Influenza Surveillance Report
2022 MMWR Week 44 (ending Nov. 5th, 2022)

Contents

Summary

Objective: To monitor trends in influenza and influenza-like visits to facilities reporting to the Southeast Texas Syndromic Surveillance System (HHD-ESSENCE) in the Houston/Harris County region for public health intervention.

Time Frame: January 2, 2022 (start of 2022 MMWR Week 1) to November 5, 2022 (end of 2022 MMWR Week 44).

Summary:

- Flu levels are on the rise for the Houston/Harris County region, which is consistent to trends seen at both the state and national levels. Compared to the 2021-2022 season, where flu appeared to hit the area later in the season (February/March 2022), the current season seems to be hitting earlier, beginning in as early as late August/early September 2022.
- The 5-week average counts of ILI for both age groups are on an upward trend since August 2022.
- The 5-week average counts of ILI with an RSV or COVID diagnosis is on a downward trend since August, while both ILI without and an RSV or COVID diagnosis and the discharge diagnosed influenza counts are on an upward trend.
- Both the percentage of visits with ILI and the percentage of visits with discharge diagnosed influenza are trending upwards, while the COVID-19 positivity rate is trending downwards.
- 16 schools tested positive for Influenza A in 2022 Week 44 (i.e., 39% of the 41 schools sampled for this week).

	5-week Trend	Change from Previous Week	Current Week (2022 MMWR Week 44)	Previous Week (2022 MMWR Week 43)	Change from Previous Week in Texas	Change from Previous Week in U.S.
Percentage of Visits with ILI	Increasing	-0.00%	3.39%	3.39%	Increasing	Increasing
Percentage of Visits with Discharge Diagnosed Influenza	Increasing	+0.12%	6.64%	6.52%	N/A	N/A
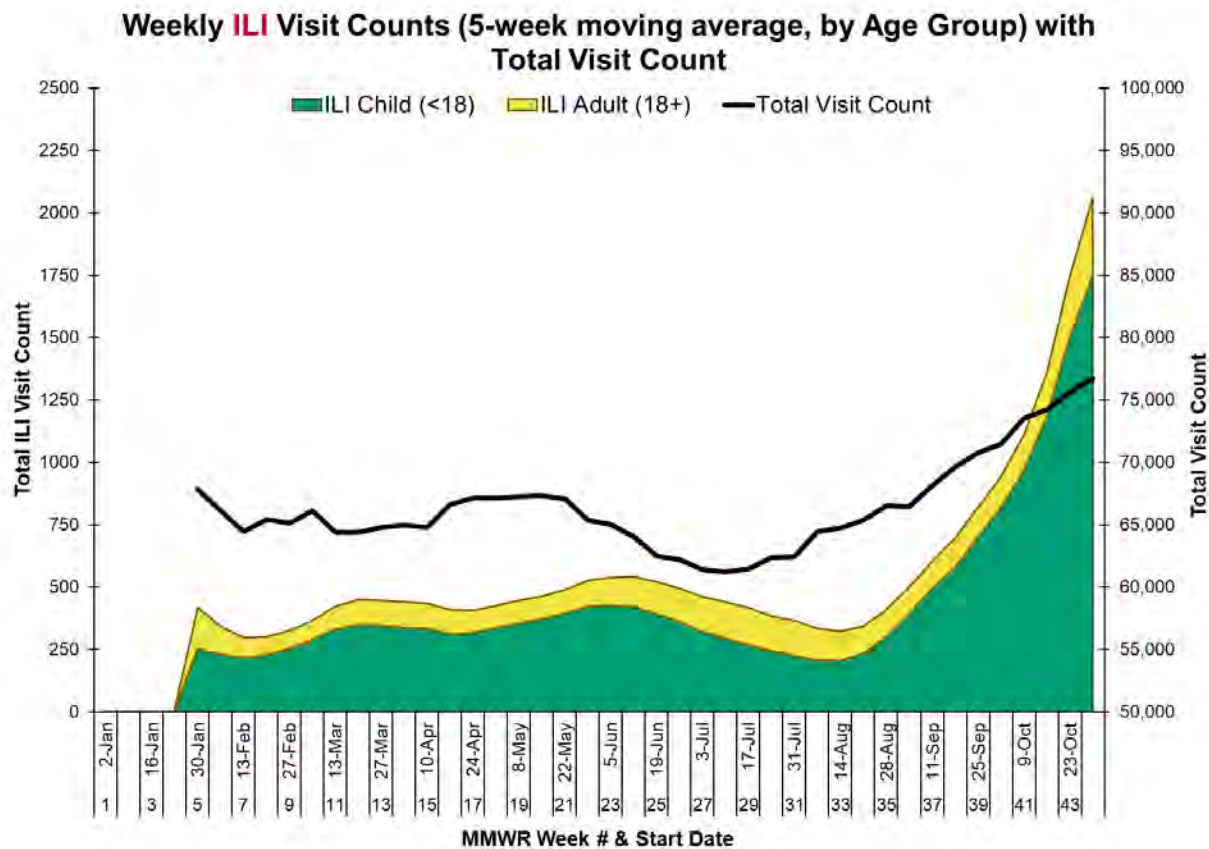
Figure 1. The ILI Counts by Age Group with the Total Visit Count (5-week Moving Averages).

As seen in Figure 1, the 5-week average counts of ILI for both age groups are on an upward trend since August 2022.
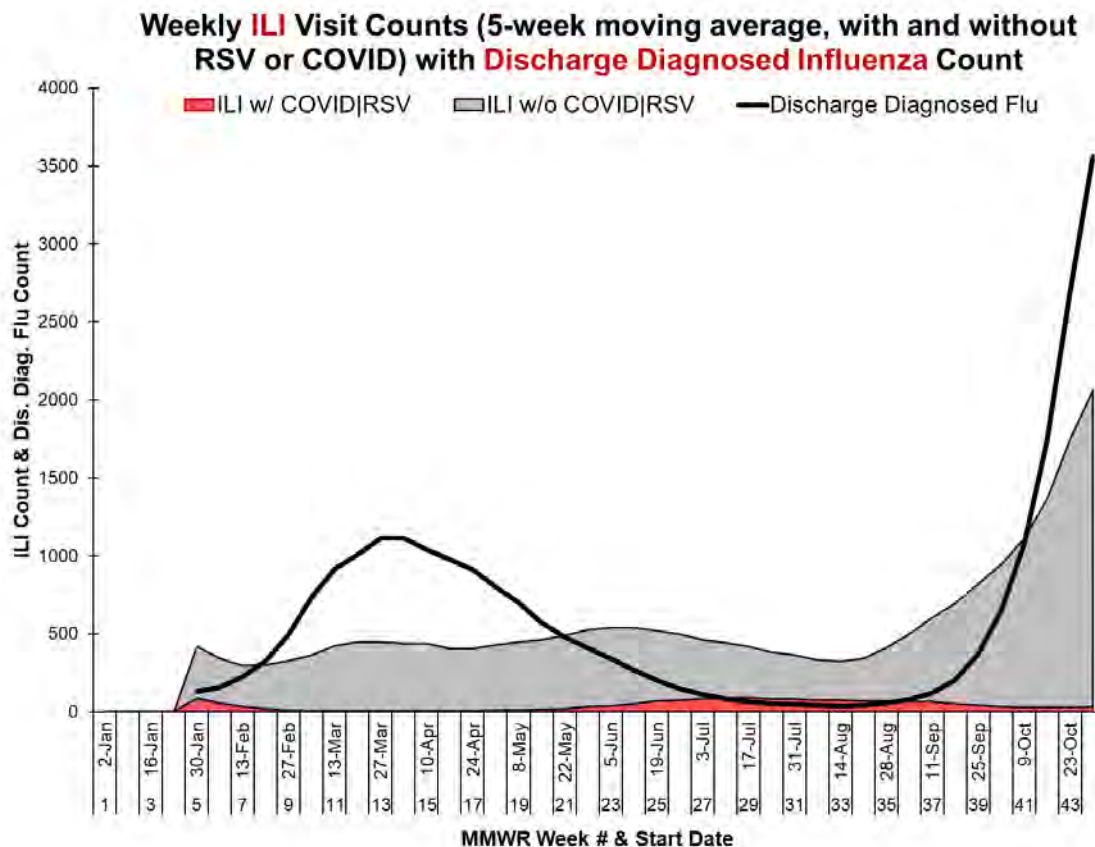
Figure 2. The Weekly ILI Visit Counts, with and without an RSV or COVID Diagnosis, with the Discharge Diagnosed Influenza Count (5-week Moving Averages).

