2017-2018
Influenza Surveillance Report
Week 08
Feb. 18 – Feb. 24, 2018

About our flu activity reporting

MSDH relies upon selected sentinel health practitioners across the state to report the percentage of total patient visits consistent with an influenza-like illness (ILI: fever of 100°F or higher AND cough and/or sore throat). Also, providers are supplied with specimen collection kits. Samples are submitted to the Mississippi Public Health Laboratory for influenza PCR testing. Reports are used to estimate the state's ILI rate and the magnitude of the state's influenza activity. Reports represent only the distribution of flu in the state, not an actual count of all flu cases statewide. ***Information is provisional only and may change depending on additional reporting from sentinel providers.***

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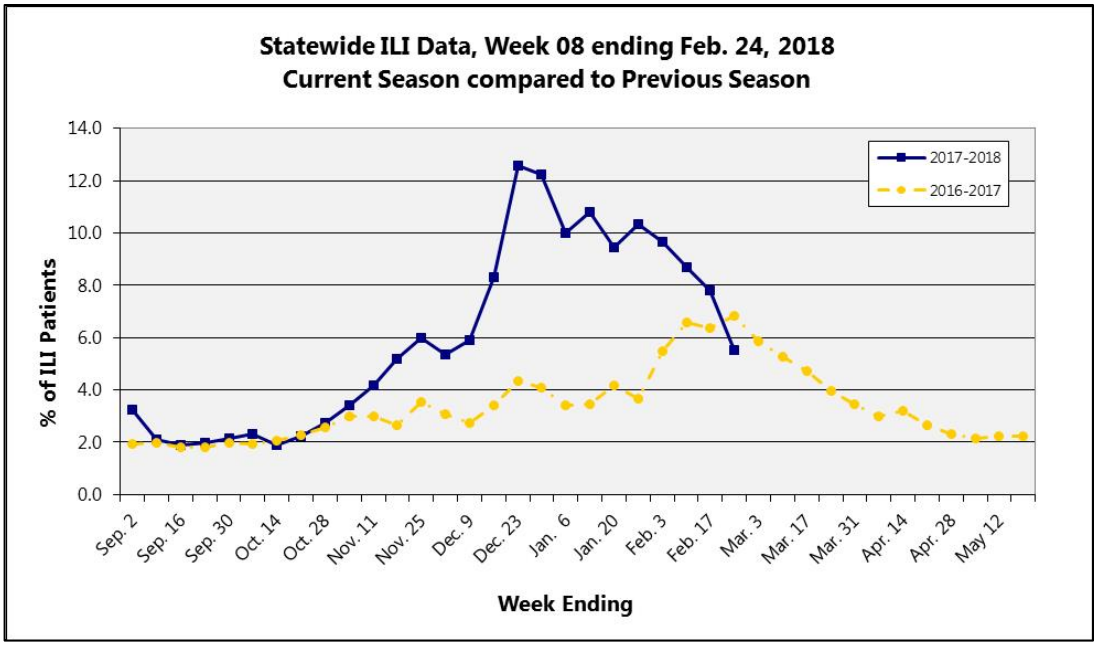
State ILI Surveillance

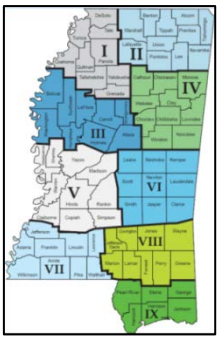


During week **08** (02/18/18-02/24/18), the overall state ILI rate (**5.5%**) **decreased** from the previous week (**7.8%**), and was below this time last year (**6.8%**). Week 08 marks the fourth week in which the state ILI rate continued on a downward trend. | **Figure 1**

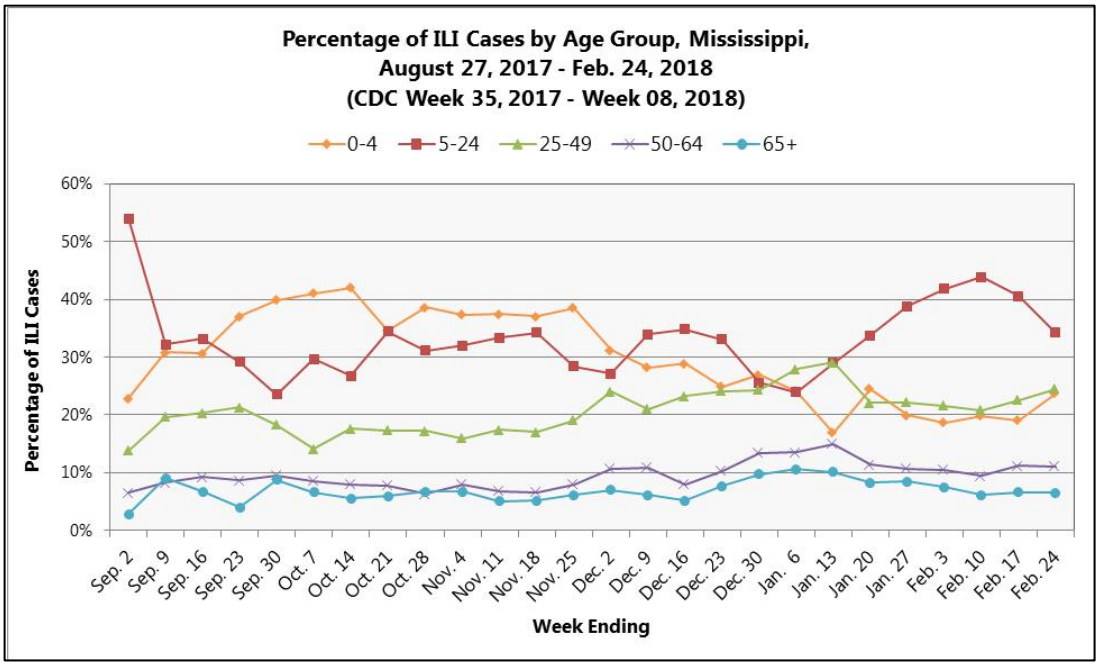
Total number of patients treated by sentinel providers in the last three weeks.| **Table 1**

2017-2018 Influenza Season					
CDC Week	**Week Ending**	**Number of reports received from Sentinel Providers**	**Total patients**	**ILI symptoms**	**ILI Rate (%)**
08	**Feb. 24**	**138**	**18170**	**1003**	**5.5**
07	Feb. 17	140	20157	1572	7.8
06	Feb. 10	136	20959	1821	8.7

During week **08**, **all** districts experienced a decrease in ILI activity. *Information is provisional only and may change depending on additional reporting from sentinel providers.* | **Table 2**

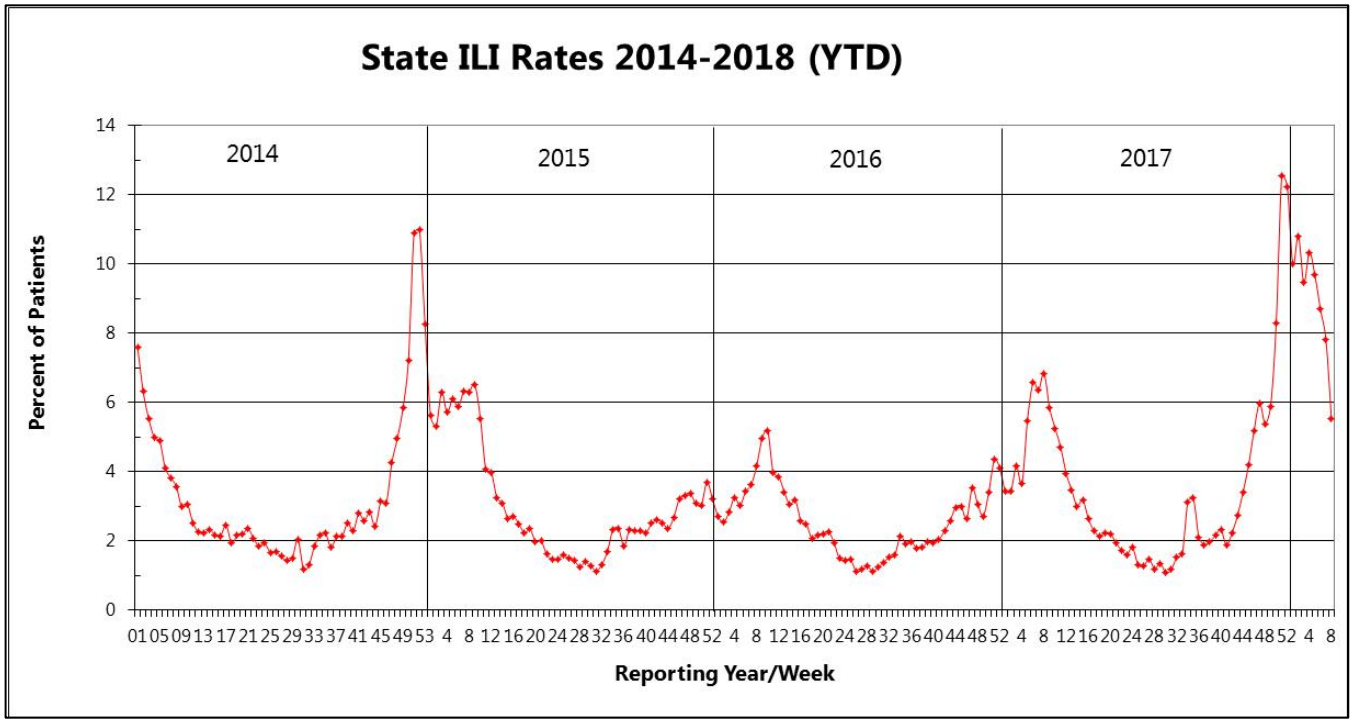


MSDH District ILI Rates (%) 2017-2018		
District	**Week 07**	**Week 08**
State	*7.8*	*5.5*
I	9.6	7.9
II	9.7	5.8
III	20.6	13.9
IV	7.7	5.0
V	6.1	5.3
VI	9.7	6.5
VII	9.9	6.5
VIII	5.4	2.6
IX	6.5	5.0



