0	1	0	0	0	**32**
Season 2015-16	1	35		1	0		0	11	0	2	3	1	0	0	1	3	1	0	0	1	NT	NT	NT	**59**
Southeast Region																								
Week #2019-24	3		2						2															**10**
Season 2018-19 (current)	67	133		0	0		0	0	88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**810**
Season 2017-18	120	11		15	1		0	0	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**648**
Season 2016-17	195	1		114	8		18	49	12	37	2	2	5	17	7	69	11	0	0	33	0	0	0	**1,235**
Season 2015-16	37	130		39	0		10	38	0	117	42	18	1	11	7	28	4	8	17	29	NT	NT	NT	**921**

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Southwest Region																								
Week #2019-24					5	5																		**16**
Season 2018-19 (current)	24	61		0	5		1	0	86	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**377**
Season 2017-18	24	31		31	4		1	0	39	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**314**
Season 2016-17	52	0		8	0		3	3	13	15	3	0	3	19	1	6	6	0	0	16	0	0	0	**268**
Season 2015-16	2	36		17	0		6	25	0	77	11	5	0	8	9	34	0	11	5	5	NT	NT	NT	**277**