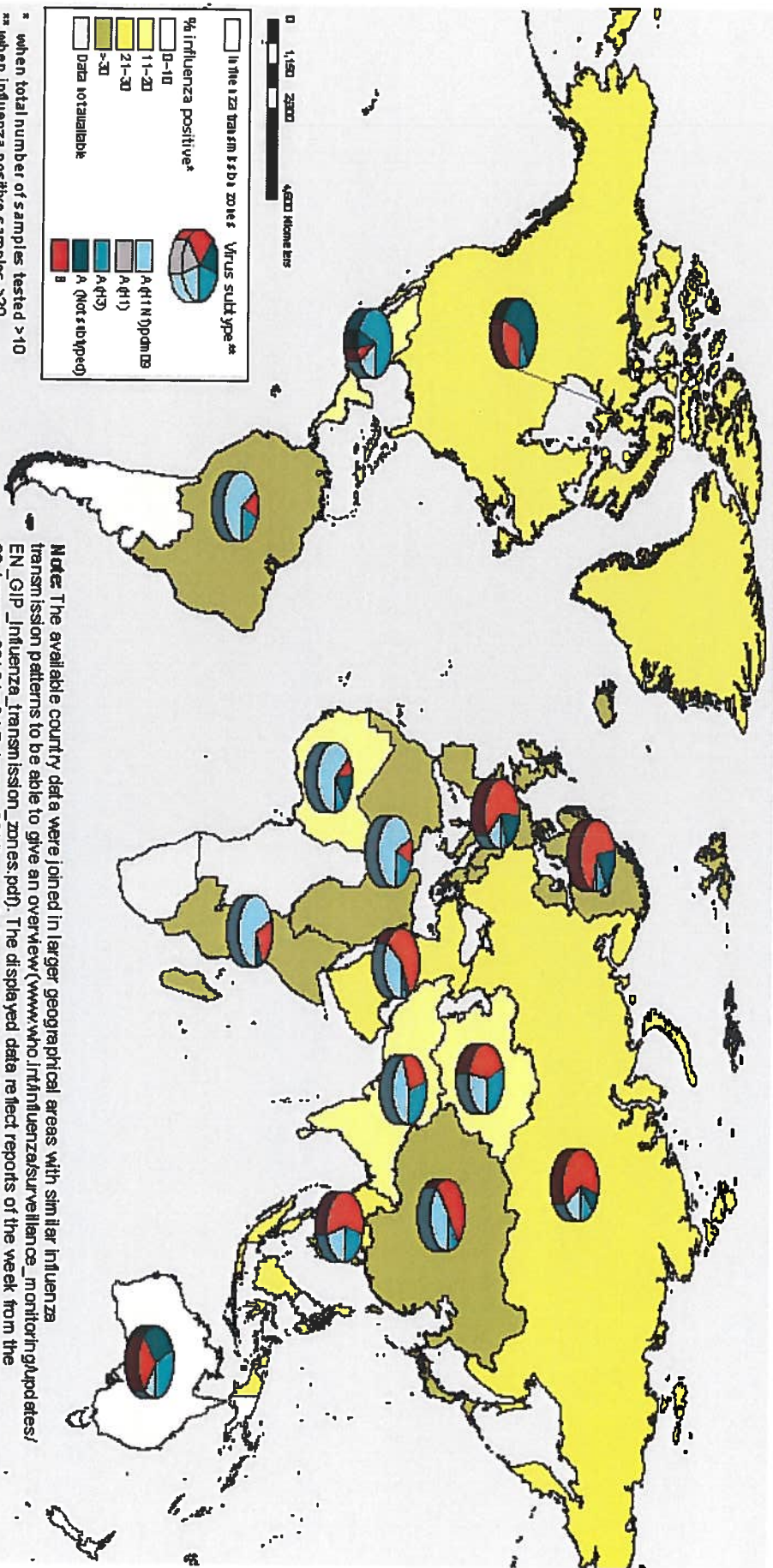


#4

Percentage of respiratory specimens that tested positive for influenza By influenza transmission zone

Status as of 16 February 2018

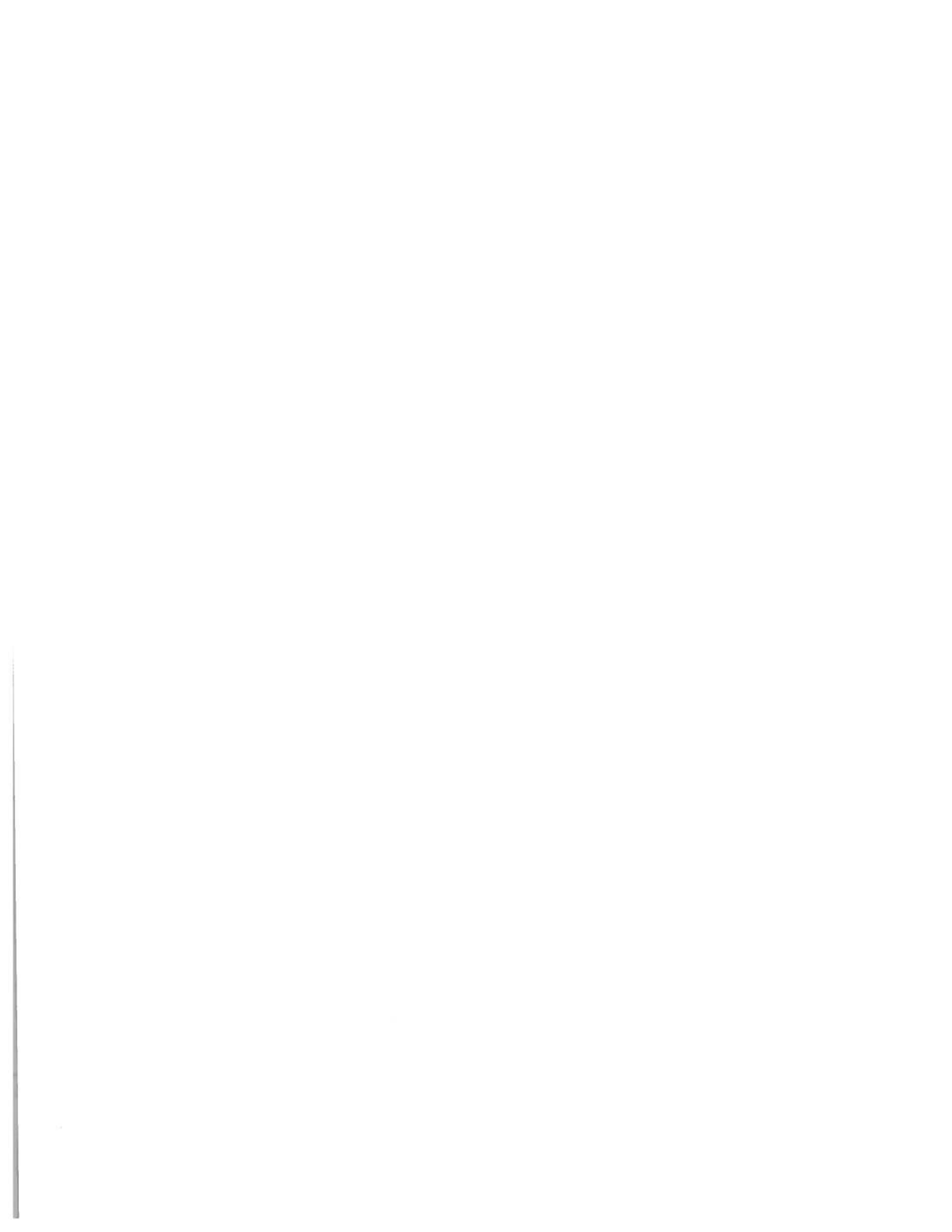


Note: The available country data were joined in larger geographical areas with similar influenza transmission patterns to be able to give an overview (www.who.int/influenza/surveillance_monitoring/updates/EN_GIP_influenza_transmission_zones.pdf). The displayed data reflect reports of the week from the 22 January 2018 to 04 February 2018, or up to two weeks before if not sufficient data were available for that area.