As seen in Figure 2, the 5-week average counts of ILI with an RSV or COVID diagnosis is on a downward trend since August, while both ILI without and an RSV or COVID diagnosis and the discharge diagnosed influenza counts are on an upward trend.
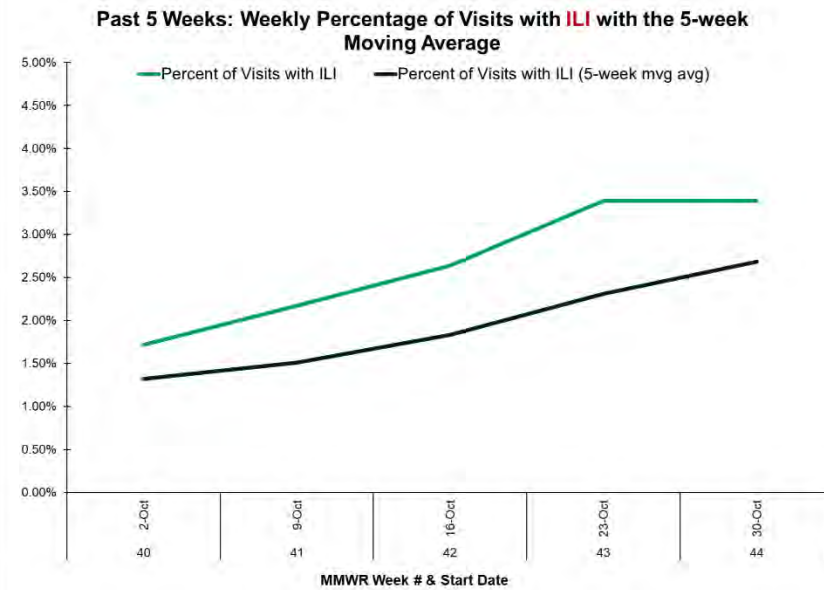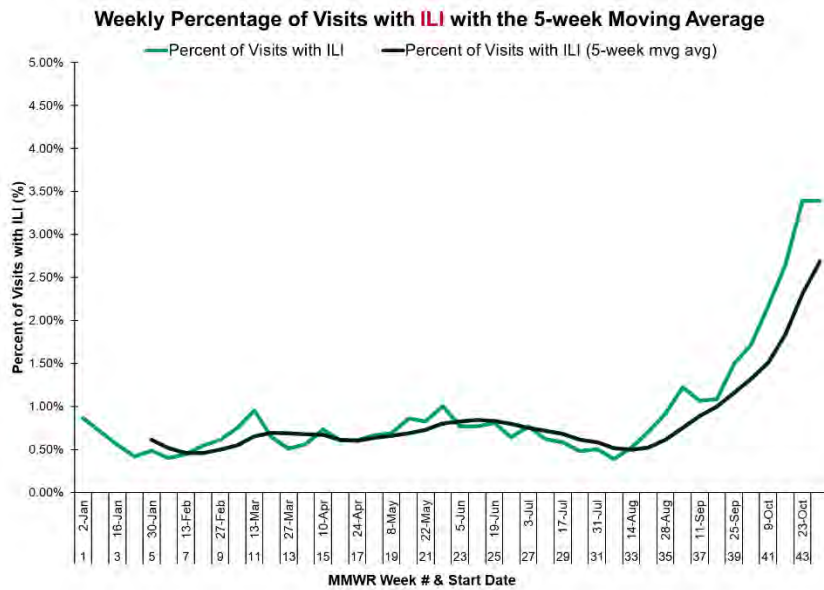
Figure 3. The Percentage of Visits with ILI with 5-week Moving Average.

As seen in Figure 3, the percentage of visits with ILI is on an upward trend.
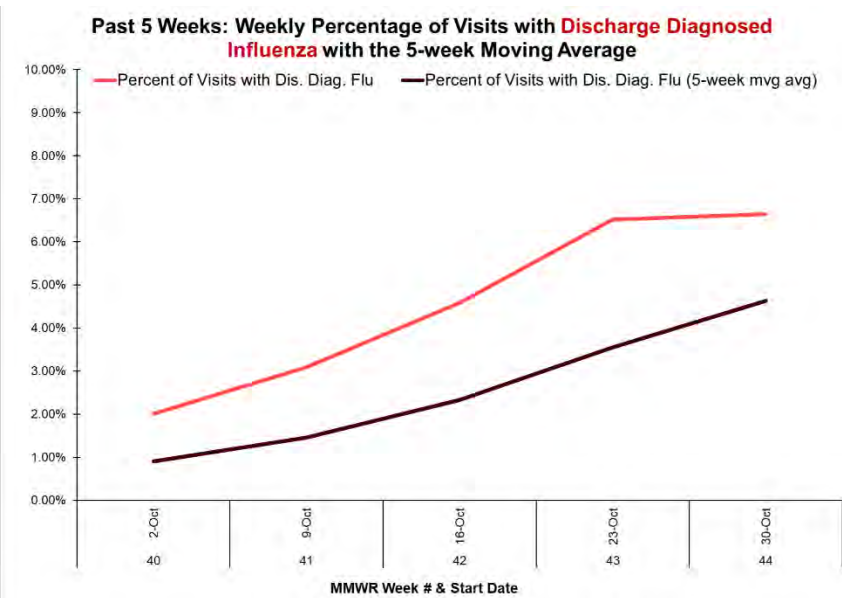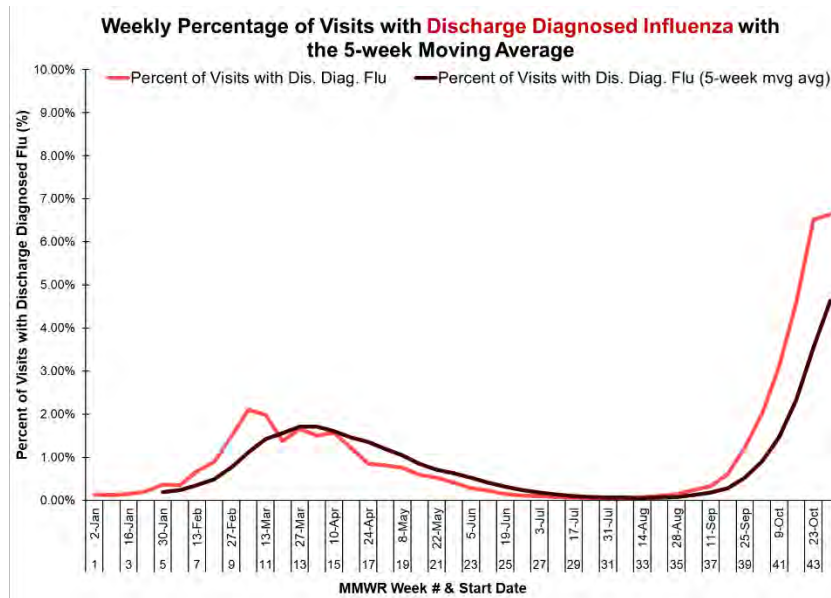
Figure 4. The Percentage of Visits with Discharge Diagnosed Influenza with 5-week Moving Average.

