SAN DIEGO COUNTY INFLUENZA SURVEILLANCE

2021-22 SEASON

AS OF WEEK 47 (ENDING 11/27/2021)

LIVE WELL SAN DIEGO

CURRENT UPDATE

Reported Since July 1, 2021

LIVE WELL SAN DIEGO

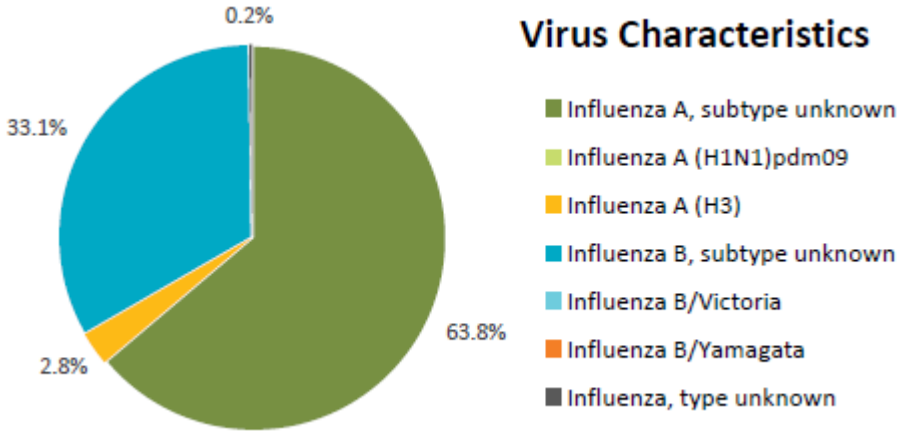
TOTAL REPORTED INFLUENZA CASES

N=423

0 Flu Deaths

0 Pediatric Deaths

0 Outbreaks



Preliminary Results
Data Source: San Diego County Communicable Disease Registry
Prepared by County of San Diego, Health & Human Services Agency, Public Health Services, Epidemiology and Immunization Services Branch

INFLUENZA SURVEILLANCE UPDATE, 2021-22 YTD

Table 1. Influenza Surveillance Indicators.

Indicator	2021-22 Season			2020-21 Season			Prior 5-Year Average*		
	Week 47	Week 46	Total To Date	Week 47	Total To Date	Season Total	Week 47	Total To Date	Season Total
All influenza detections reported (rapid or PCR)	70	42	423	2	30	848	74	401	11,781
Percent of emergency department visits for ILI	3%	4%		3%			4%		
Percent of deaths registered with pneumonia and/or influenza	Not available	11%		8%			6%		
Number of influenza-related outbreaks**	0	0	0	0	0	0	0	2	48
Number of influenza-related deaths reported^	0	0	0	0	0	2	0	2	123

Influenza season is July 1 – June 30, Weeks 27-26. Previous weeks' case counts or percentages may change due to delayed processing or reporting.

*Includes FYs 2016-17, 2017-18, 2018-19, 2019-20, and 2020-21.

**At least one case of laboratory-confirmed influenza in a setting experiencing two or more cases of influenza like illness (ILI) within a 72-hour period.

Total confirmed influenza outbreaks in prior seasons: 34 in 2016-17, 119 in 2017-18, 25 in 2018-19, 61 in 2019-20, and 0 in 2020-21.

^Current FY deaths are shown by week of report; by week of death for prior FYs. Total deaths reported in prior seasons: 87 in 2016-17, 343 in 2017-18, 77 in 2018-19, 108 in 2019-20, and 2 in 2020-21.