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: Global Influenza Surveillance and Response System (GISRS), FluNet (www.who.int/flu-net/)

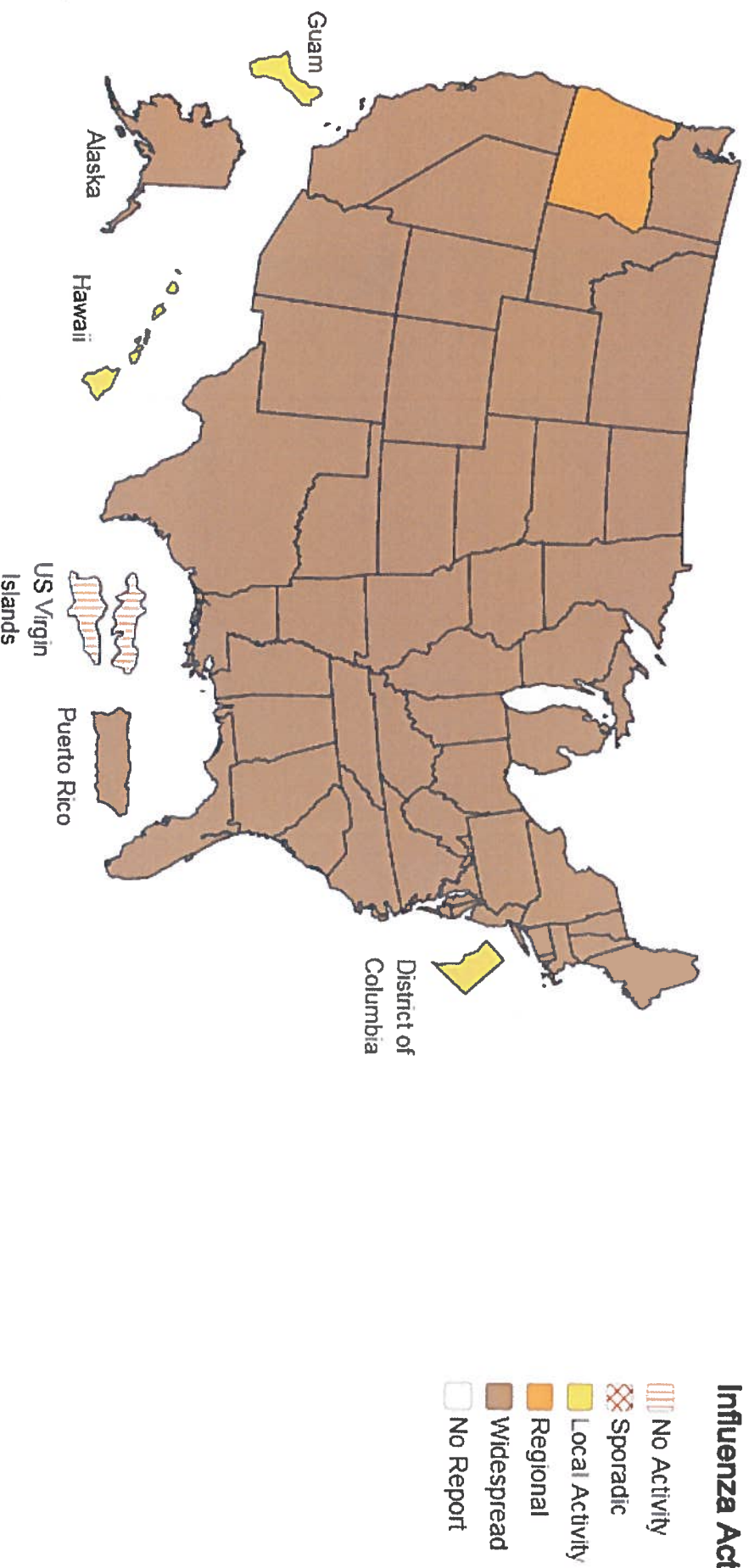




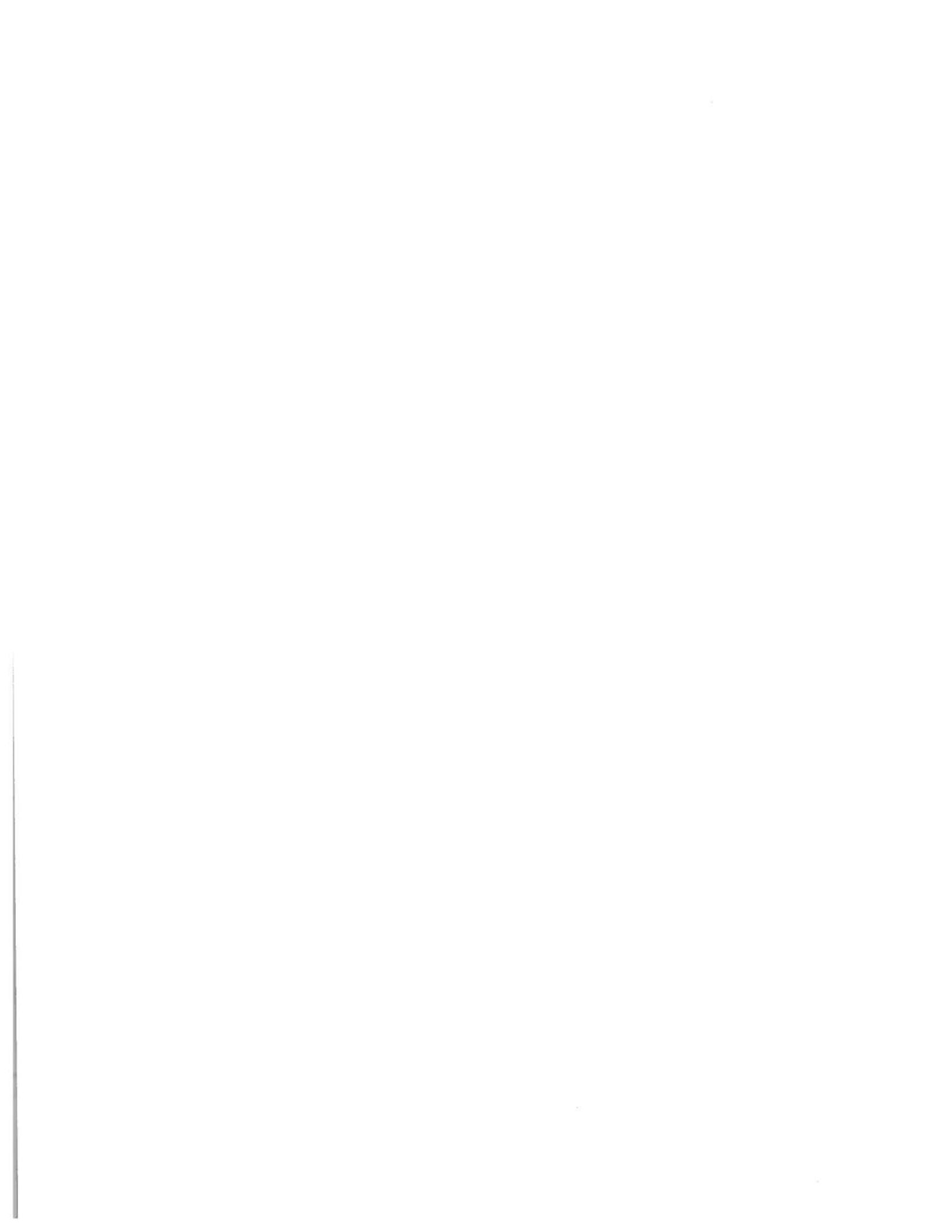
A Weekly Influenza Surveillance Report Prepared by the Influenza Division

Weekly Influenza Activity Estimates Reported by State and Territorial Epidemiologists*