As seen in Figure 4, the percentage of visits with discharge diagnosed influenza is on an upward trend.
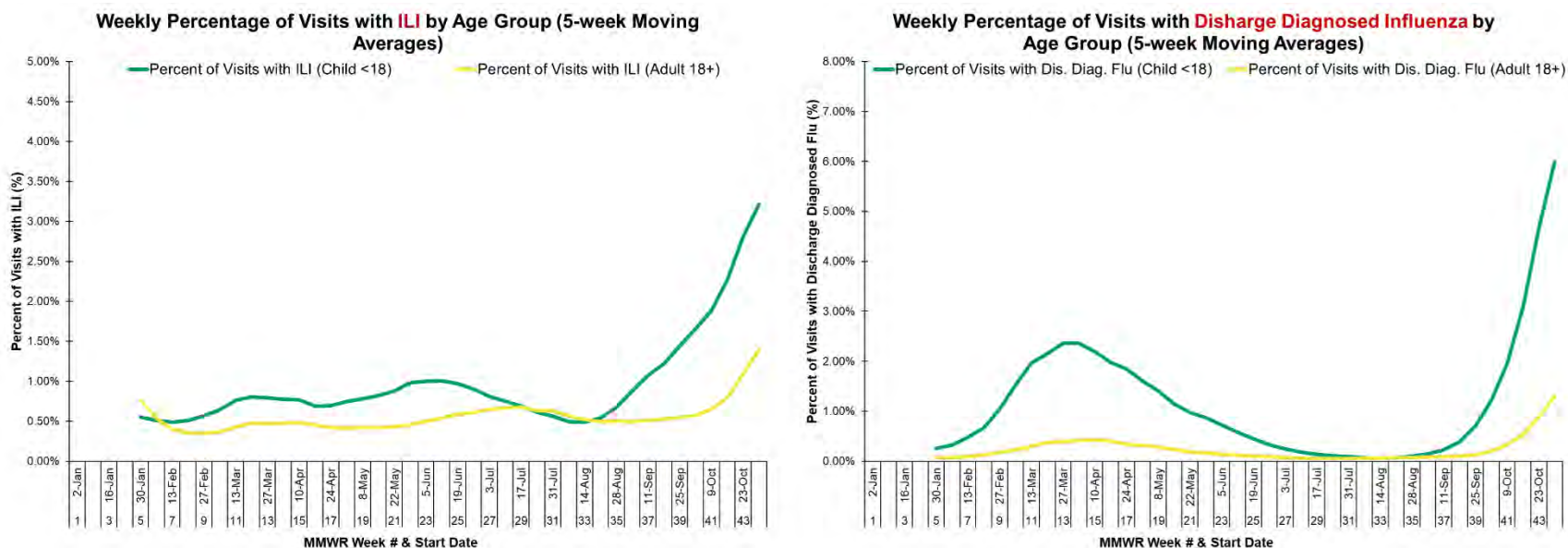
Figure 5. The Percentage of Visits with ILI by Age Group (left, 5-week moving averages) and the Percentage of Visits with Discharge Diagnosed Influenza (right, 5-week moving averages).

As seen in Figure 5, both the percentage of visits with ILI and the percentage of visits with discharge diagnosed influenza are on an upward trend for both age groups. For both these metrics, the percentages for the children under 18 age group appear to have a steeper increase compared to the adult age group.
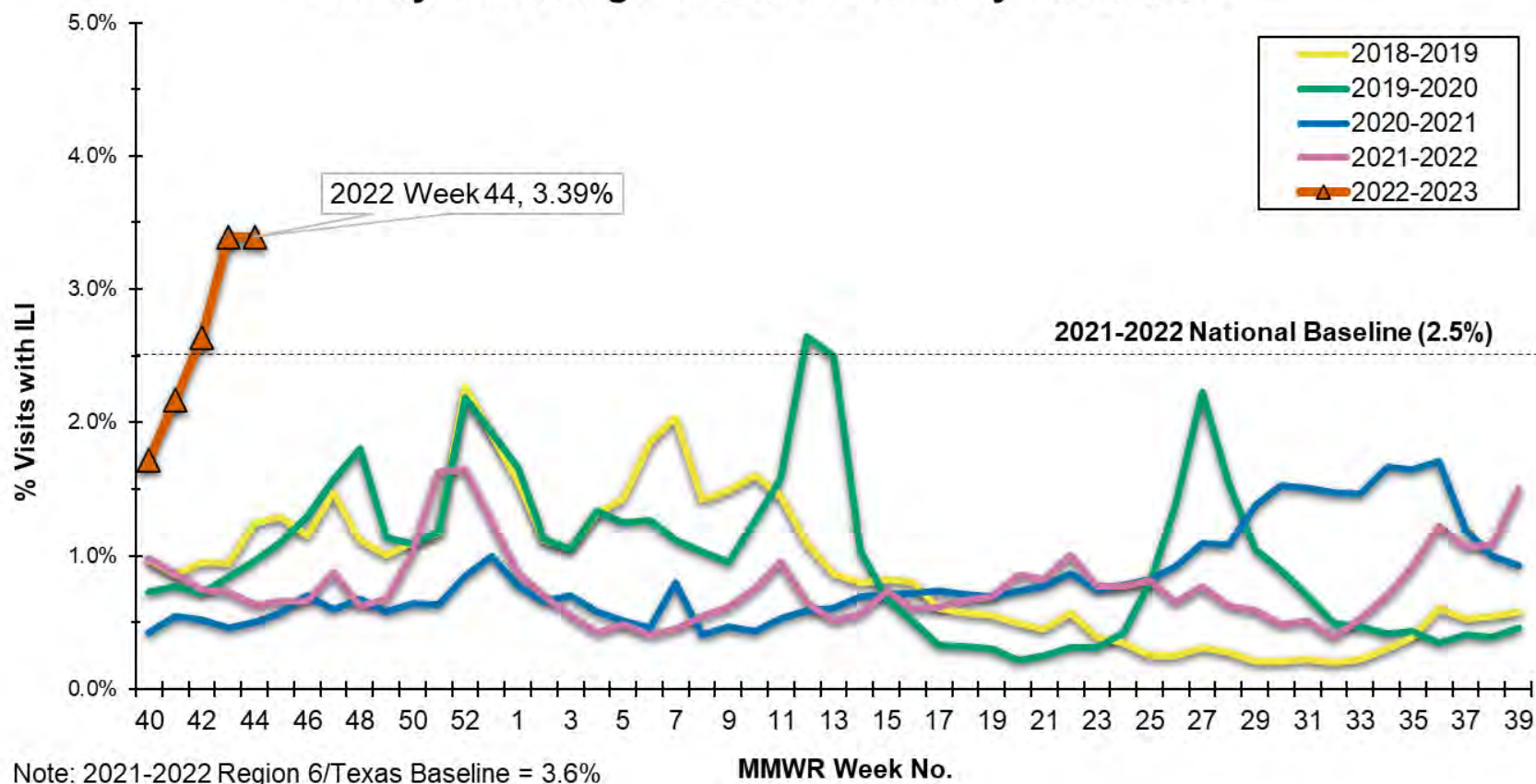
Figure 6. The Weekly Percentage of Visits with ILI for Current (2022-2023) and Previous Seasons.