Overall, the percentage of reported ILI cases has been highest among those in the **0-4** and **5-24 years** of age groups. During week **08**, however, the percentage of ILI cases continued to be higher among those in the **5-24 years** of age group. | **Figure 2**

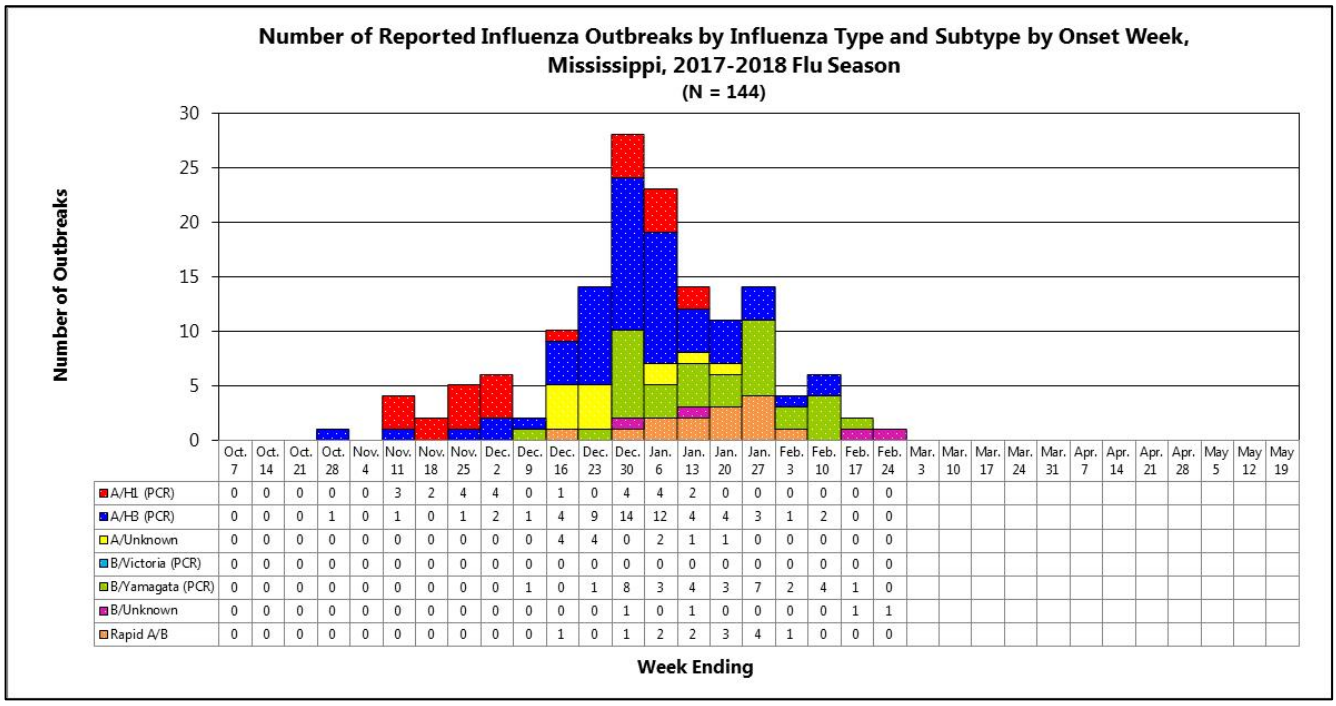
Mississippi ILI Rates 2014-2018 | **Figure 3**



Influenza Outbreaks

*Outbreaks are reportable in Mississippi as a Class 1A event and must be reported by telephone within **24 hours** of first knowledge or suspicion to the Mississippi State Department of Health. For more information on reportable diseases and conditions, please refer to the* MSDH List of Reportable Diseases and Conditions.

Between week 40 (week ending October 7th) and week **08** (week ending February 24th), 157 influenza outbreaks were reported to MSDH. MSDH investigates all reported outbreaks, and of the 157 reported outbreaks, complete information was available for 144 of them. Twenty-four (16%) of the outbreaks were attributed to influenza A (H1), 59 (40%) were due to influenza A (H3), 12 (8%) were due to influenza A, unknown subtype, 34 (23%) were due to influenza B (Yamagata), four (3%) were due to influenza B, unknown lineage, and 14 (10%) were due to an unknown influenza type. (Note: Three outbreaks were associated with two different influenza strains.) | **Figure 4**



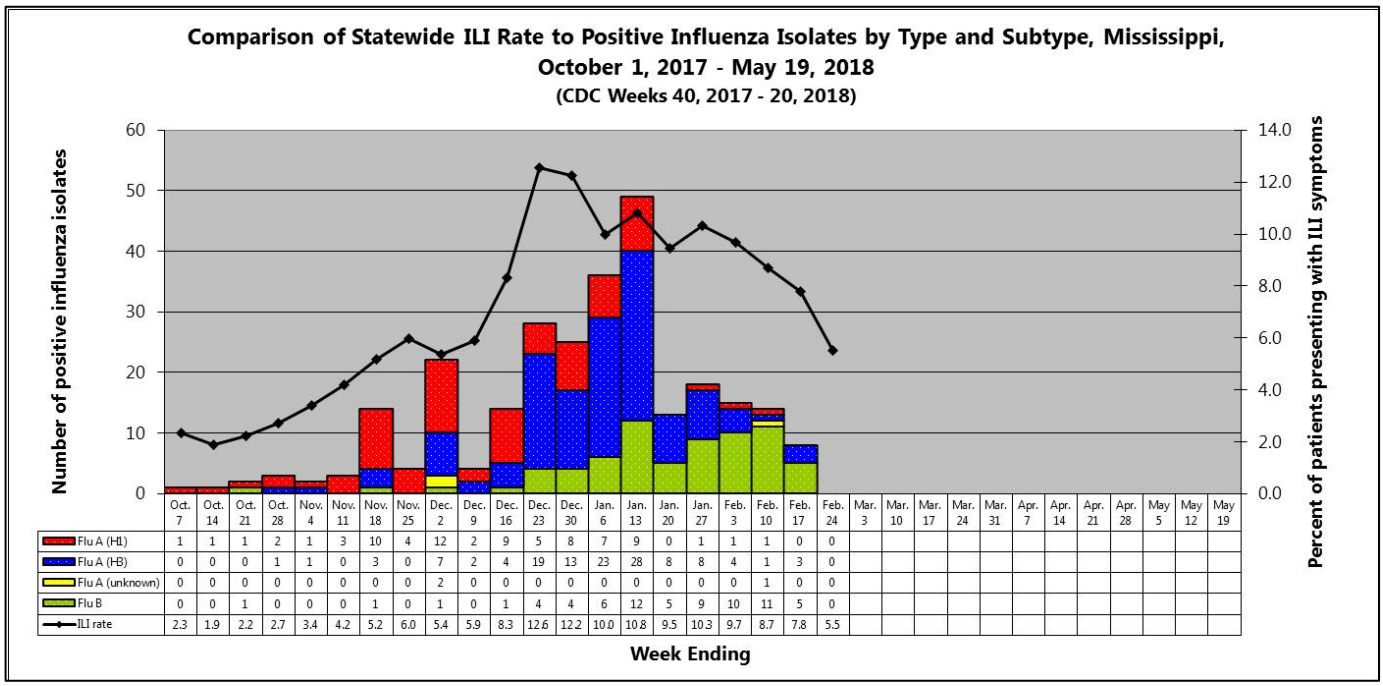
	Oct. 7	Oct. 14	Oct. 21	Oct. 28	Nov. 4	Nov. 11	Nov. 18	Nov. 25	Dec. 2	Dec. 9	Dec. 16	Dec. 23	Dec. 30	Jan. 6	Jan. 13	Jan. 20	Jan. 27	Feb. 3	Feb. 10	Feb. 17	Feb. 24	Mar. 3	Mar. 10	Mar. 17	Mar. 24	Mar. 31	Apr. 7	Apr. 14	Apr. 21	Apr. 28	May 5	May 12	May 19
A/H1 (PCR)	0	0	0	0	0	3	2	4	4	0	1	0	4	4	2	0	0	0	0	0	0												
A/H3 (PCR)	0	0	0	1	0	1	0	1	2	1	4	9	14	12	4	4	3	1	2	0	0												
A/Unknown	0	0	0	0	0	0	0	0	0	0	4	4	0	2	1	1	0	0	0	0	0												
B/Victoria (PCR)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0												
B/Yamagata (PCR)	0	0	0	0	0	0	0	0	0	1	0	1	8	3	4	3	7	2	4	1	0												
B/Unknown	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	1												
Rapid A/B	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2	3	4	1	0	0	0												

The influenza outbreaks have occurred in the following counties: Adams (5), Alcorn (3), Amite (1), Benton (1), Bolivar (1), Calhoun (1), Choctaw (1), Clarke (1), Clay (1), Coahoma (1), Covington (3), DeSoto (5), Forrest (5), Greene (1), Grenada (1), Hancock (1), Harrison (5), Hinds (12), Holmes (1), Itawamba (1), Jackson (2), Jasper (1), Jones (6), Lafayette (2), Lamar (3), Lauderdale (3), Lee (3), Lincoln (2), Lowndes (3), Madison (2), Marshall (1), Monroe (4), Neshoba (7), Newton (2), Noxubee (1), Oktibbeha (1), Panola (1), Pearl River (2), Pike (3), Pontotoc (3), Prentiss (2), Quitman (2), Rankin (5), Scott (2), Simpson (3), Smith (2), Stone (2), Sunflower (1), Tallahatchie (1), Tate (1), Tippah (2), Union (3), Walthall (3), Warren (2), Washington (4), Wilkinson (1), Winston (1), Yalobusha (1), and Yazoo (3).