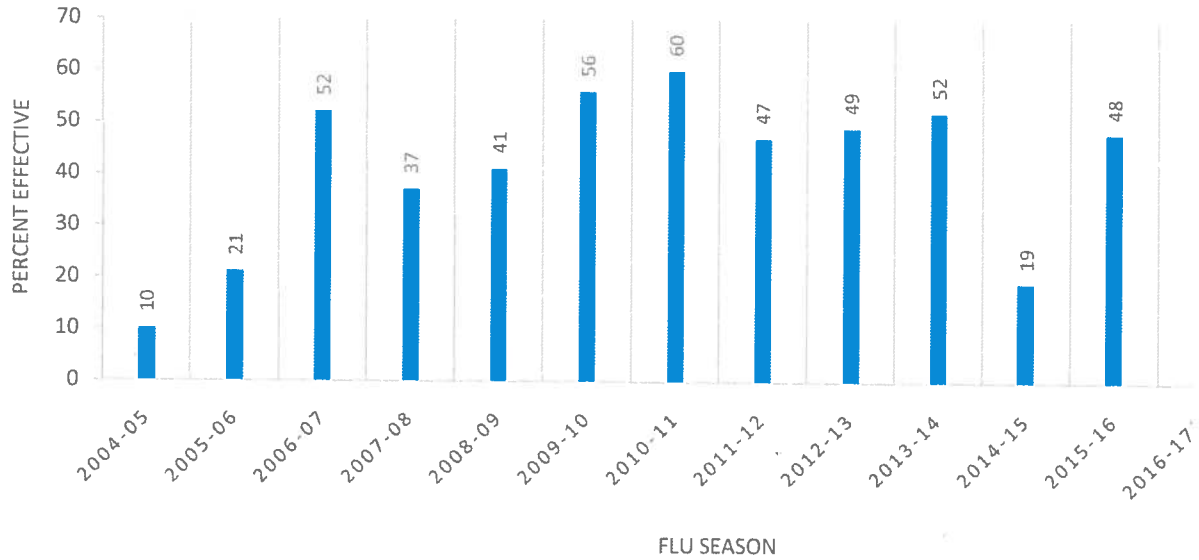
Week Ending Feb 10, 2018 - Week 6



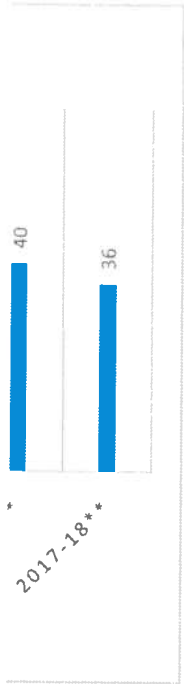
*This map indicates geographic spread and does not measure the severity of influenza activity.



SEASONAL FLU VACCINE EFFECTIVENESS

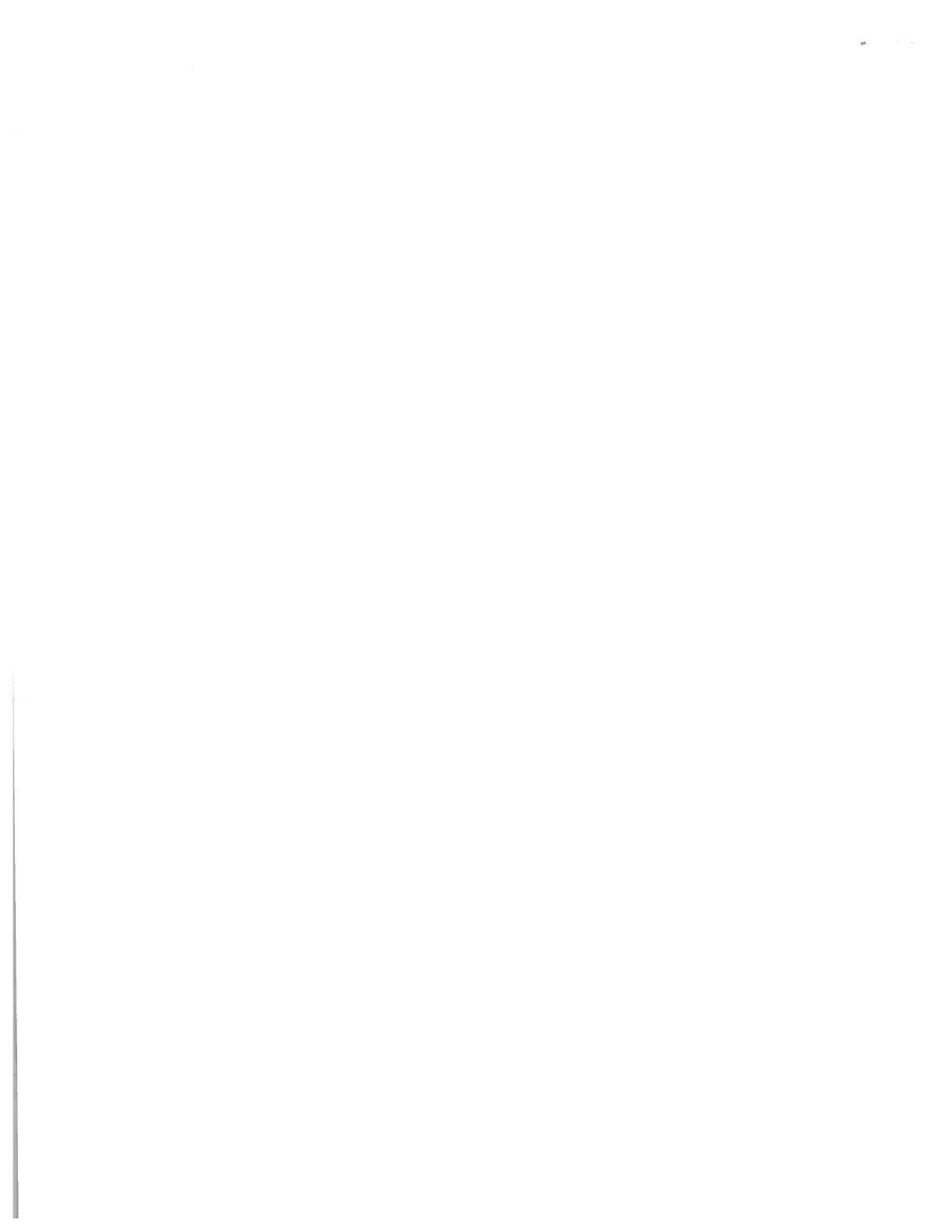


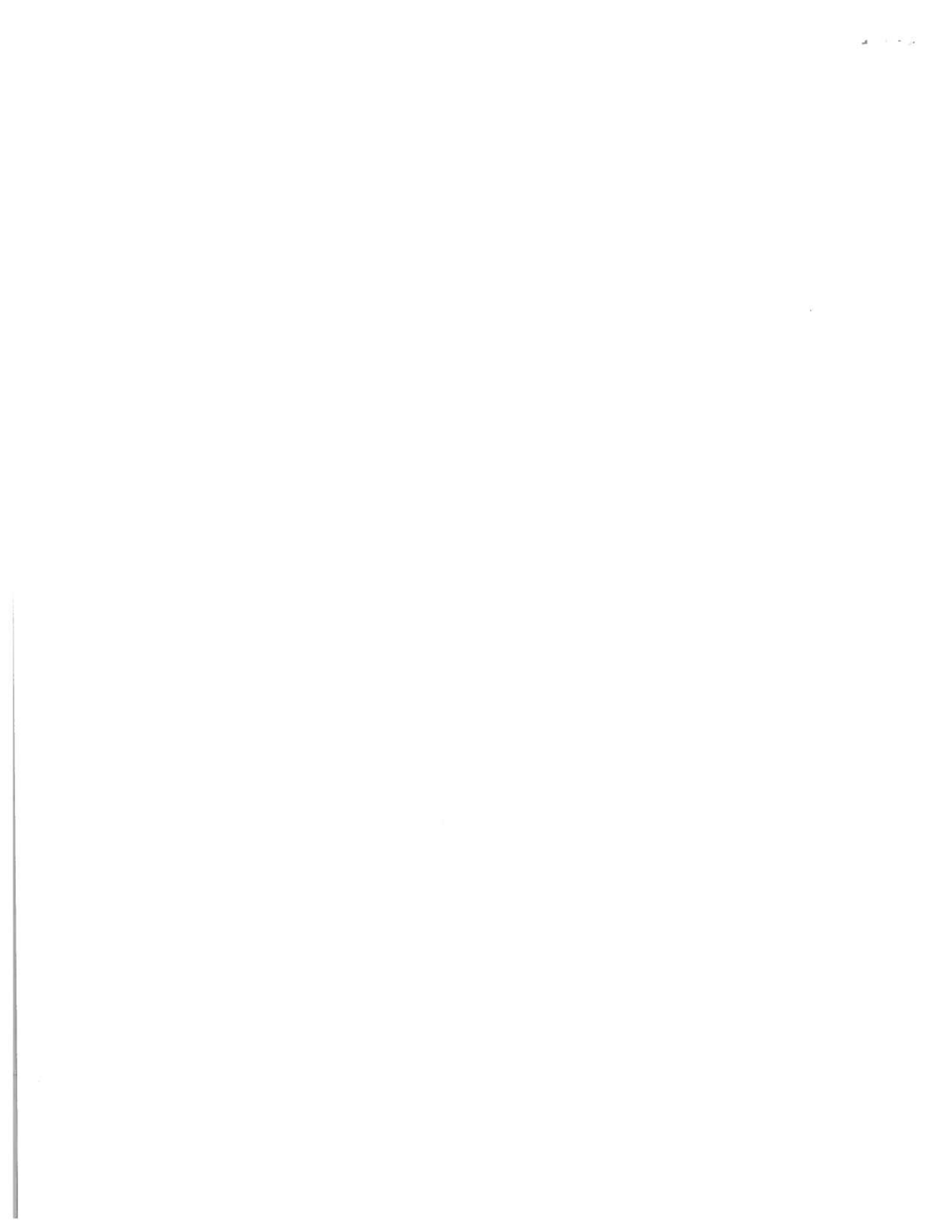
Flu Season	Adj. Overall VE (%)
2004-05	10
2005-06	21
2006-07	52
2007-08	37
2008-09	41
2009-10	56
2010-11	60
2011-12	47
2012-13	49
2013-14	52
2014-15	19
2015-16	48
2016-17*	40
2017-18**	36