Note: 2020 has 53 weeks. Week 53 for 2019 and 2021 are the averages of Week 52 of the given year with Week 1 of the next year.

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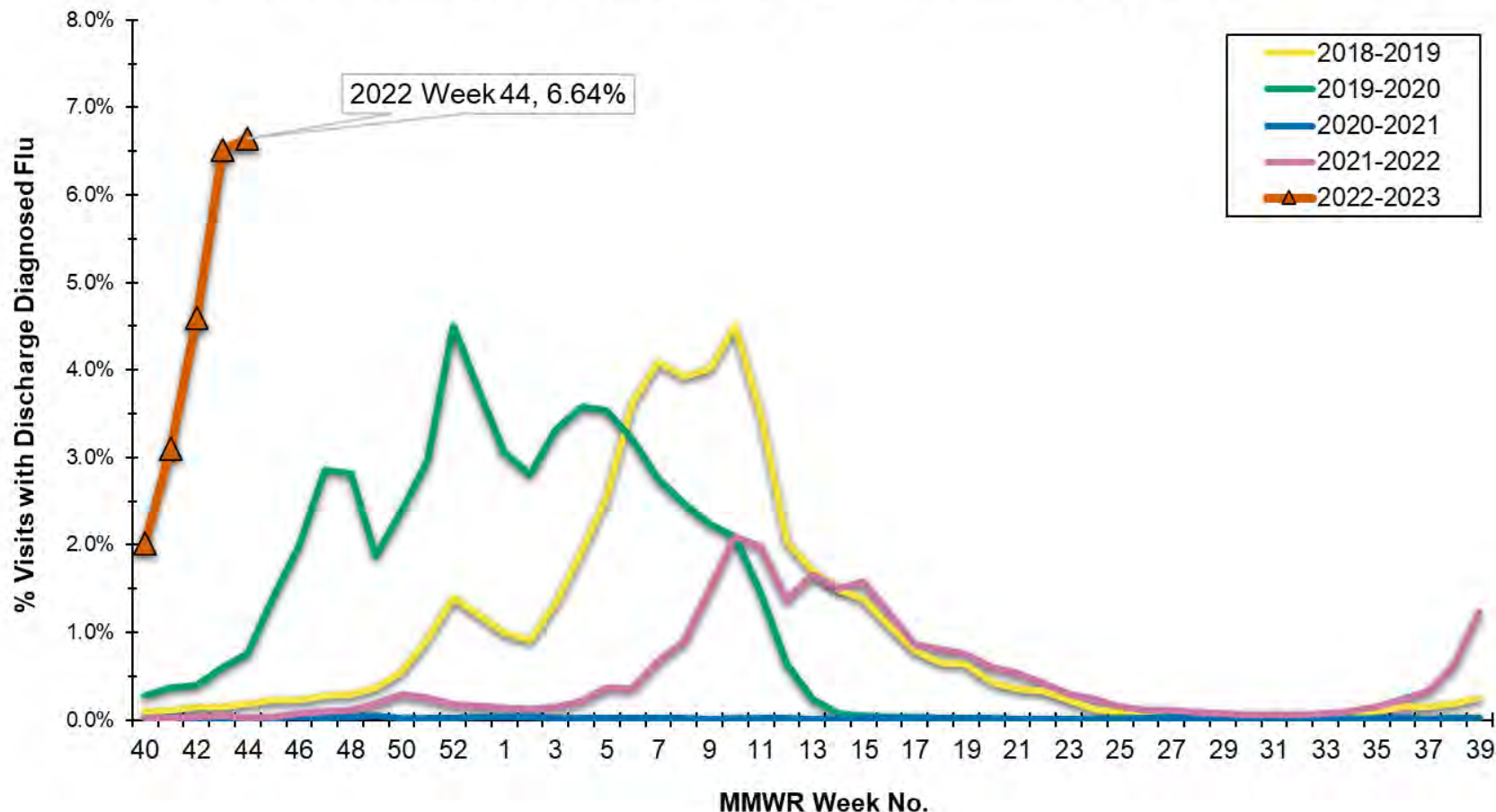
Figure 7. The Weekly Percentage of Visits with Discharge Diagnosed Influenza for Current (2022-2023) and Previous Seasons.