Preliminary Results

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INFLUENZA SURVEILLANCE UPDATE, 2021-22 YTD

LIVE WELL SAN DIEGO

Table 2. Influenza Cases by Week Reported, 2021-2022 Season

Positive Test Type/Subtype	Week 47	Week 46	Total to Date	Percent to Date
Influenza A, subtype unknown	65	34	270	63.8%
Influenza A (H1N1)pdm09	0	0	0	0.0%
Influenza A (H3)	1	2	12	2.8%
Influenza B, subtype unknown	4	6	140	33.1%
Influenza B/Victoria	0	0	0	0.0%
Influenza B/Yamagata	0	0	0	0.0%
Influenza, type unknown	0	0	1	0.2%
Total	70	42	423	100.0%

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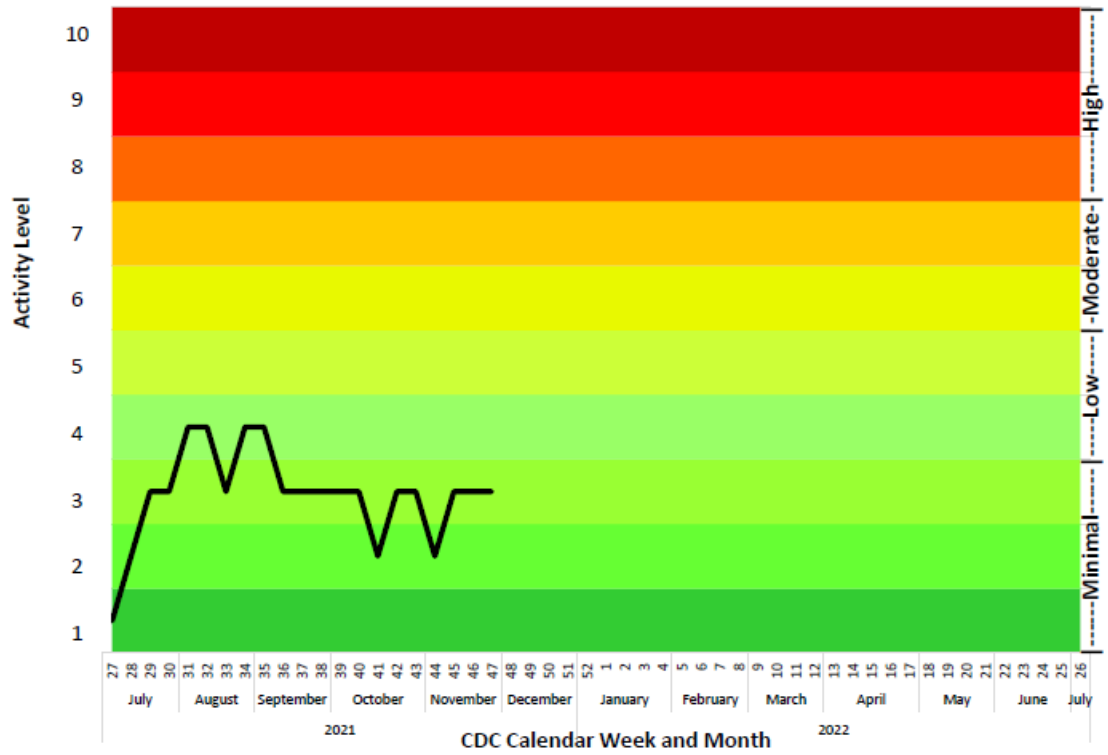
INFLUENZA SURVEILLANCE UPDATE, 2021-22 YTD