For additional information on infection control measures in health care facilities and managing influenza outbreaks in long-term care facilities, please refer to the CDC's webpages: https://www.cdc.gov/flu/professionals/infectioncontrol/index.htm and https://www.cdc.gov/flu/professionals/infectioncontrol/ltc-facility-guidance.htm, respectively.

Flu Testing Reports

Since week 40 (week ending October 7th), **276** laboratory confirmed influenza samples have been identified. Seventy-eight (28%) were identified as influenza A (H1), 125 (45%) were identified as influenza A (H3), three (1%) were identified as influenza A, unknown subtype and 70 (25%) were identified as influenza B. | **Figure 5**



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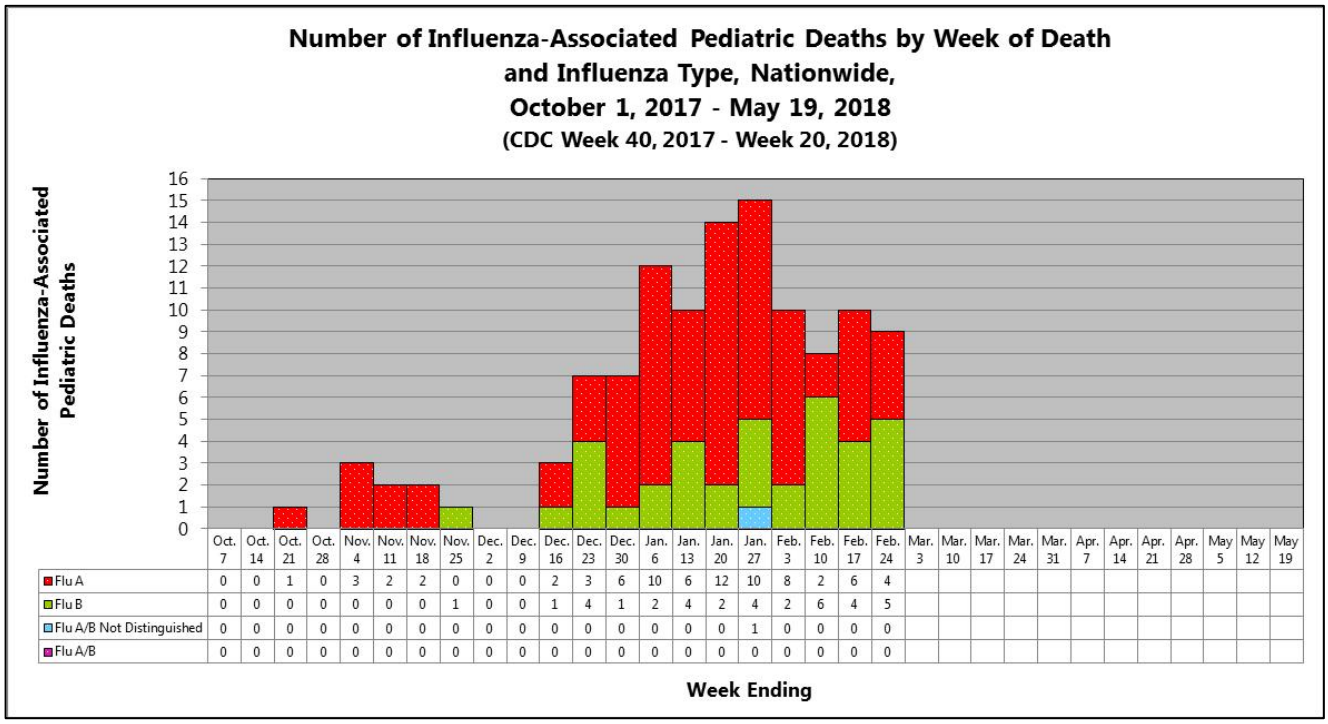
Flu A (H1)	1	1	1	2	1	3	10	4	12	2	9	5	8	7	9	0	1	1	1	0	0												
Flu A (H3)	0	0	0	1	1	0	3	0	7	2	4	19	13	23	28	8	8	4	1	3	0												
Flu A (unknown)	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0												
Flu B	0	0	1	0	0	0	1	0	1	0	1	4	4	6	12	5	9	10	11	5	0												
ILI rate	2.3	1.9	2.2	2.7	3.4	4.2	5.2	6.0	5.4	5.9	8.3	12.6	12.2	10.0	10.8	9.5	10.3	9.7	8.7	7.8	5.5												

The influenza cases were identified from the following counties: Adams (7), Alcorn (6), Attala (2), Bolivar (3), Calhoun (3), Choctaw (1), Clarke (1), Clay (3), Coahoma (6), Covington (11), DeSoto (6), Forrest (11), Greene (3), Grenada (3), Harrison (13), Hinds (15), Itawamba (1), Jackson (6), Jasper (2), Jones (10), Kemper (1), Lafayette (2), Lamar (3), Lauderdale (8), Leake (1), Lee (4), Leflore (3), Lincoln (1), Lowndes (10), Madison (4), Marion (2), Marshall (12), Monroe (5), Neshoba (10), Newton (2), Noxubee (1), Oktibbeha (7), Panola (1), Pearl River (3), Pike (5), Pontotoc (5), Prentiss (3), Quitman (3), Rankin (8), Scott (4), Sharkey (2), Simpson (3), Smith (2), Stone (4), Tallahatchie (1), Tate (3), Tippah (7), Tunica (1), Union (4), Walthall (2), Warren (4), Washington (4), Wilkinson (3), Winston (5), Yalobusha (1), and Yazoo (6). The counties for three of the cases were unknown.

National and Mississippi Pediatric Mortality Surveillance

Nationally, **17** influenza-associated pediatric deaths were reported to CDC during week **08**. Three deaths were associated with an influenza A(H3) virus and occurred during weeks 7 and 8 (weeks ending February 17th and February 24th, respectively). One death was associated with an influenza A(H1N1)pdm09 virus and occurred during week 7 (week ending February 17th). Four deaths were associated with an influenza A virus for which no subtyping was performed and occurred during weeks 52, 7 and 8 (weeks ending December 30th, February 17th, and February 24th, respectively). Nine deaths were associated with an influenza B virus and occurred during weeks 6, 7 and 8 (weeks ending February 10th, February 17th, and February 24th, respectively). **One hundred fourteen** influenza-associated pediatric deaths have been reported to CDC for the 2017-2018 season. | **Figure 6**



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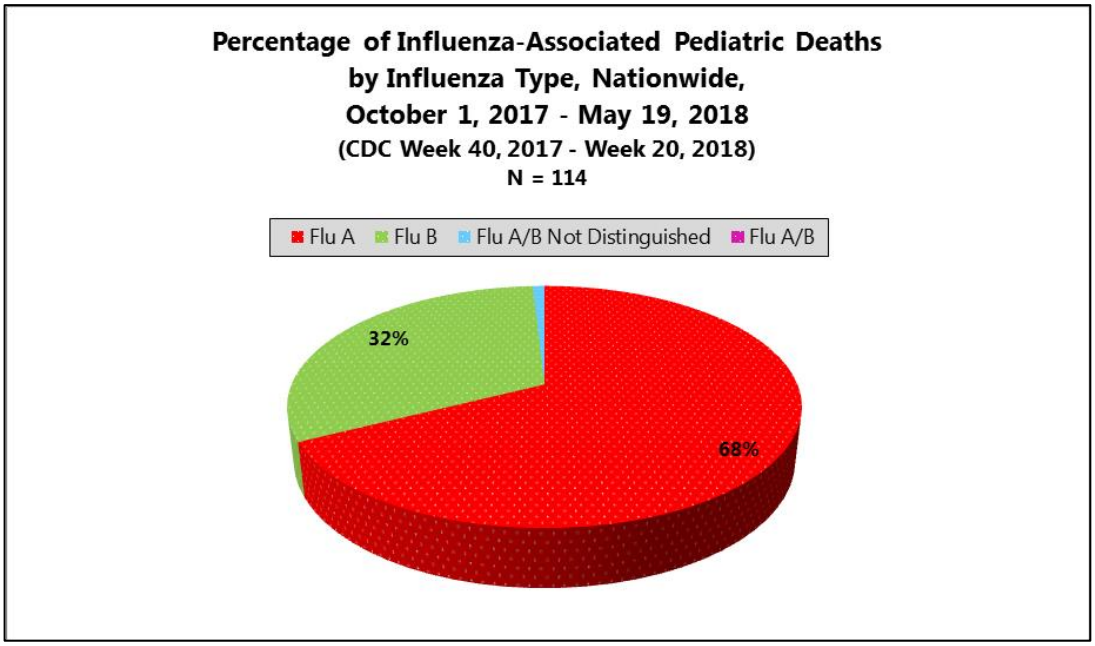
Flu A	0	0	1	0	3	2	2	0	0	0	2	3	6	10	6	12	10	8	2	6	4												
Flu B	0	0	0	0	0	0	0	1	0	0	1	4	1	2	4	2	4	2	6	4	5												
Flu A/B Not Distinguished	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0												
Flu A/B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0												