Note: 2020 has 53 weeks. Week 53 for 2019 and 2021 are the averages of Week 52 of the given year with Week 1 of the next year.
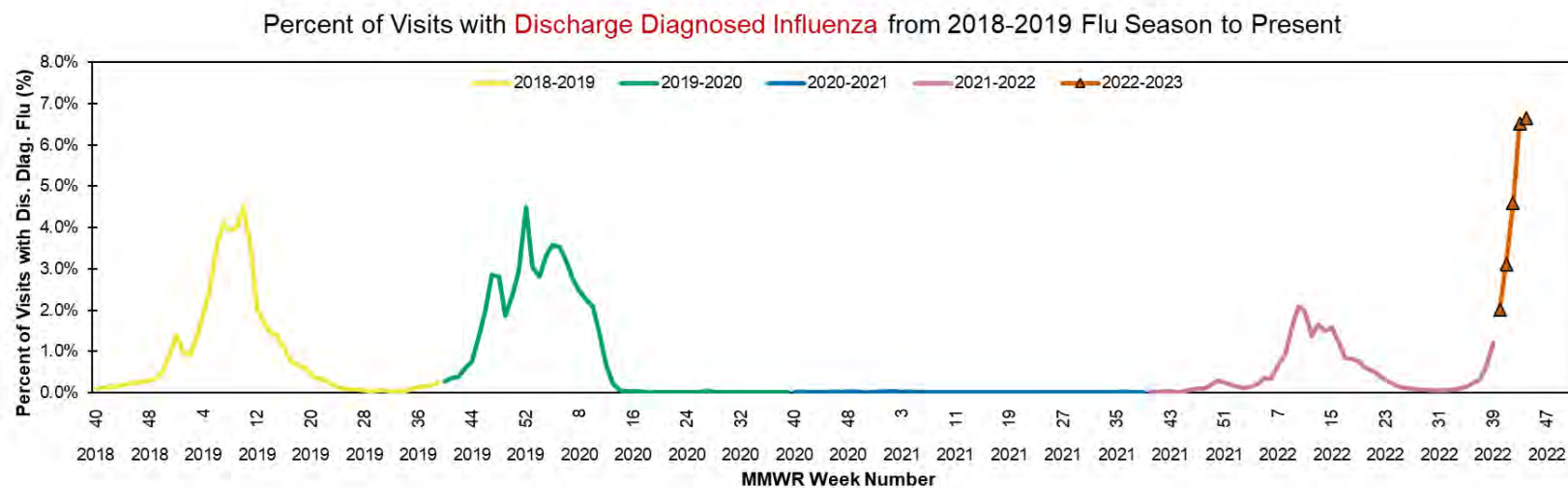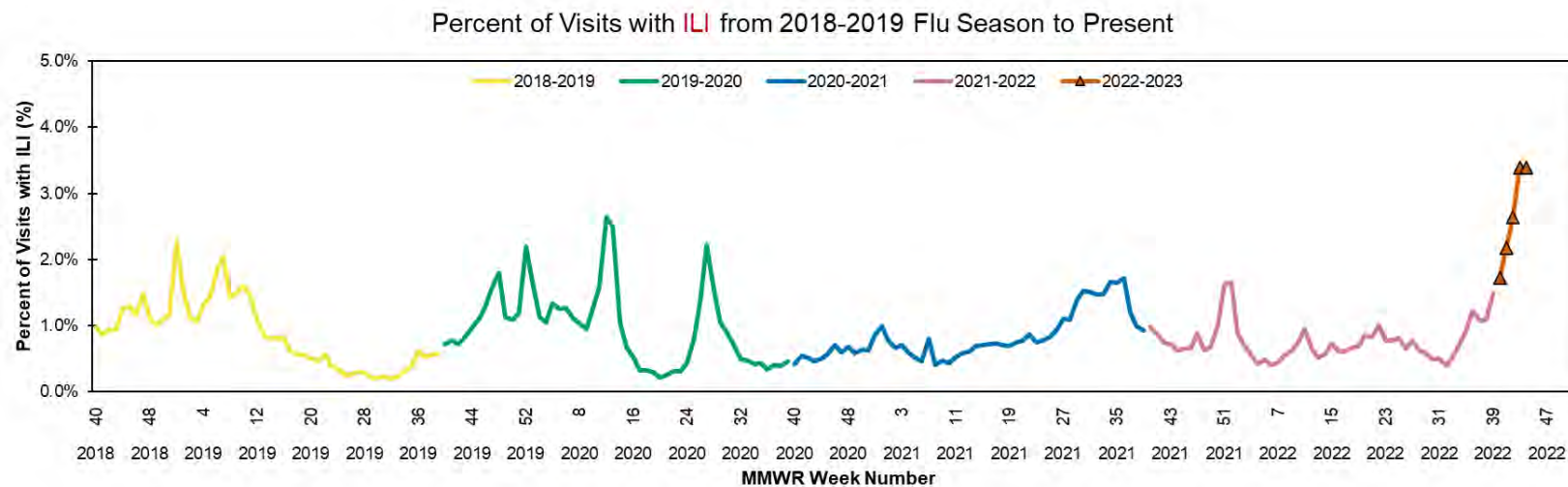
Figure 8. The Weekly Percentage of Visits with ILI (Top) and with Discharge Diagnosed Influenza (Bottom) from 2018-2019 Flu Season to Present.

	Total Visits		ILI Visits		Discharge Diagnosed Influenza Visits	
	#	%	#	%	#	%
Under 5	114,592	30%	3,285	25%	4497	25%
5 to 17	158,336	41%	8,805	68%	11853	67%
18 to 39	64,253	17%	622	5%	1020	6%
40 to 59	24,423	6%	135	1%	229	1%
60 to 79	16,965	4%	98	1%	147	1%
80 plus	5,060	1%	28	0%	45	0%
Total	383,629		12,973		17,791	

Figure 9. For the 2022 to 2023 Flu Season starting MMWR 2022 Week 40 to 2022 Week 44 (October 2nd, 2022 to November 5th, 2022), the Count Breakdown for Total Visits, ILI Visits, and Discharge Diagnosed Influenza Visits by Age Group.

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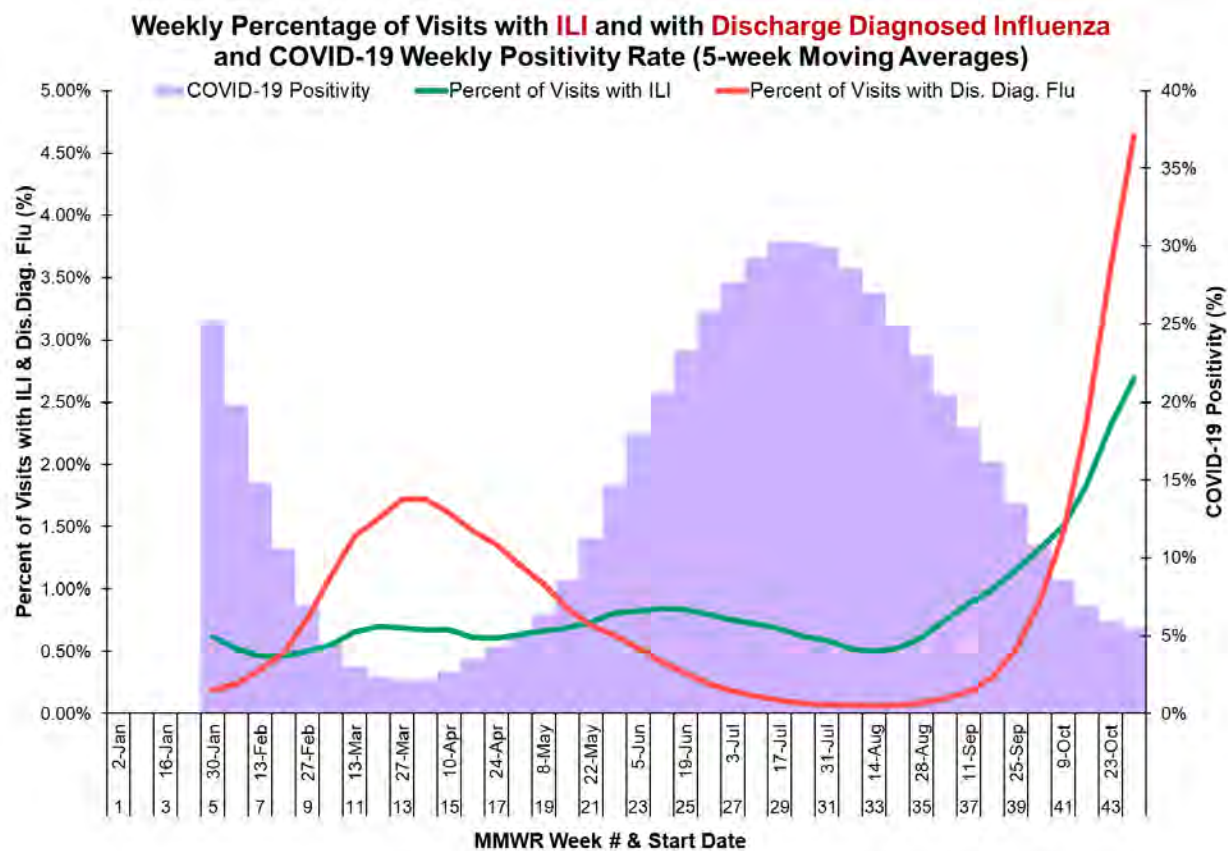
Figure 10. The Weekly Percentage of Visits with ILI and the Weekly Percentage of Visits with Discharge Diagnosed Influenza with the Weekly COVID-19 Positivity Rate.