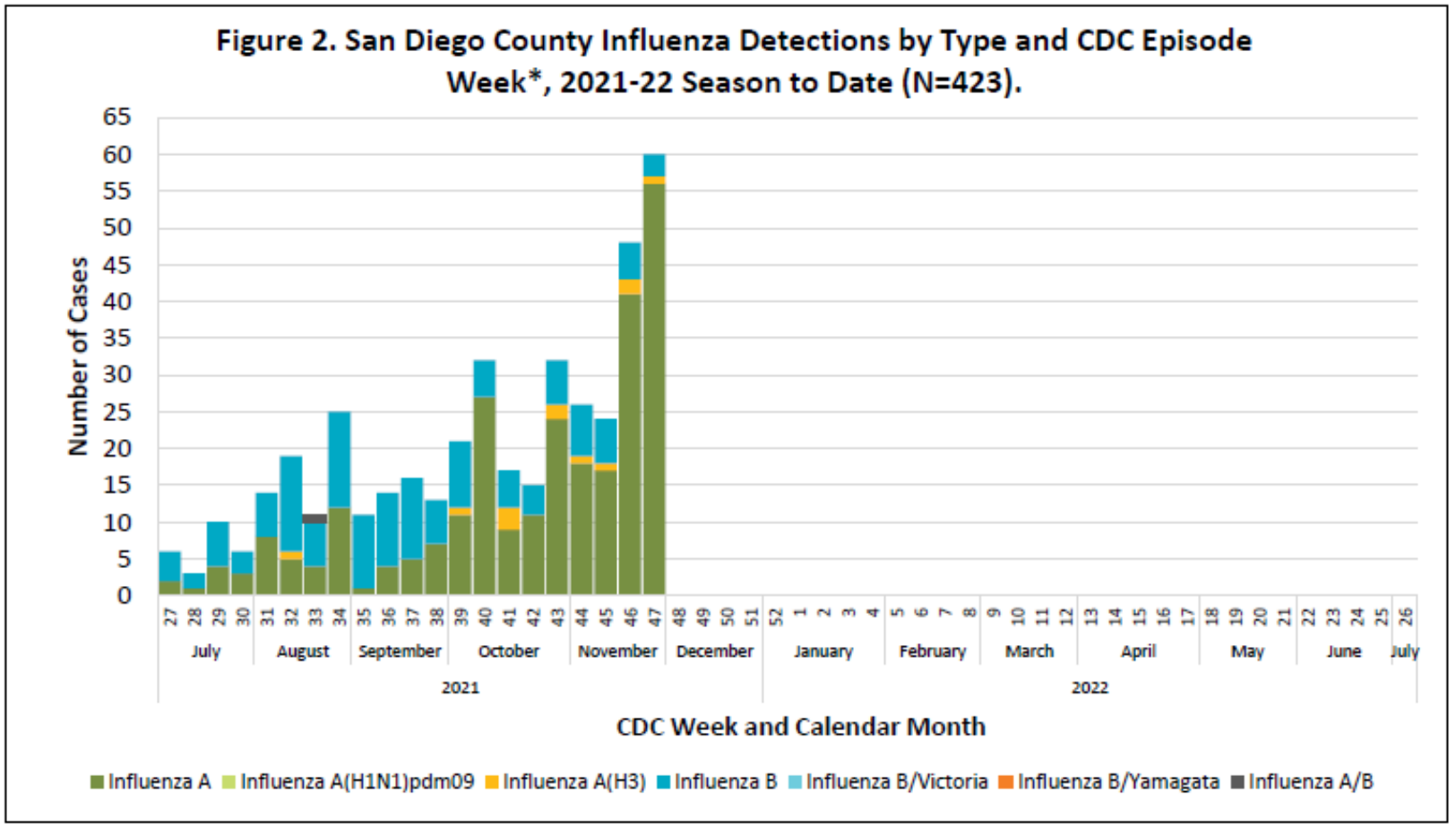
Figure 1. Activity Level of Emergency Department Influenza-Like Illness (ILI), 2021-22 Season to Date.



Legend	Minimal			Low		Moderate		High		
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6	LEVEL 7	LEVEL 8	LEVEL 9	LEVEL 10
	< mean	≥ mean and <1 standard deviation above mean	≥1 and <2 standard deviations above mean	≥2 and <3 standard deviations above mean	≥3 and <4 standard deviations above mean	≥4 and <5 standard deviations above mean	≥5 and <6 standard deviations above mean	≥6 and <7 standard deviations above mean	≥7 and <8 standard deviations above mean	≥8 standard deviations above mean

Preliminary Results
Data Source: Emergency department chief complaint data
Prepared by County of San Diego, Health & Human Services Agency, Public Health Services, Epidemiology and Immunization Services Branch

INFLUENZA SURVEILLANCE UPDATE, 2021-22 YTD



*If case did not have symptoms or illness onset date is unavailable, the earliest of specimen collection date, date of death, or date reported is used instead.