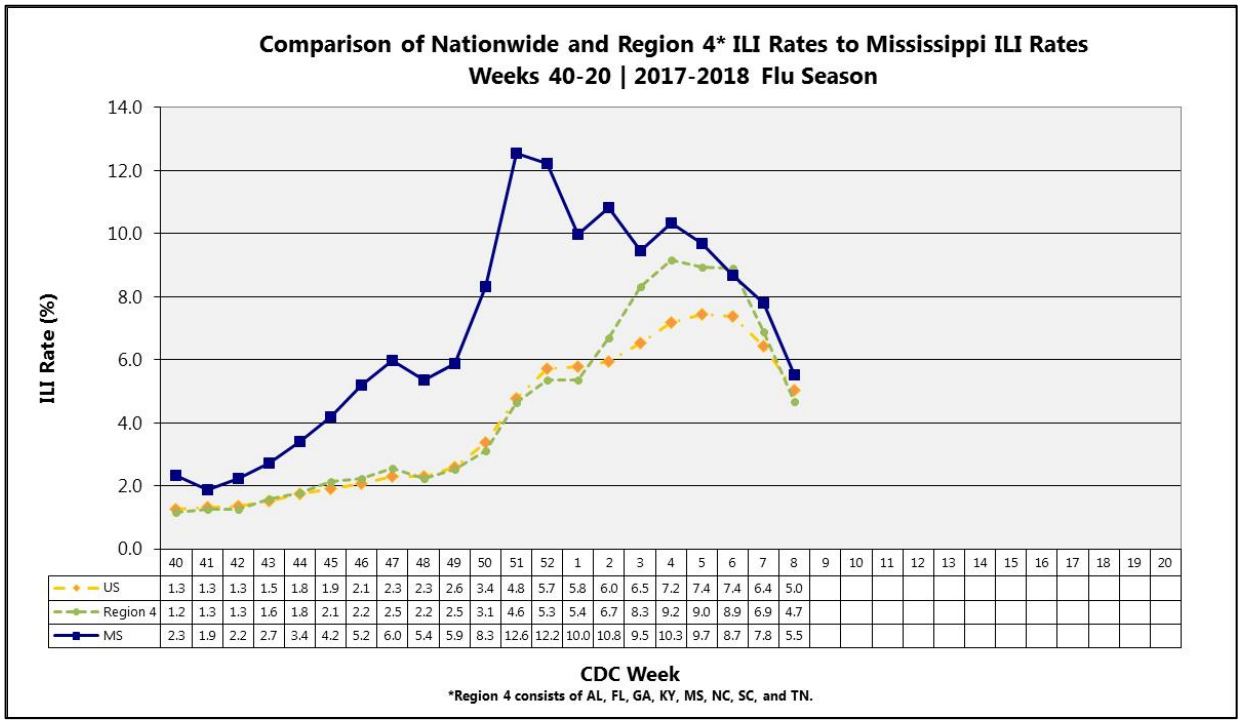
Of the **114** influenza-associated pediatric deaths reported nationally during the 2017-2018 season, 77 (68%) have been attributed to influenza A viruses, 36 (32%) to influenza B viruses, and one

(1%) to an influenza virus for which type was not determined. | **Figure 7**

Mississippi has had **two** influenza-associated pediatric deaths reported during this influenza season. For additional information on influenza-associated pediatric deaths, please refer to the CDC's FluView.

National ILI Surveillance

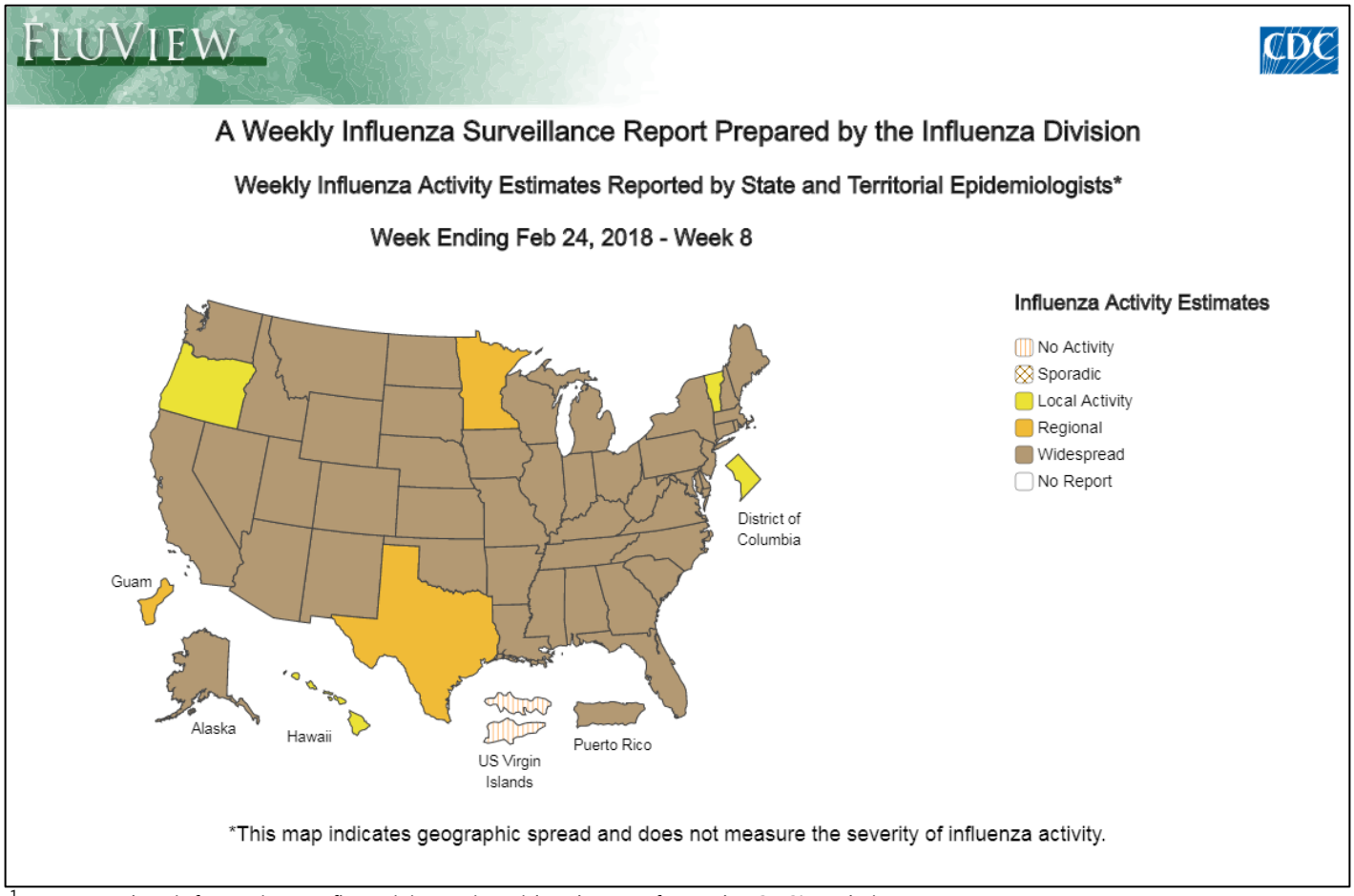
During week **08**, the MS (5.5%), national (5.0%) and Region 4 (4.7%) ILI rates decreased. | **Figure 8**



	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
US	1.3	1.3	1.3	1.5	1.8	1.9	2.1	2.3	2.3	2.6	3.4	4.8	5.7	5.8	6.0	6.5	7.2	7.4	7.4	6.4	5.0												
Region 4	1.2	1.3	1.3	1.6	1.8	2.1	2.2	2.5	2.2	2.5	3.1	4.6	5.3	5.4	6.7	8.3	9.2	9.0	8.9	6.9	4.7												
MS	2.3	1.9	2.2	2.7	3.4	4.2	5.2	6.0	5.4	5.9	8.3	12.6	12.2	10.0	10.8	9.5	10.3	9.7	8.7	7.8	5.5												

US and Region 4 ILI rates from the Centers for Disease Control and Prevention: http://www.cdc.gov/flu/weekly/.

During week **08**, influenza activity **decreased** in the United States.[1] | **Figure 9**



[1]For up-to-date information on flu activity nationwide, please refer to the CDC's website: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm.

Mississippi reported "**Widespread**" for the influenza activity during week **08**. | **Table 3**

Level of Flu Activity	**Definition**
No Activity	Overall clinical activity remains low and there are no lab confirmed cases.
Sporadic	Isolated cases of lab confirmed influenza in the state; ILI activity is not increased OR A lab-confirmed outbreak in a single institution in the state; ILI activity is not increased.
Local	Increased ILI within a single region **AND** recent (within the past 3 weeks) laboratory evidence of influenza in that region. ILI activity in other regions is not increased OR two of more institutional outbreaks (ILI or lab confirmed) within a single region **AND** recent (within the past 3 weeks) lab confirmed influenza in that region. Other regions do not have increased ILI and virus activity is no greater than sporadic in those regions
Regional	Increased ILI in at least 2 regions but fewer than half of the regions **AND** recent (within the past 3 weeks) lab confirmed influenza in the affected regions OR Institutional outbreaks (ILI or lab confirmed) in at least 2 regions but fewer than half of the regions **AND** recent lab confirmed influenza in the affected regions.
Widespread	Increased ILI and/or institutional outbreaks (ILI or lab confirmed) in at least half of the regions **AND** recent (within the past 3 weeks) lab confirmed influenza in the state.