*Interim 2016-2017 VE Estimates (4/20/2016-4/9/2017) were presented to ACIP in June 201

*Interim early estimates may differ from final end-of-season estimates







MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH
WEEKLY INFLUENZA UPDATE
February 16, 2018

All data in this report are preliminary and subject to change as more information is received.

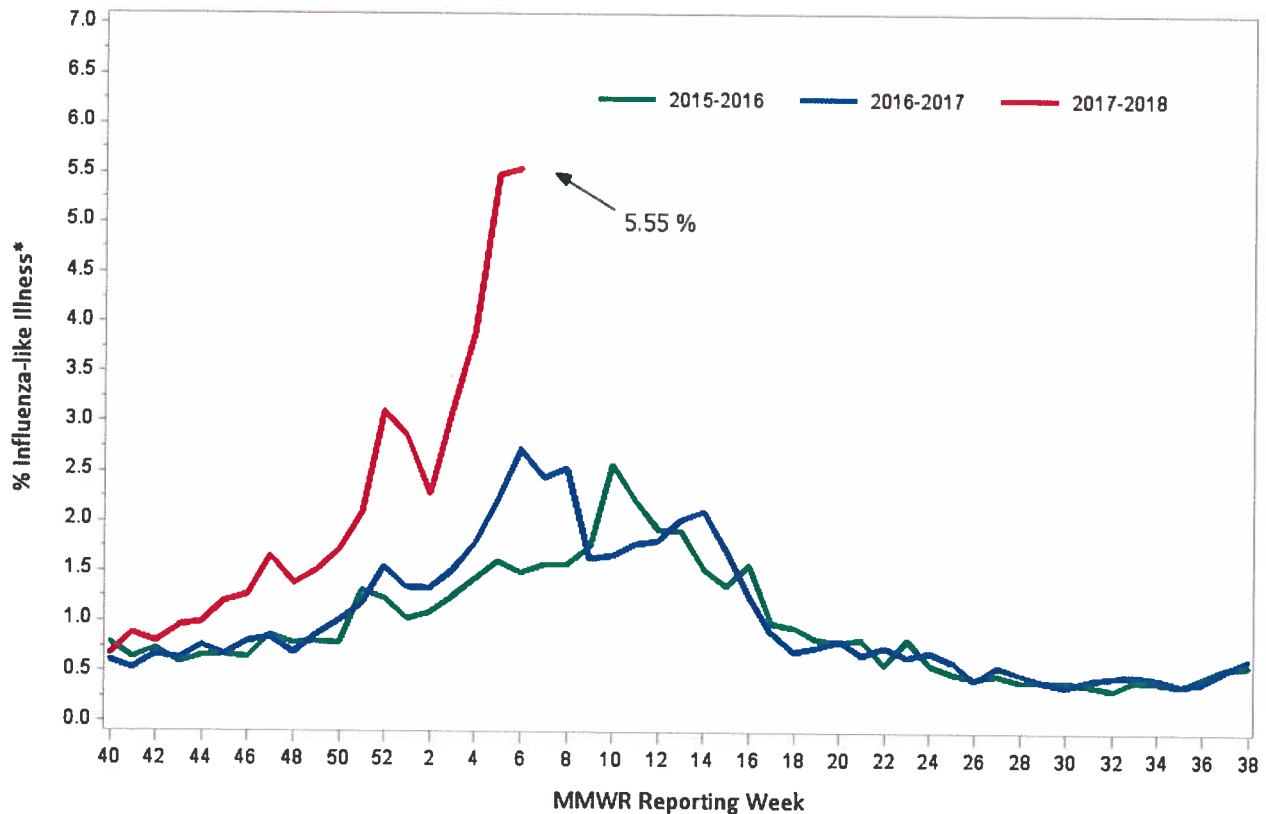
Sentinel Provider Surveillance: Influenza-like illness activity

Week 6 Activity¹ (representing geographic distribution): Widespread

Week 6 ILI Activity² (representing intensity of ILI activity): 10 (High)

Provider offices across the US report the amount of influenza-like illness (ILI) they see in their patients each week during regular flu season. These outpatient providers' offices, which include doctors' offices, school health services, and community health centers, are called 'sentinel sites.' Here we present Massachusetts sentinel site data. Please note that the data represent not only confirmed influenza cases, but also those just with ILI, which may be caused by other viruses. ILI is defined as fever above 100.0¹ in addition to either cough or sore throat. ILI is a marker of influenza and is used throughout the regular influenza season to monitor influenza since most people are not tested for influenza. Figure 1 shows that influenza-like illness activity remains elevated, consistent with activity in other parts of the United States. For more information, see CDC's influenza surveillance website at www.cdc.gov/flu/weekly/fluactivitysurv.htm.

Figure 1: Percentage of ILI visits reported by sentinel provider sites



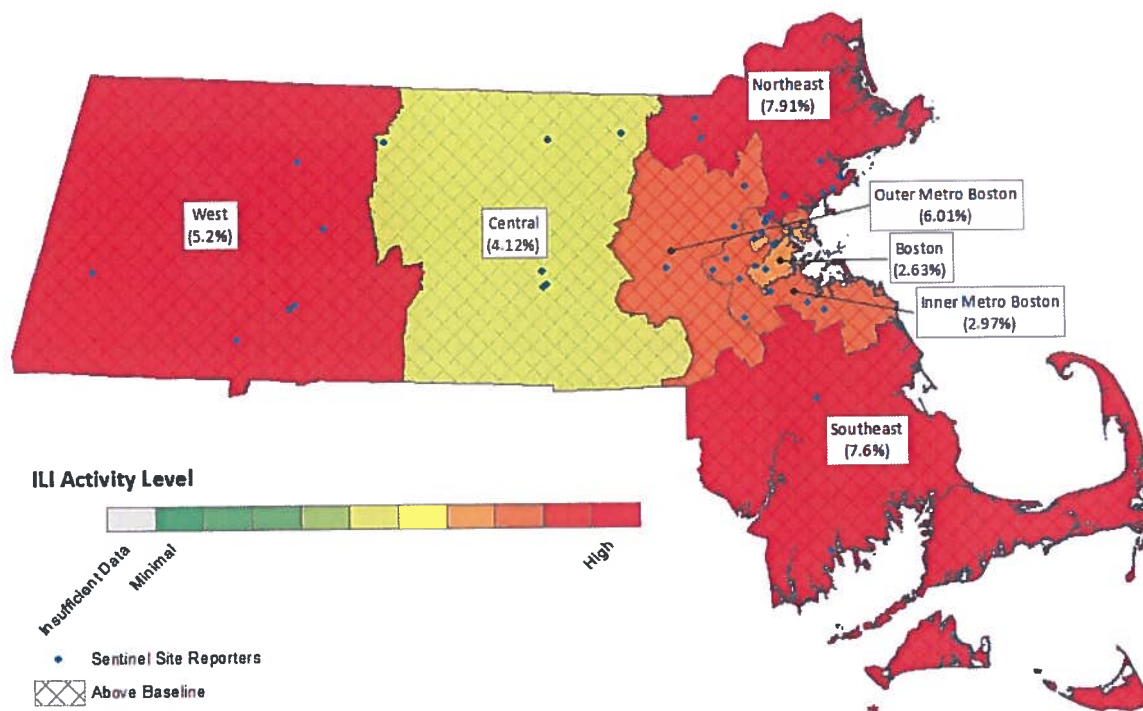
*Influenza-like illness (ILI, defined by fever >100F and cough and/or sore throat), as reported by Massachusetts sentinel surveillance sites

¹ CDC activity indicator – indicates how widespread influenza activity level is in the state.