As seen in Figure 10 and previous figures, the percentage of visits with ILI and the percentage of visits with discharge diagnosed influenza are trending upward, while the COVID-19 positivity rate is trending downward.

NOTE: COVID-19 positivity rate as of 11/10/2022.

The Statewide Positive Influenza Tests for Texas

Statewide Positive Influenza Tests for Texas
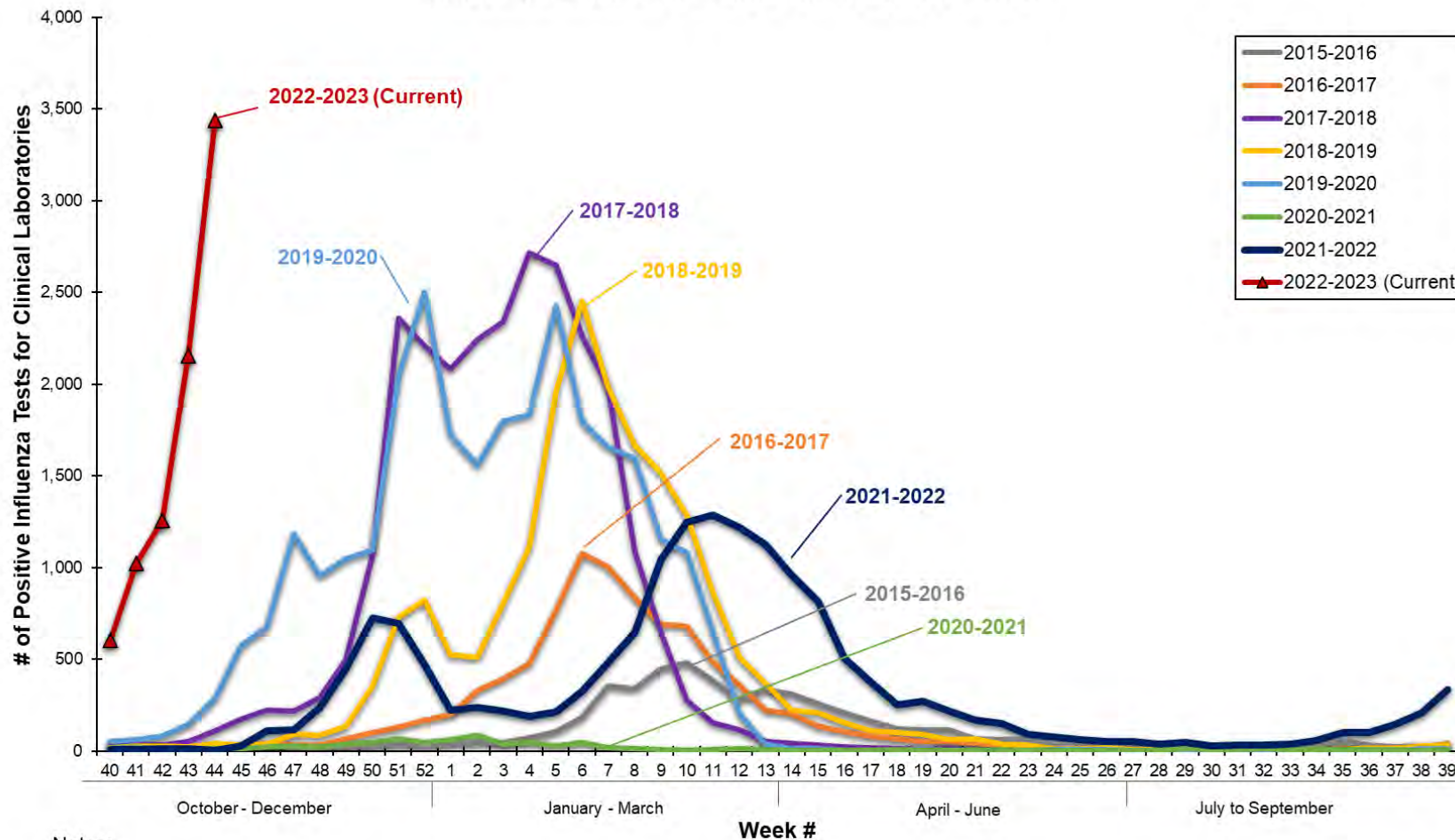
Notes:
1. Source: https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html
2. Months listed on the x-axis are approximate guidelines, as week numbers will correspond to different dates each year.
3. The 53rd week in 2020 is not shown in the figure.
4. Weekly counts for past weeks in the 2021-2022 & current 2022-2023 season are subject to change.

The Wastewater Analysis of Schools: Influenza A

Wastewater Analysis of Schools: Detection of Influenza A

On 10/31/2022 (2022 Week 44), out of the 41 schools sampled for the week:

- **16 schools tested positive for Influenza A**: Barrick El*, Benavidez El*, Berry El*, Chavez HS*, Coop El*, Durkee El*, Energized for Excellence Academy El, Farias Early Childhood Center*, Gregg El*, Hartman Middle*, Henry Middle*, Houston Math Science and Technology Center, Lyons El*, Mistral Center for Early Childhood*, Patterson El, and Roderick R Paige El.
- **5 schools had inconclusive results**: Briscoe El, Edison Middle*, Garcia El*, Rodriguez El*, and Southmayd El*.
- All other schools sampled tested negative.