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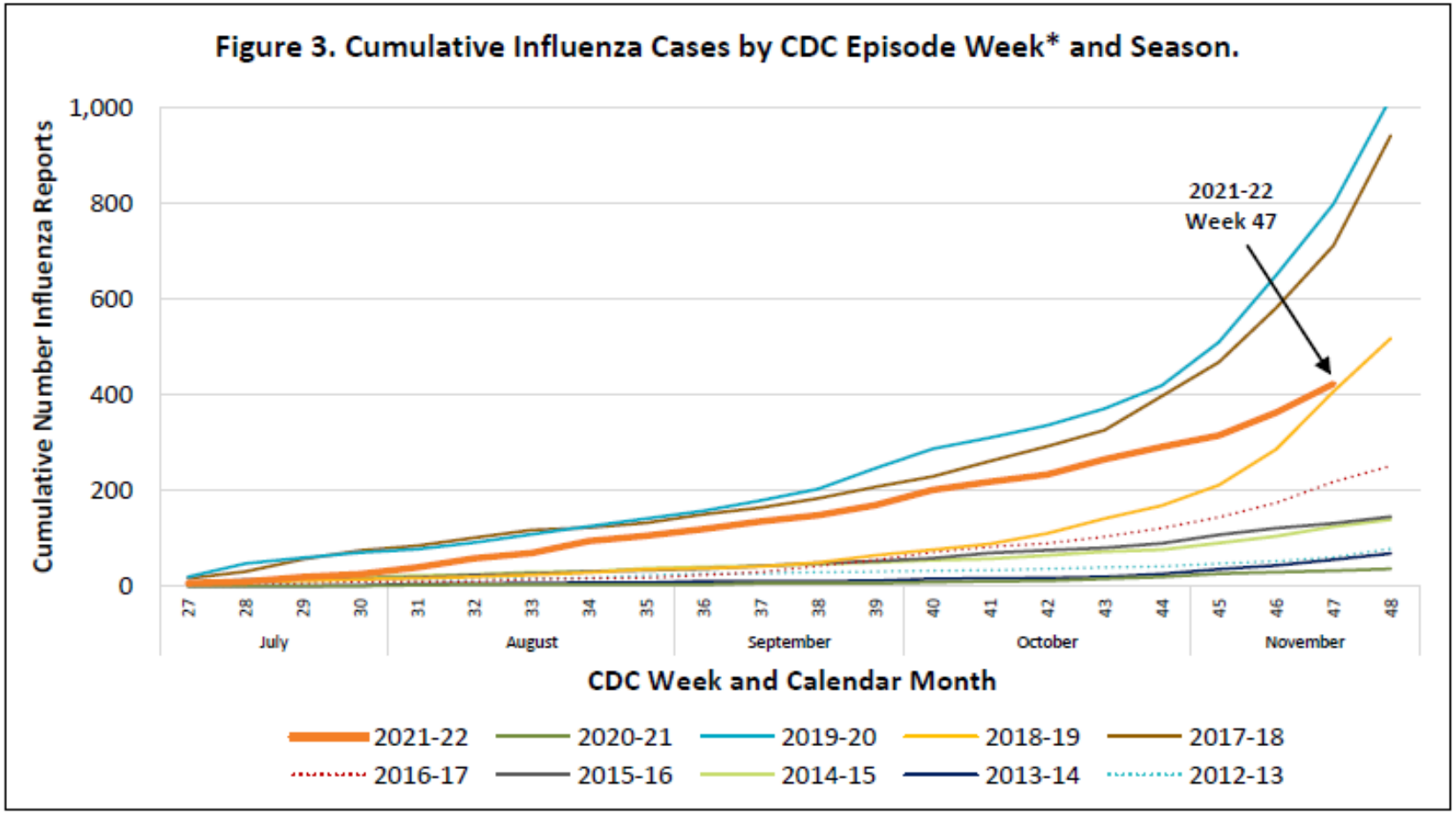