² CDC ILI activity indicator – more quantitative indicator of the level of ILI activity across the state.

Figure 2 shows the intensity of reported ILI activity in Massachusetts by region. The activity level for each region (and associated color) is in relation to a baseline ILI activity level for that region. Differences in activity may reflect variation in the size and type of patient population served by reporting providers in that region. Figure 2 shows that all regions of the state are reporting increased ILI activity.

Figure 2: Percent ILI Activity Level Reported Weekly by Massachusetts Sentinel Sites



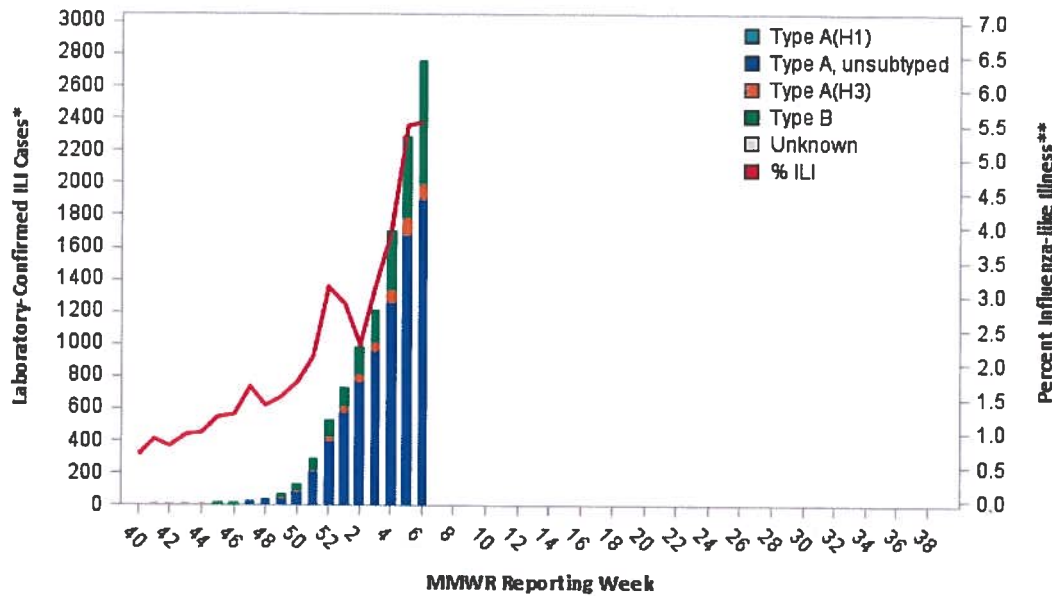
Laboratory testing for influenza

Laboratories in Massachusetts report all positive influenza laboratory tests to MDPH, including viral culture, polymerase chain reaction (PCR) and rapid influenza diagnostic tests. Because the majority of cases are not tested, the number of 'confirmed' cases does not reflect the overall incidence of influenza; however, this information is essential to track the types of influenza circulating in Massachusetts and can be a useful indicator of the presence and distribution of influenza in the state. Table 1 reflects the number of influenza cases confirmed via viral culture or PCR test by region and influenza type. Figure 3 illustrates the number of laboratory confirmed cases in Massachusetts by week, shown along with Massachusetts ILI.

Table 1: Laboratory-confirmed Influenza by Region – 2017-2018 and 2016-2017 Influenza Seasons

Region	2017-2018						2016-2017					
	A		B		Untyped		A		B		Untyped	
	Week	YTD	Week	YTD	Week	YTD	Week	YTD	Week	YTD	Week	YTD
Boston	295	1,134	74	252	0	0	179	563	12	45	0	0
Central	87	380	33	123	0	0	45	157	4	9	0	0
Inner Metro Boston	204	986	72	209	0	0	66	293	6	11	0	0
Northeast	491	1,928	314	868	0	0	105	406	10	60	0	0
Outer Metro Boston	95	393	33	139	0	0	45	183	7	21	0	0
Southeast	106	542	21	87	0	0	32	106	3	5	0	0
Unknown	26	76	6	22	0	0	14	64	1	2	0	0
West	691	3,069	214	721	0	0	349	1,368	11	36	0	0
Total	1,995	8,508	767	2,421	0	0	835	3,140	54	189	0	0

**Figure 3: Laboratory-confirmed Influenza Cases and Influenza-like Illness
Massachusetts, October 1, 2017 – February 10, 2018**



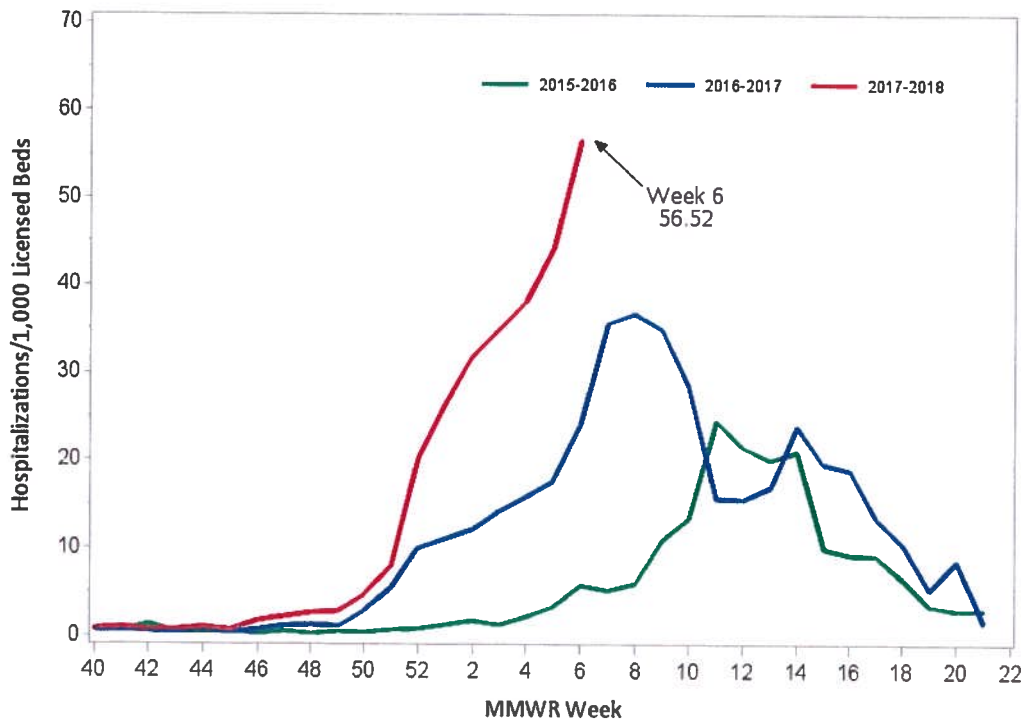
*Influenza cases confirmed via viral culture or PCR test by specimen collection date.

**Influenza-like illness (ILI, defined as fever >100F and cough and/or sore throat), as reported by Massachusetts sentinel surveillance sites by CDC week date.