Additional influenza information:

Centers for Disease Control and Prevention	**http://cdc.gov/flu/**
Centers for Disease Control and Prevention FluView	**http://www.cdc.gov/flu/weekly/**
MSDH Flu and Pneumonia	**http://msdh.ms.gov/msdhsite/_static/14,0,199.html**
World Health Organization FluNet	**http://www.who.int/influenza/gisrs_laboratory/flunet/en/**

Appendix

Figure 1

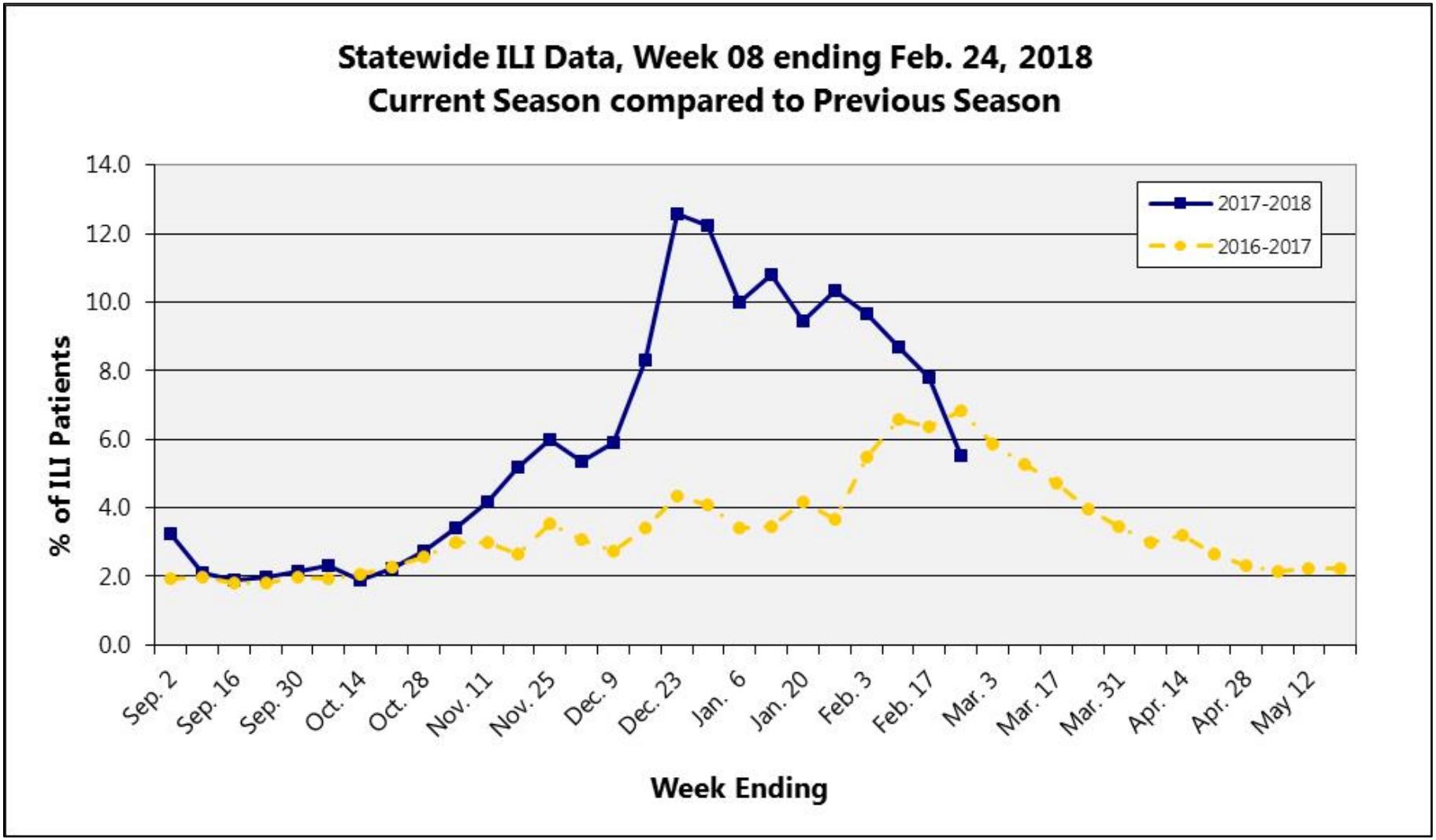


Figure 2

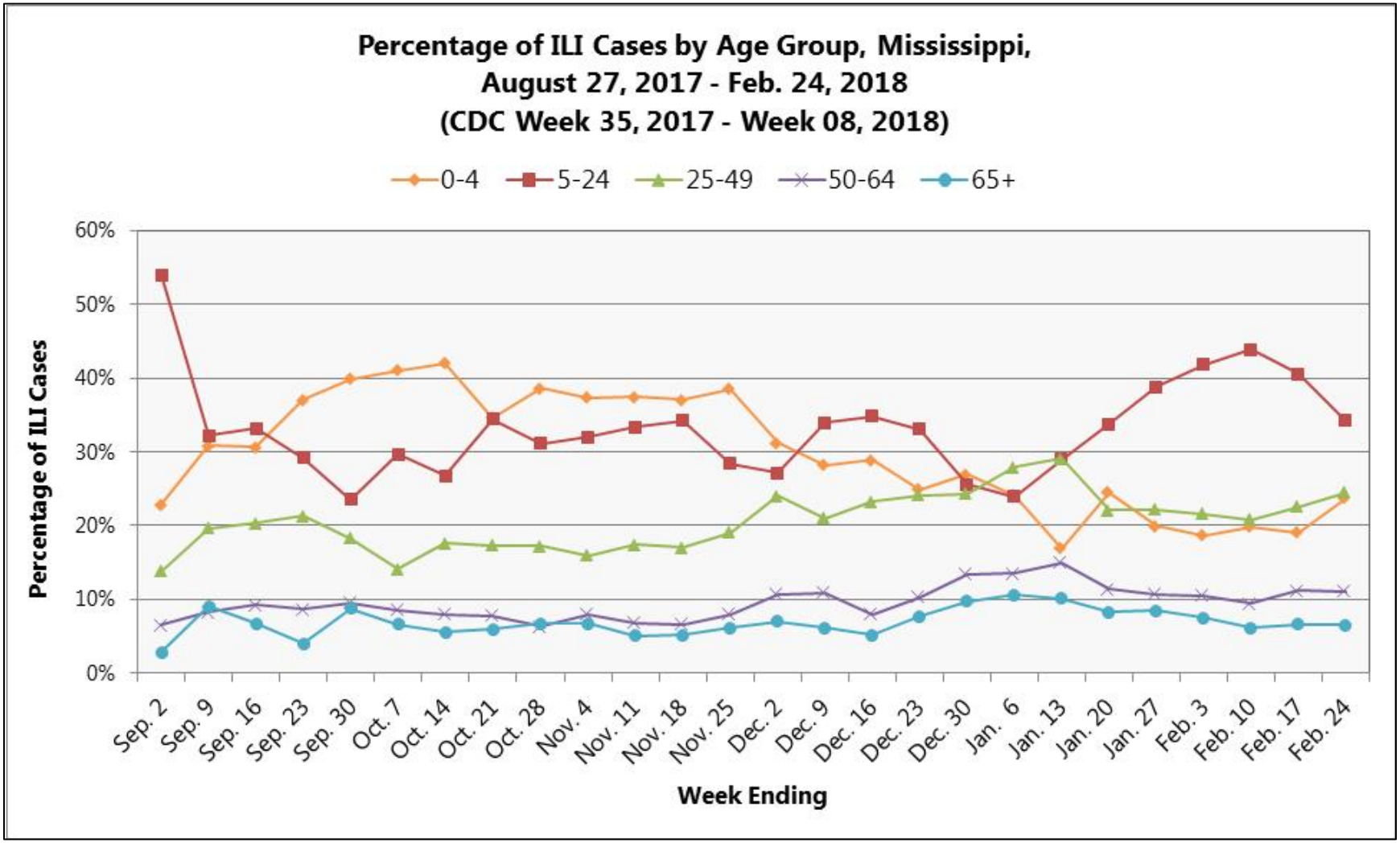

Percentage of ILI Cases by Age Group, Mississippi,
August 27, 2017 - Feb. 24, 2018
(CDC Week 35, 2017 - Week 08, 2018)
0-4
5-24
25-49
50-64
65+
60%
50%
40%
30%
20%
10%
0%
Percentage of ILI Cases
Sep. 2
Sep. 9
Sep. 16
Sep. 23
Sep. 30
Oct. 7
Oct. 14
Oct. 21
Oct. 28
Nov. 4
Nov. 11
Nov. 18
Nov. 25
Dec. 2
Dec. 9
Dec. 16
Dec. 23
Dec. 30
Jan. 6
Jan. 13
Jan. 20
Jan. 27
Feb. 3
Feb. 10
Feb. 17
Feb. 24
Week Ending