Note: Wastewater sampling for influenza in schools was suspended during HISD summer break. Sampling resumed the first week of class on 8/22/2022. There are a total 50 schools that can be sampled in a week).

* Indicates the school has tested positive or inconclusive for previous sampled consecutive weeks.

APPENDIX

Data Source: Three main types of visit data from the Southeast Texas Syndromic Surveillance System (HHD-ESSENCE) were used in this analysis: total visits to the facilities, influenza-like illness (ILI) visits, and discharge diagnosed influenza visits. The queries used searched for "ILI" in the Syndrome field and/or Influenza ICD codes in the Discharge Diagnosis field. ILI records are defined by the Chief Complaint field (containing flu-like symptoms, e.g., fever plus cough or sore throat) and could have other non-Influenza cases in the Discharge Diagnosis field (e.g., RSV or COVID). Any record where "Z23" (i.e., "Encounter for immunization") was listed as the only code in Discharge Diagnosis was removed from ILI and Discharge Diagnosed Influenza records. Any record that did not have "Harris" in the county field or one of the 105 city of Houston-associated zip codes in the patient zip code field was removed.

Method:

1. Weekly counts were calculated for ILI and discharge diagnosed influenza facility visits.
2. Weekly counts are shown in figures with a 5-week moving average (average of current week with previous 4 weeks) of the count.
3. The percentage of facility visits with ILI was calculated on a weekly basis:

$$\% \text{ of Visits with ILI (weekly)} = \frac{\# \text{ of visits with ILI in week}}{\# \text{ of visits in week}}$$

4. The percentage of facility visits with discharge diagnosed Influenza was calculated.

$$\% \text{ of Visits with Discharge Diagnosed Influenza (weekly)} = \frac{\# \text{ of visits with Discharge Diagnosed Influenza in week}}{\# \text{ of visits in week}}$$

5. The 5-week moving average of these values was calculated and shown in figures.
6. Other tables and figures show similar values by age group or with respect to average temperature and relative humidity.

For more information on **wastewater sampling in schools**, please see the City of Houston SARS-Cov-2 Wastewater Monitoring Dashboard FAQ, specifically questions 8 and 9 for school-related sampling.
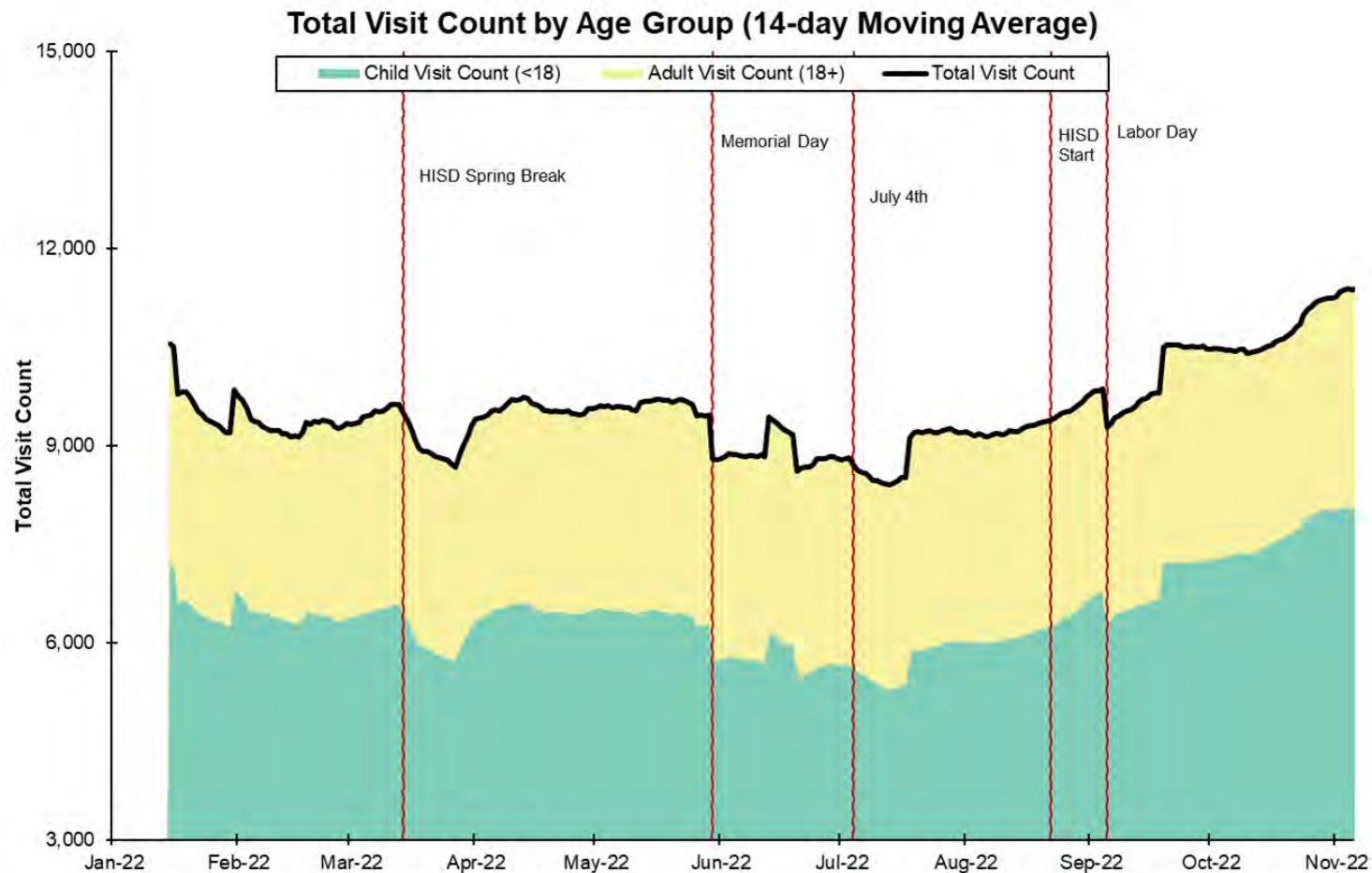
Appendix Figure 1. The Total Visits by Age Group (14-day Moving Averages).

Total daily visit counts have stayed fairly consistent throughout the year, with drops in counts tending to coincide with major events or holidays (e.g., HISD Spring Break, July 4th, and Labor Day). Since September, the daily total visit count is averaging above 10,000 visits a day.