Influenza-Associated Hospitalizations

In 2010, MDPH began to request voluntary reporting of all laboratory-confirmed influenza hospitalizations from hospitals in Massachusetts. As many as 50 acute care hospitals from across the state report these data to MDPH on a weekly basis during flu season. The graph below shows the number of laboratory-confirmed hospitalizations per 1,000 licensed beds represented by reporting hospitals for the current season and two previous seasons.

Figure 4: Massachusetts laboratory-confirmed influenza hospitalizations



Testing at the State Public Health Laboratory

As part of a more comprehensive respiratory surveillance initiative, MDPH's Bureau of Infectious Disease and Laboratory Sciences (MDPH-BIDLS) performs testing to confirm typing and subtyping of circulating influenza viruses followed by testing of influenza-negative samples for the evidence of adenovirus, respiratory syncytial virus (RSV) A/B, parainfluenza virus (PIV) types 1-4, coronavirus (HCoV) HKU1, OC43, NL63, 229E, human metapneumovirus (HMPV), and rhinovirus/enterovirus (RHV/ENT) using a multiplex PCR respiratory viral panel. Samples are submitted by ~60 outpatient healthcare providers (ILINet) and include early influenza positives, as well as specimens and isolates from clinical hospital diagnostic laboratories across Massachusetts. For the 2017-2018 season, Figure 5 and Tables 2 and 3 summarize virologic surveillance testing conducted by MDPH-BIDLS beginning MMWR week 40 (week ending October 7, 2017). MDPH-BIDLS performs influenza surveillance testing year round. For the 2017-2018 season to date, 114 cases of A/H3N2 influenza, 16 cases of A/2009 H1N1, 41 cases of B/Yamagata, and 5 cases of B/Victoria have been confirmed in 347 cases tested.

Figure 5: Influenza positive tests reported to CDC by MDPH-BIDLS, October 1, 2017 – February 10, 2018

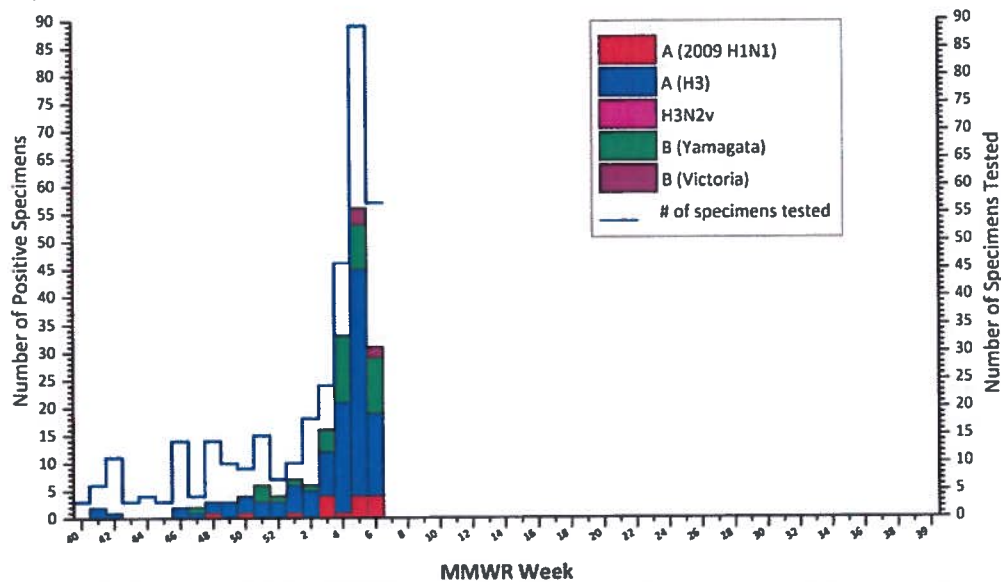


Table 2: Weekly Summary of MDPH-BIDLS Influenza Surveillance Test Results

2017-2018 Season: Influenza Surveillance									
MA Department of Public Health's Bureau of Infectious Disease and Laboratory Sciences (MDPH-BIDLS)									
MMWR Week: (Specimen Collected)	2009 H1N1	seasonal A/H3N2	H3N2v	B Yam	B Vic	No. Flu Pos (%)	Unsat	Total Tested	Total Rec'd
03 (01/14 - 01/20/2018)	4	8	0	4	0	16(67%)	4	24	28
04 (01/21 - 01/27/2018)	1	20	0	12	0	33(72%)	3	46	49
05 (01/28 - 02/03/2018)	4	41	0	8	3	56(63%)	2	89	91
06 (02/04 - 02/10/2018)	4	15	0	10	2	31(54%)	2	57	59
Prior 4 wk Total	13	84	0	34	5	136(63%)	11	216	227
Cumulative Season total	16	114	0	41	5	176(51%)	27	347	374

All data are subject to change as test results become finalized. The 2017 -2018 influenza season began MMWR 40 (10/01- 10/07/2017).

Table 3: Weekly Summary of MDPH-BIDLS non-Influenza Respiratory Surveillance Test Results

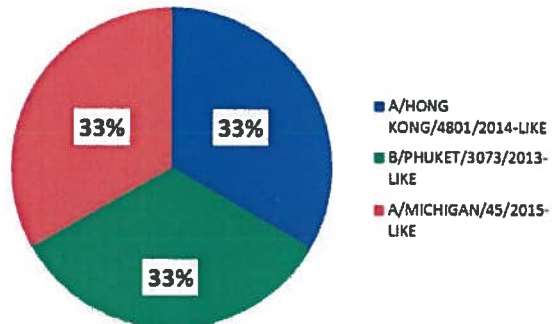
2017-2018 Season: Influenza Like Illness Surveillance											
MA Department of Public Health's Bureau of Infectious Disease and Laboratory Sciences (MDPH-BIDLS)											
MMWR Week: (Specimen Collected)	RSV	RHV/ ENT	PIV	HMPV	HCV	ADV	# Co- Infection	No. Pos (%)	Unsat	Total Tested	Total Rec'd
03 (01/14 – 01/20/2018)	0	0	0	0	2	0	0	2(29%)	0	7	7
04 (01/21 – 01/27/2018)	1	0	0	1	1	0	0	3(25%)	0	12	12
05 (01/28 – 02/03/2018)	2	3	0	0	5	1	1	10(36%)	0	28	28
06 (02/04 – 02/10/2018)	6	1	0	0	5	0	2	10(42%)	0	24	24
Prior 4 wk Total	9	4	0	1	13	1	3	25(35%)	0	71	71
Cumulative Season total	21	21	2	2	26	3	6	69(43%)	0	159	159

All data are subject to change as test results become finalized. The 2017 -2018 influenza season began MMWR 40 (10/01- 10/07/2017).

For the 2017-2018 season, two original specimens positive for each influenza virus A(H3N2), influenza virus A(H1N1)pdm09, and influenza virus B (with one sample from each Victoria and Yamagata lineage, if possible) will be sent every two weeks by MDPH-BIDLS to a CDC contract laboratory performing National Influenza Virus Surveillance standardized test methods. Antigenic characterization of these submitted specimens include: hemagglutination inhibition (HI), genetic analysis (sequencing) and sensitivity to FDA-approved drugs for identification of resistance. Selection criteria for submitting influenza positive specimens will be based on a Ct value (<30) for Inf A and Inf B tests using the CDC Flu rRT-PCR Dx Panel. See Figure 6 for a summary of specimens characterized in the 2017-2018 season to date.

Figure 6: Summary of 2017-2018 CDC Contract Laboratory Specimen Characterization

INFLUENZA VIRUS TYPE	CHARACTERIZED TOTAL
A/HONG KONG/4801/2014-LIKE	1
B/PHUKET/3073/2013-LIKE	1
A/MICHIGAN/45/2015-LIKE	1



The CDC Flu rRT-PCT Dx Panel for Influenza A subtyping was updated prior to the start of the 2016-2017 season. The oligonucleotide primers and probe were improved to ensure detection of currently circulating influenza A(H1N1)pdm09 viruses. The “seasonal” H1 target from Influenza A(H1N1) viruses that caused seasonal epidemics in humans prior to 2009 no longer circulates in humans and this target within the assay was discontinued.