Figure 3

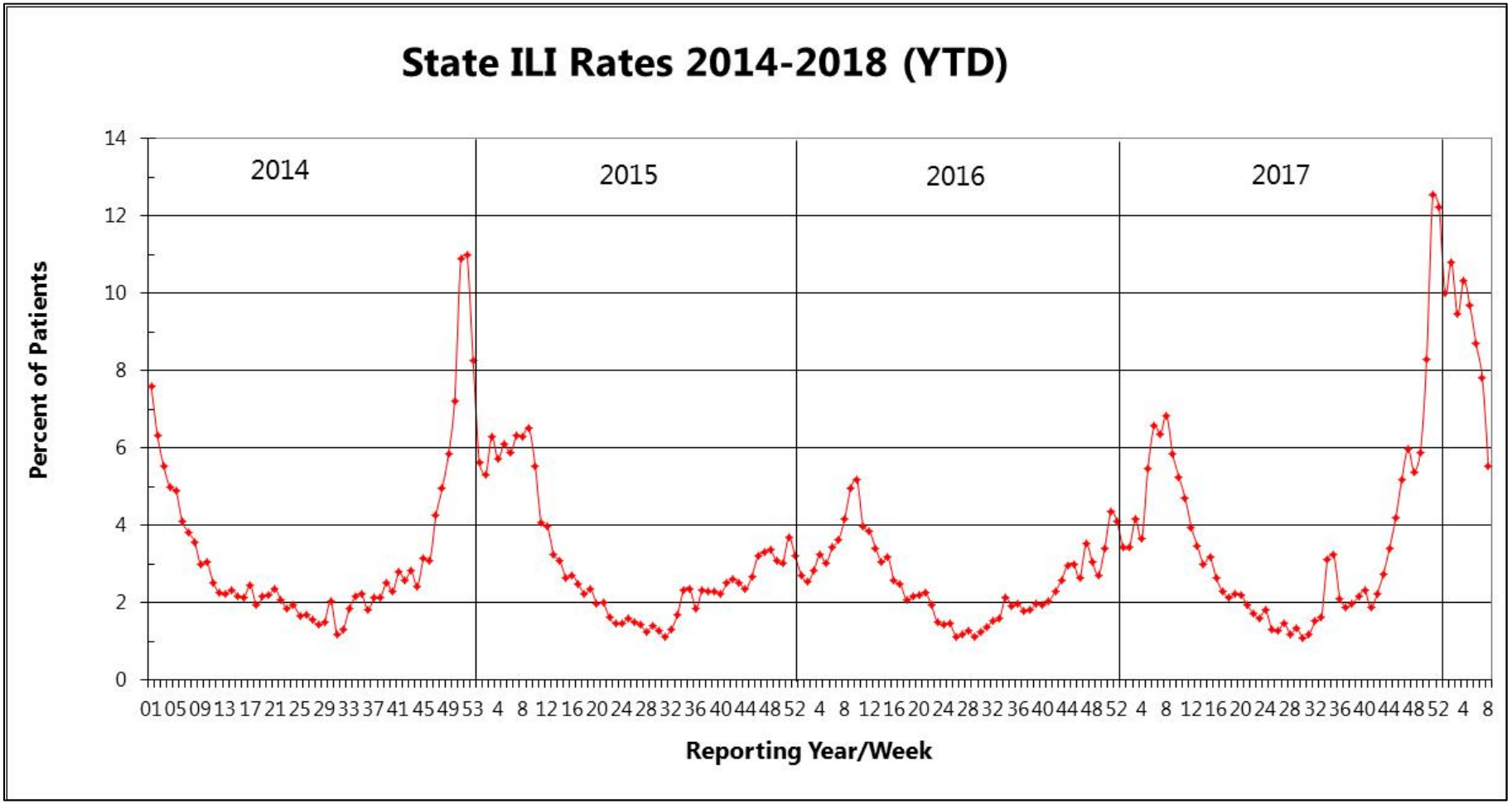
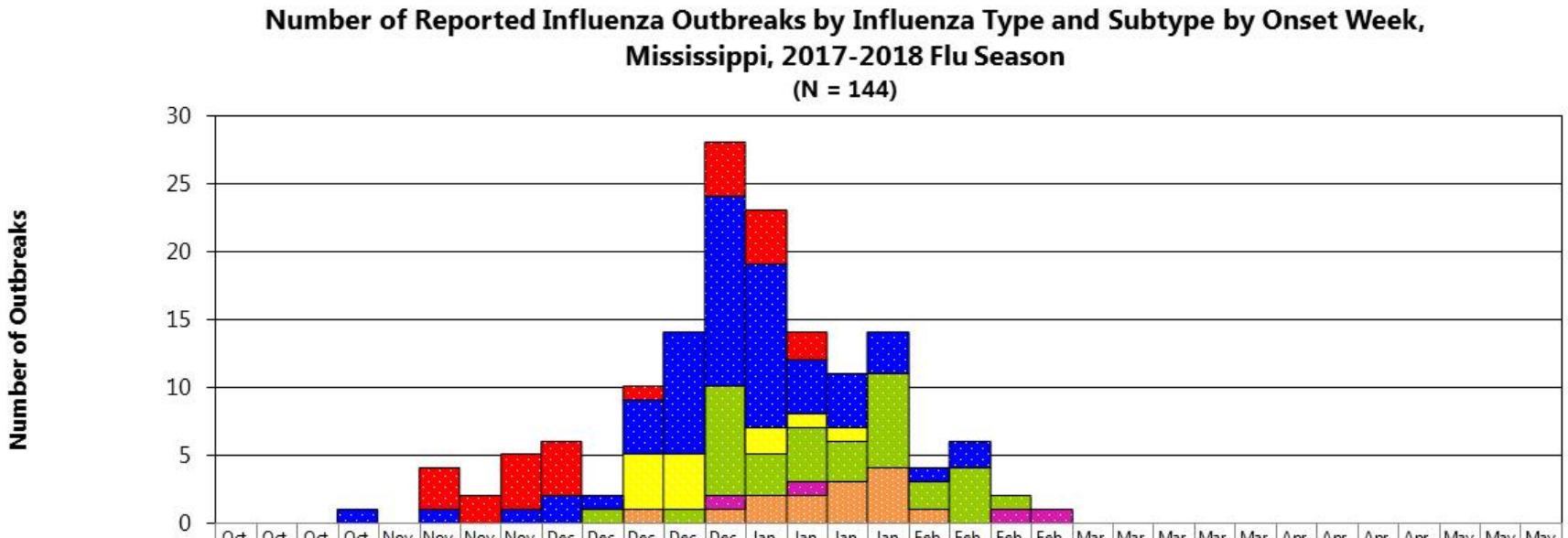

State ILI Rates 2014-2018 (YTD)
2014
2015
2016
2017
Percent of Patients
0
2
4
6
8
10
12
14
01 05 09 13 17 21 25 29 33 37 41 45 49 53 4 8 12 16 20 24 28 32 36 40 44 48 52 4 8 12 16 20 24 28 32 36 40 44 48 52 4 8 12 16 20 24 28 32 36 40 44 48 52 4 8
Reporting Year/Week

Figure 4



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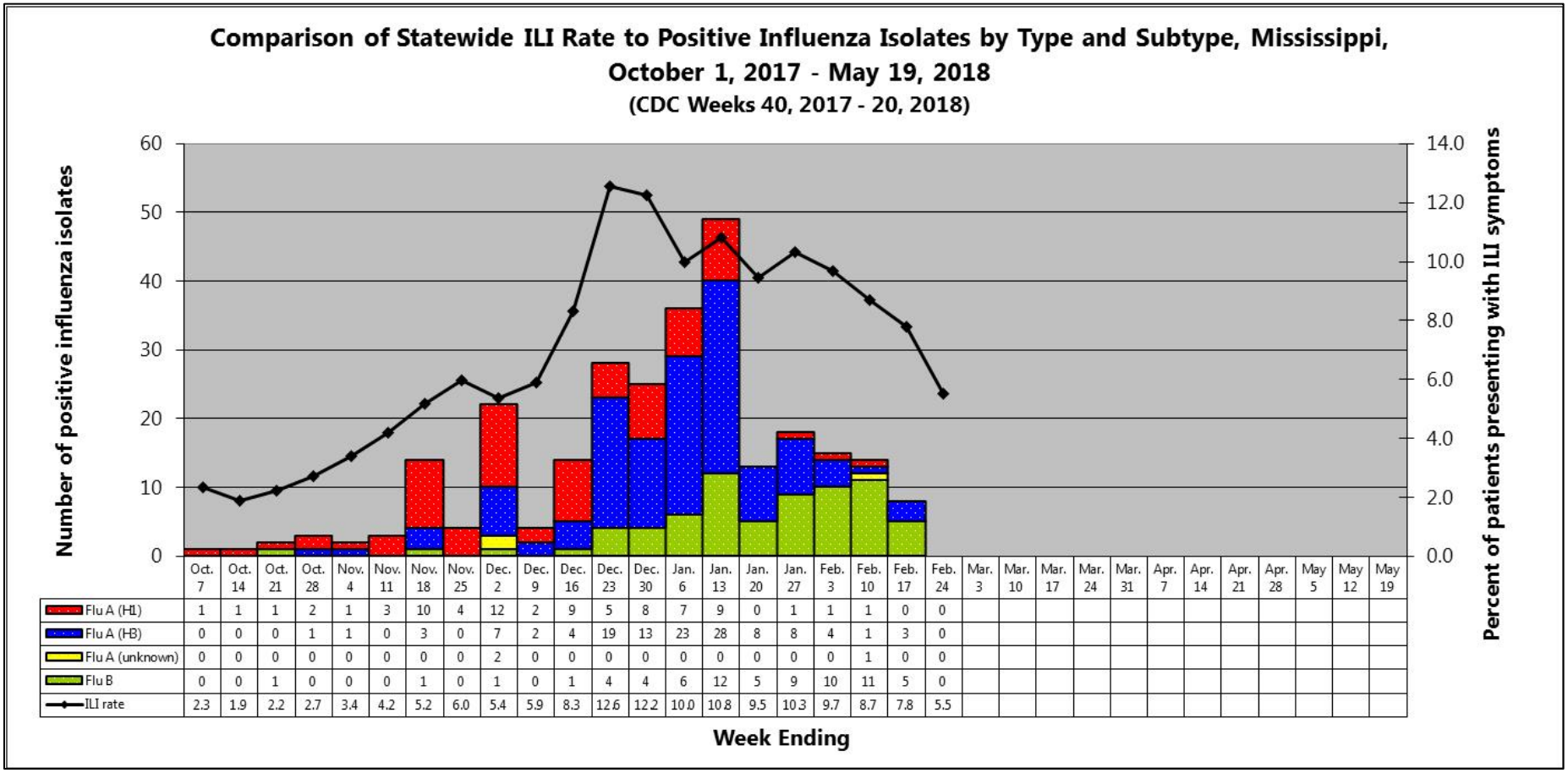
A/H1 (PCR)	0	0	0	0	0	3	2	4	4	0	1	0	4	4	2	0	0	0	0	0	0												
A/H3 (PCR)	0	0	0	1	0	1	0	1	2	1	4	9	14	12	4	4	3	1	2	0	0												
A/Unknown	0	0	0	0	0	0	0	0	0	0	4	4	0	2	1	1	0	0	0	0	0												
B/Victoria (PCR)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0												
B/Yamagata (PCR)	0	0	0	0	0	0	0	0	0	1	0	1	8	3	4	3	7	2	4	1	0												
B/Unknown	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	1												
Rapid A/B	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2	3	4	1	0	0	0												