MMWR Week #	2020		2021		2022		2023	
	Start	End	Start	End	Start	End	Start	End
1	12/29/2019	1/4/2020	1/3/2021	1/9/2021	1/2/2022	1/8/2022	1/1/2023	1/7/2023
2	1/5/2020	1/11/2020	1/10/2021	1/16/2021	1/9/2022	1/15/2022	1/8/2023	1/14/2023
3	1/12/2020	1/18/2020	1/17/2021	1/23/2021	1/16/2022	1/22/2022	1/15/2023	1/21/2023
4	1/19/2020	1/25/2020	1/24/2021	1/30/2021	1/23/2022	1/29/2022	1/22/2023	1/28/2023
5	1/26/2020	2/1/2020	1/31/2021	2/6/2021	1/30/2022	2/5/2022	1/29/2023	2/4/2023
6	2/2/2020	2/8/2020	2/7/2021	2/13/2021	2/6/2022	2/12/2022	2/5/2023	2/11/2023
7	2/9/2020	2/15/2020	2/14/2021	2/20/2021	2/13/2022	2/19/2022	2/12/2023	2/18/2023
8	2/16/2020	2/22/2020	2/21/2021	2/27/2021	2/20/2022	2/26/2022	2/19/2023	2/25/2023
9	2/23/2020	2/29/2020	2/28/2021	3/6/2021	2/27/2022	3/5/2022	2/26/2023	3/4/2023
10	3/1/2020	3/7/2020	3/7/2021	3/13/2021	3/6/2022	3/12/2022	3/5/2023	3/11/2023
11	3/8/2020	3/14/2020	3/14/2021	3/20/2021	3/13/2022	3/19/2022	3/12/2023	3/18/2023
12	3/15/2020	3/21/2020	3/21/2021	3/27/2021	3/20/2022	3/26/2022	3/19/2023	3/25/2023
13	3/22/2020	3/28/2020	3/28/2021	4/3/2021	3/27/2022	4/2/2022	3/26/2023	4/1/2023
14	3/29/2020	4/4/2020	4/4/2021	4/10/2021	4/3/2022	4/9/2022	4/2/2023	4/8/2023
15	4/5/2020	4/11/2020	4/11/2021	4/17/2021	4/10/2022	4/16/2022	4/9/2023	4/15/2023
16	4/12/2020	4/18/2020	4/18/2021	4/24/2021	4/17/2022	4/23/2022	4/16/2023	4/22/2023
17	4/19/2020	4/25/2020	4/25/2021	5/1/2021	4/24/2022	4/30/2022	4/23/2023	4/29/2023
18	4/26/2020	5/2/2020	5/2/2021	5/8/2021	5/1/2022	5/7/2022	4/30/2023	5/6/2023
19	5/3/2020	5/9/2020	5/9/2021	5/15/2021	5/8/2022	5/14/2022	5/7/2023	5/13/2023
20	5/10/2020	5/16/2020	5/16/2021	5/22/2021	5/15/2022	5/21/2022	5/14/2023	5/20/2023
21	5/17/2020	5/23/2020	5/23/2021	5/29/2021	5/22/2022	5/28/2022	5/21/2023	5/27/2023
22	5/24/2020	5/30/2020	5/30/2021	6/5/2021	5/29/2022	6/4/2022	5/28/2023	6/3/2023
23	5/31/2020	6/6/2020	6/6/2021	6/12/2021	6/5/2022	6/11/2022	6/4/2023	6/10/2023
24	6/7/2020	6/13/2020	6/13/2021	6/19/2021	6/12/2022	6/18/2022	6/11/2023	6/17/2023
25	6/14/2020	6/20/2020	6/20/2021	6/26/2021	6/19/2022	6/25/2022	6/18/2023	6/24/2023
26	6/21/2020	6/27/2020	6/27/2021	7/3/2021	6/26/2022	7/2/2022	6/25/2023	7/1/2023
27	6/28/2020	7/4/2020	7/4/2021	7/10/2021	7/3/2022	7/9/2022	7/2/2023	7/8/2023

28	7/5/2020	7/11/2020	7/11/2021	7/17/2021	7/10/2022	7/16/2022	7/9/2023	7/15/2023
29	7/12/2020	7/18/2020	7/18/2021	7/24/2021	7/17/2022	7/23/2022	7/16/2023	7/22/2023
30	7/19/2020	7/25/2020	7/25/2021	7/31/2021	7/24/2022	7/30/2022	7/23/2023	7/29/2023
31	7/26/2020	8/1/2020	8/1/2021	8/7/2021	7/31/2022	8/6/2022	7/30/2023	8/5/2023
32	8/2/2020	8/8/2020	8/8/2021	8/14/2021	8/7/2022	8/13/2022	8/6/2023	8/12/2023
33	8/9/2020	8/15/2020	8/15/2021	8/21/2021	8/14/2022	8/20/2022	8/13/2023	8/19/2023
34	8/16/2020	8/22/2020	8/22/2021	8/28/2021	8/21/2022	8/27/2022	8/20/2023	8/26/2023
35	8/23/2020	8/29/2020	8/29/2021	9/4/2021	8/28/2022	9/3/2022	8/27/2023	9/2/2023
36	8/30/2020	9/5/2020	9/5/2021	9/11/2021	9/4/2022	9/10/2022	9/3/2023	9/9/2023
37	9/6/2020	9/12/2020	9/12/2021	9/18/2021	9/11/2022	9/17/2022	9/10/2023	9/16/2023
38	9/13/2020	9/19/2020	9/19/2021	9/25/2021	9/18/2022	9/24/2022	9/17/2023	9/23/2023
39	9/20/2020	9/26/2020	9/26/2021	10/2/2021	9/25/2022	10/1/2022	9/24/2023	9/30/2023
40	9/27/2020	10/3/2020	10/3/2021	10/9/2021	10/2/2022	10/8/2022	10/1/2023	10/7/2023
41	10/4/2020	10/10/2020	10/10/2021	10/16/2021	10/9/2022	10/15/2022	10/8/2023	10/14/2023
42	10/11/2020	10/17/2020	10/17/2021	10/23/2021	10/16/2022	10/22/2022	10/15/2023	10/21/2023
43	10/18/2020	10/24/2020	10/24/2021	10/30/2021	10/23/2022	10/29/2022	10/22/2023	10/28/2023
44	10/25/2020	10/31/2020	10/31/2021	11/6/2021	10/30/2022	11/5/2022	10/29/2023	11/4/2023
45	11/1/2020	11/7/2020	11/7/2021	11/13/2021	11/6/2022	11/12/2022	11/5/2023	11/11/2023
46	11/8/2020	11/14/2020	11/14/2021	11/20/2021	11/13/2022	11/19/2022	11/12/2023	11/18/2023
47	11/15/2020	11/21/2020	11/21/2021	11/27/2021	11/20/2022	11/26/2022	11/19/2023	11/25/2023
48	11/22/2020	11/28/2020	11/28/2021	12/4/2021	11/27/2022	12/3/2022	11/26/2023	12/2/2023
49	11/29/2020	12/5/2020	12/5/2021	12/11/2021	12/4/2022	12/10/2022	12/3/2023	12/9/2023
50	12/6/2020	12/12/2020	12/12/2021	12/18/2021	12/11/2022	12/17/2022	12/10/2023	12/16/2023
51	12/13/2020	12/19/2020	12/19/2021	12/25/2021	12/18/2022	12/24/2022	12/17/2023	12/23/2023
52	12/20/2020	12/26/2020	12/26/2021	1/1/2022	12/25/2022	12/31/2022	12/24/2023	12/30/2023
53	12/27/2020	1/2/2021						