As samples are received, MDPH-BIDLS will screen additional samples every two weeks to detect point mutations within the neuraminidase gene of influenza A/H3N2 viruses (E119, R292, and N294) and influenza A/2009 H1N1 viruses (H275 and I223) to assess resistance trends using the current CDC pyrosequencing method. This information will be reported locally and captured nationally in FluView (<http://www.cdc.gov/flu/weekly/>). For the 2015-2016 season, one A/2009 H1N1 isolate with a mutation conferring oseltamivir-resistance (H275H/Y) was detected. No mutations were detected in the 2016-2017 season.

Table 4: DPH-BIDLS Influenza Antiviral Resistance Screening: 2017-2018 Season

Virus Collection Period: October 1, 2017- ongoing				
	Oseltamivir		Zanamivir	
	Samples Tested	Resistant Viruses, Number (%)	Samples Tested	Resistant Viruses, Number (%)
Influenza A (H3N2)^I	56	1 (2%)	56	0 (0)
Influenza A (H1N1)pdm09^{II}	7	0 (0)	0	0 (0)

^I Samples tested by pyrosequencing at position E119, R292, and N294 within the neuraminidase (NA) gene.

^{II} Samples tested by pyrosequencing at position H275 and I223 within the NA gene.

Additional information on national antiviral resistance testing including recommendations for antiviral treatment and chemoprophylaxis of influenza virus infection can be found at <http://www.cdc.gov/flu/weekly/>.



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Director

Massachusetts confirms first death of child from flu-related illness

Updated Feb 13; Posted Feb 13

By **Gintautas Dumcius** gdumcius@masslive.com

A child under the age of 10 died from a flu-related illness, the Massachusetts Department of Public Health announced Tuesday evening. The child lived in Essex County, which is in the northeastern part of the Bay State.

The child's death is the first confirmed flu-related pediatric loss of life this flu season, according to the agency.

"This is a tragic reminder of how serious the flu can be for some people," Monica Bharel, the state's public health commissioner, said in a statement. "Every flu season is different, but every flu season is bad. This one arrived early and continues to spread, leading many people throughout the Commonwealth to get sick."

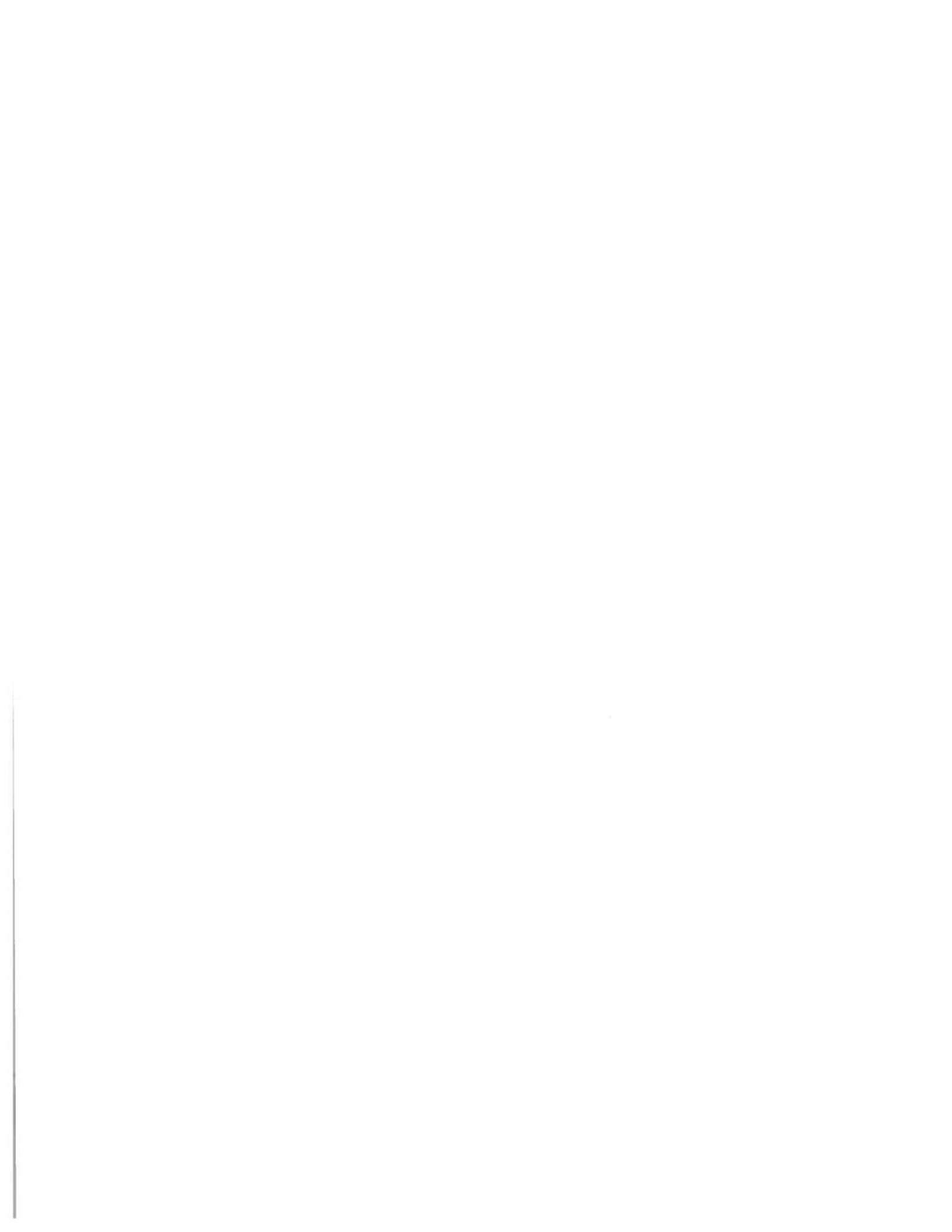
The agency did not offer additional details on the child. [WBZ reported](#) that an official from Haverhill confirmed to them that a 6-year-old girl died after getting diagnosed with influenza.

The Department of Public Health said as of Feb. 3, there have been 63 influenza-related pediatric deaths across the country during this flu season.

There were two child deaths from flu-related illnesses in Massachusetts during the last flu season, according to DPH.

Somewhere between 250 and 1,100 Massachusetts residents die on an annual basis from complications of influenza.

*The Town of Greenfield is an Affirmative Action/Equal Opportunity Employer,
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News > Local (/News/Local/)

CDH announces restrictions as flu cases spread

By CAITLIN ASHWORTH

@kate_ashworth

Tuesday, January 30, 2018

NORTHAMPTON — In the midst of the widespread flu season, several patients at Cooley Dickinson Hospital who tested positive for the flu have died — although many had other health conditions, according to the hospital.

“Because deaths related to influenza are almost always due to other complications, we are unable to confirm the cause of death as flu,” spokeswoman Christina Trinchero said Monday.

Trinchero said Cooley Dickinson, like all hospitals in the state, is testing more people with the flu and admitting more patients confirmed to have the flu than at the same time last year.

Last week, there were 94 positive tests out of a total of 270 flu tests administered during the current flu season, she said.

The 2016-17 flu season had a total of 506 laboratory-confirmed cases of flu in western Massachusetts, and so far, in the 2017-18 season, there have been 1,522 laboratory-confirmed cases in the region, according to data collected by the Massachusetts Department of Public Health.

The Centers for Disease Control and Prevention announced Friday this is the worst year of the flu in the country since 2009’s pandemic of swine flu.

Cooley Dickinson announced on Thursday that the hospital has put restrictions in place to prevent the spread of the flu.

No children under 14 will be allowed to visit hospitalized patients, people must clean their hands before entering and leaving a patient’s room, and the number of visitors should be limited, the hospital said in an announcement.

RELATED LINKS

Quinn on Nutrition: Filling up on immune boosters
(<http://www.gazettenet.com/immune-boosters-15151980>)

Flu widespread across US for third week
(<http://www.gazettenet.com/Flu-widespread-across-US-for-third-straight-week-15155946>)

Winter flu and Brexit put beloved UK health service on sickbed
(<http://www.gazettenet.com/Winter-flue-Brexit-put-beloved-UK-health-service-on-sickbed-15181556>)

Patients should go to appointments alone, or with their immediate caregiver only, according to the hospital, and patients are also discouraged from bringing children with them to appointments.