Figure 5



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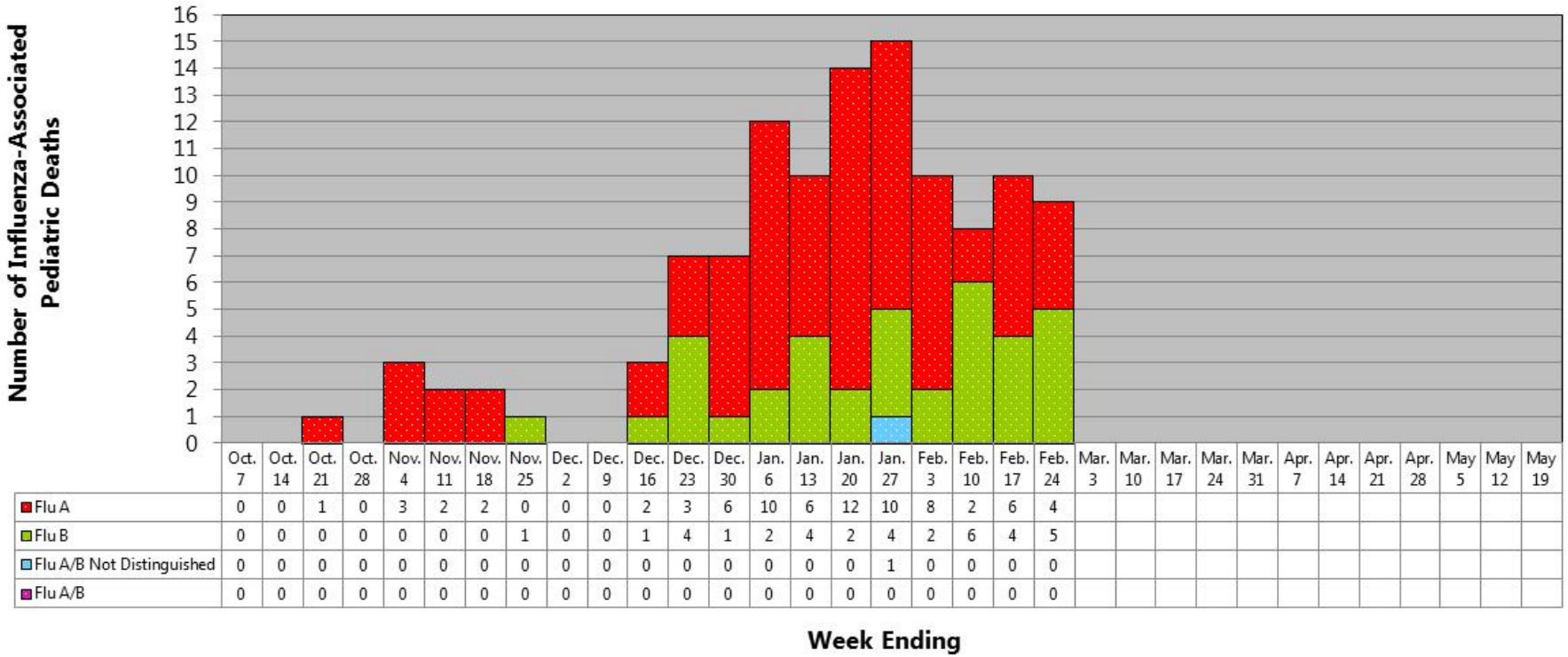
Flu A (H1)	1	1	1	2	1	3	10	4	12	2	9	5	8	7	9	0	1	1	1	0	0												
Flu A (H3)	0	0	0	1	1	0	3	0	7	2	4	19	13	23	28	8	8	4	1	3	0												
Flu A (unknown)	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0												
Flu B	0	0	1	0	0	0	1	0	1	0	1	4	4	6	12	5	9	10	11	5	0												
ILI rate	2.3	1.9	2.2	2.7	3.4	4.2	5.2	6.0	5.4	5.9	8.3	12.6	12.2	10.0	10.8	9.5	10.3	9.7	8.7	7.8	5.5												

Figure 6



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Flu A	0	0	1	0	3	2	2	0	0	0	2	3	6	10	6	12	10	8	2	6	4												
Flu B	0	0	0	0	0	0	0	1	0	0	1	4	1	2	4	2	4	2	6	4	5												
Flu A/B Not Distinguished	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0												
Flu A/B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0												

Figure 7

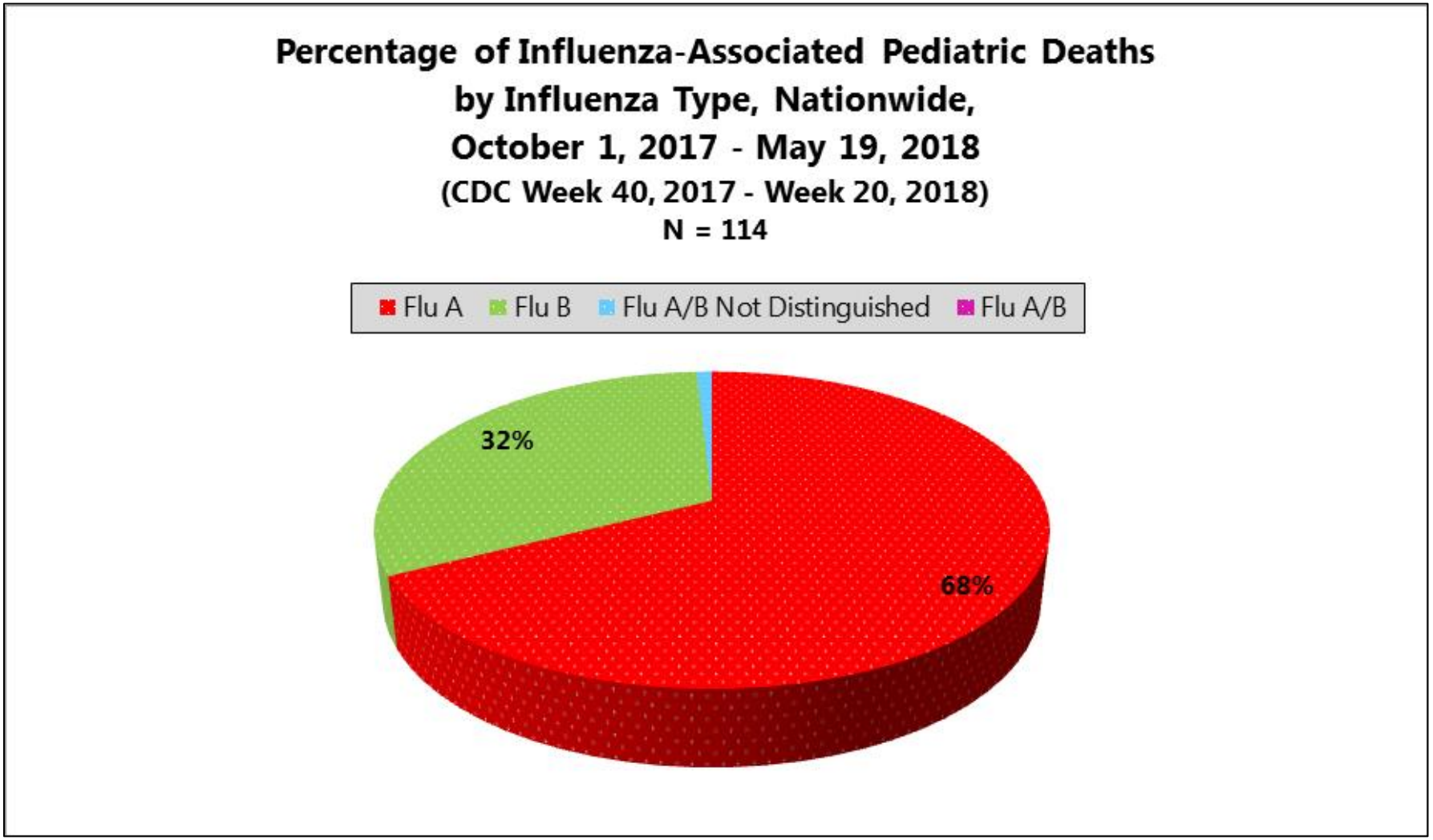
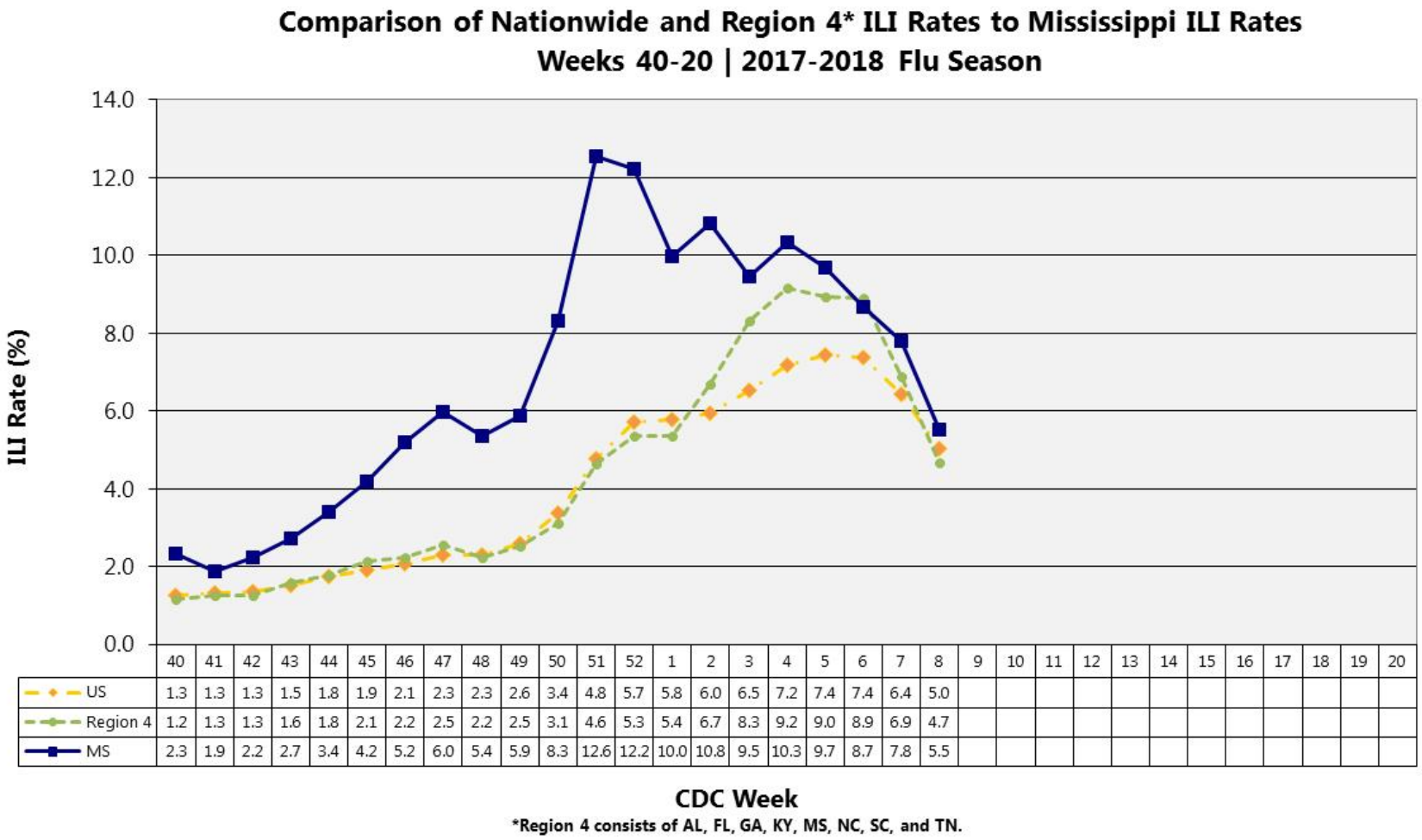

Percentage of Influenza-Associated Pediatric Deaths
by Influenza Type, Nationwide,
October 1, 2017 - May 19, 2018
(CDC Week 40, 2017 - Week 20, 2018)
N = 114
Flu A
Flu B
Flu A/B Not Distinguished
Flu A/B
32%
68%

Figure 8



	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
US	1.3	1.3	1.3	1.5	1.8	1.9	2.1	2.3	2.3	2.6	3.4	4.8	5.7	5.8	6.0	6.5	7.2	7.4	7.4	6.4	5.0												
Region 4	1.2	1.3	1.3	1.6	1.8	2.1	2.2	2.5	2.2	2.5	3.1	4.6	5.3	5.4	6.7	8.3	9.2	9.0	8.9	6.9	4.7												
MS	2.3	1.9	2.2	2.7	3.4	4.2	5.2	6.0	5.4	5.9	8.3	12.6	12.2	10.0	10.8	9.5	10.3	9.7	8.7	7.8	5.5												

*Region 4 consists of AL, FL, GA, KY, MS, NC, SC, and TN.

Figure 9

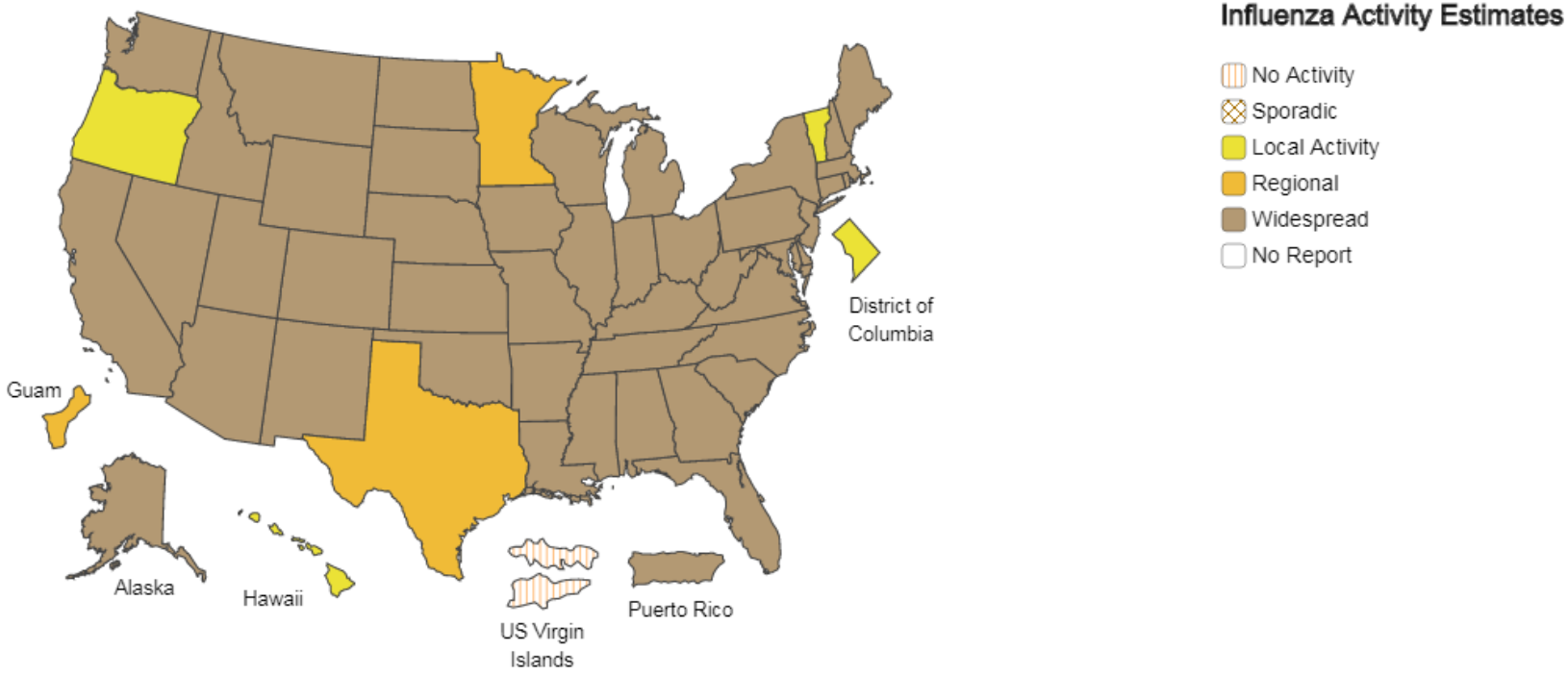
FLUVIEW

CDC

A Weekly Influenza Surveillance Report Prepared by the Influenza Division

Weekly Influenza Activity Estimates Reported by State and Territorial Epidemiologists*

Week Ending Feb 24, 2018 - Week 8



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