"We are taking these temporary precautions to limit the number of visitors," registered nurse Linda Riley said in a statement. "This year is about the severity of the flu, the fact that it is particularly dangerous for the young children and seniors, and the widespread activity of flu across our region."

Baystate Health has announced similar restrictions at its four hospitals, including Baystate Medical Center in Springfield and Baystate Franklin Medical Center in Greenfield.

Trincherro said CDH has not had any pediatric patients admitted with the flu so far this season.

'Not at peak yet'

Pediatricians Jonathan Schwab of Northampton Area Pediatrics and John Snyder of Amherst Pediatrics both said none of their patients has been hospitalized due to the flu.

"So far, we've had some very sick children with the flu," Snyder said. "I have not had to hospitalize patients yet."

Although cases haven't been serious, the pediatric offices have had dozens of patients a week with symptoms of the flu.

Schwab said he's been seeing about one to two patients a day who have flu symptoms, and Snyder said overall, Amherst Pediatrics sees about 10 patients with flu symptoms a day.

"We're not at peak yet," Snyder said, adding that he expects numbers to go up within the next month.

Symptoms of the flu are more severe than the common cold, pediatricians said. Those sick with the flu typically have body aches and a fever.

The Massachusetts Department of Public Health said the virus is spread through droplets of saliva and mucus when someone coughs or sneezes, which can be breathed in by another person who is within 3 to 6 feet. The virus can also live for a short time on things like doorknobs, phones and toys, the department said in a statement.

When it comes to treating the flu, Schwab said most of the time he recommends rest, Tylenol or ibuprofen, and lots of fluids.

When there are respiratory complaints, Snyder said, it's important that children come in to see if they've caught pneumonia.

Children at the highest risk are those under 2, and those with chronic health conditions such as asthma, according to Snyder and Schwab. Those children are often treated with the antiviral medicine Tamiflu, which works best within the first 48 hours, the pediatricians said.

Shot recommended

Both Snyder and Schwab say vaccinations are the best way to protect against the flu. While the vaccine isn't as effective as in the past, the pediatricians said if those who are vaccinated get the flu, it will be less severe.

"There's virtually no downside to getting the vaccine," Snyder said.

In December, the Massachusetts Department of Public Health urged residents to get a flu shot.

"Every flu season is different, but usually cases of influenza reach their peak in January, February, or even March," Public Health Commissioner Monica Bharel said in a statement.

"This year we are seeing a very rapid increase in influenza-like illness across Massachusetts, along with an increase in confirmed flu cases. This suggest that Massachusetts may be having an earlier start. It is important that we all take steps to prevent flu from spreading, including getting a flu shot because it is among the best protections we have."

To prevent the spread of the flu at the office, Snyder and Schwab said patients who have flu symptoms are asked to wear masks while in the waiting room. They also urge people to regularly wash their hands.

Caitlin Ashworth can be reached at cashworth@gazettenet.com.

BAYSTATE FRANKLIN MEDICAL CENTER FLU ACTIVITY

2016-17 Flu Season

Laboratory Confirmed: 185 cases

This represents a 24% increase over last year

Hospital Admissions: 67

This represents a 7% increase over last year

2017-18 Flu Season-In progress

Laboratory Confirmed: 245 cases

Hospital Admissions: 72

Cooley Dickinson Hospital Flu Activity

2017-18 Flu Season-In progress

Tests Performed: 270

Laboratory Confirmed: ~~245~~ cases 94

This represents 35% total laboratory confirmed cases

Sources:

Greenfield Recorder, Thursday, February 15, 2018

<http://www.gazettenet.com/flu-season-in-massachusetts-15194925>, Tuesday, January, 30, 2018



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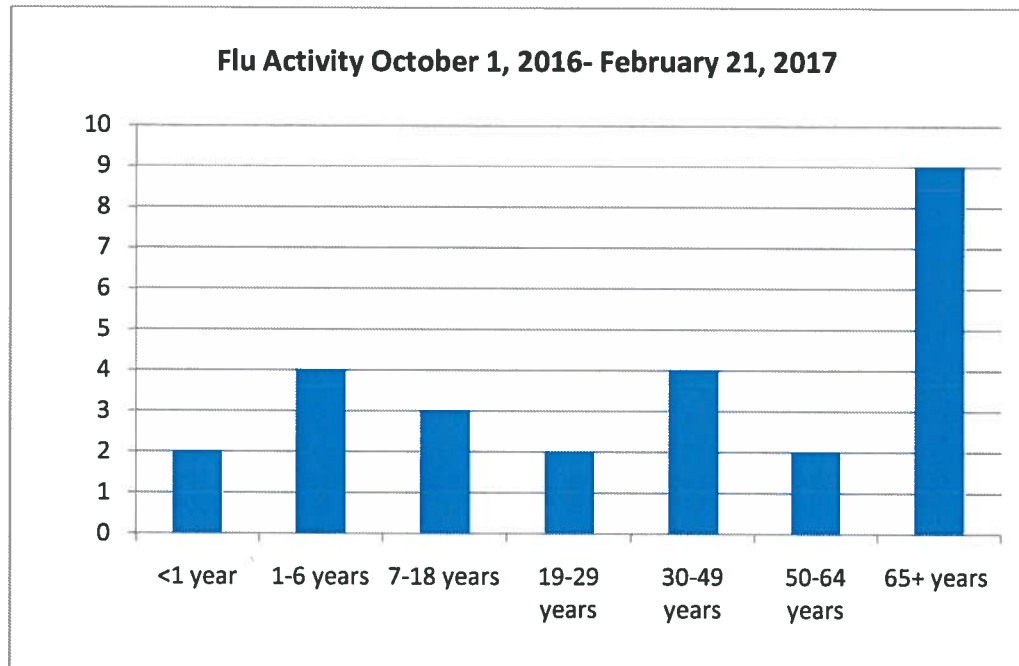
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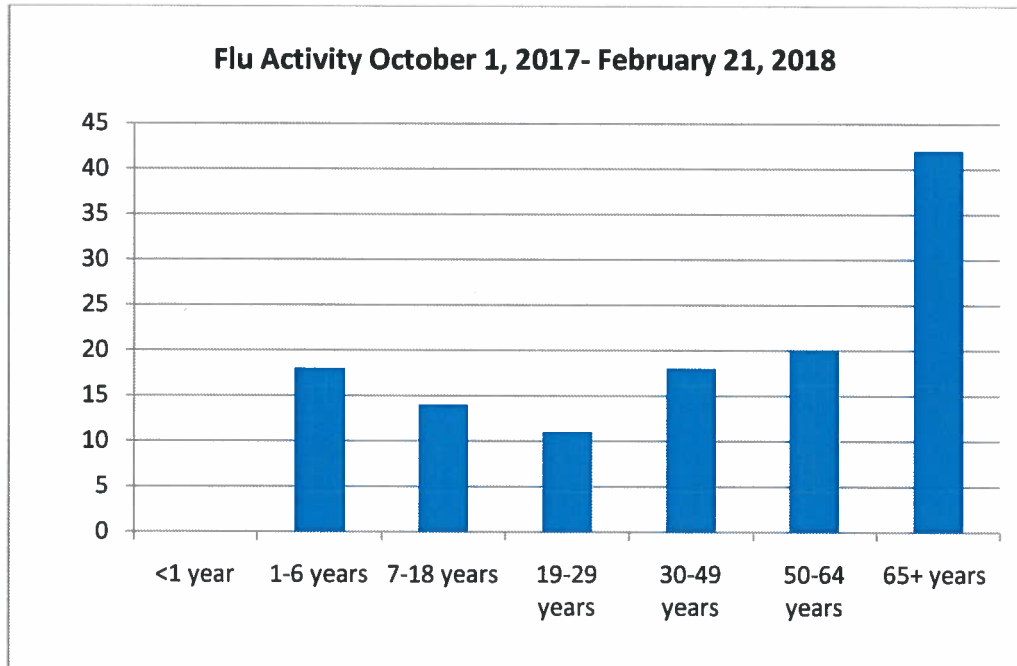
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