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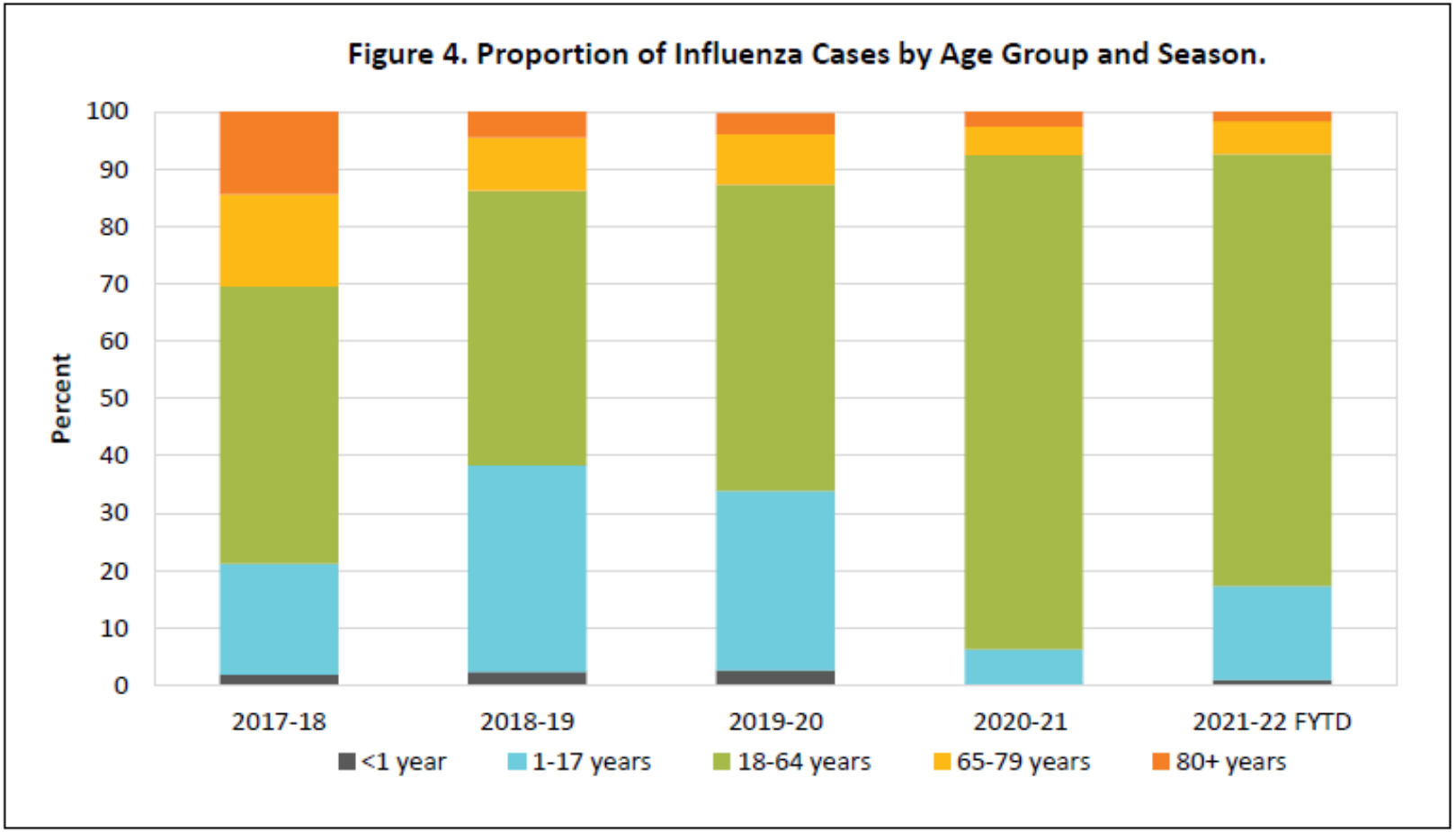

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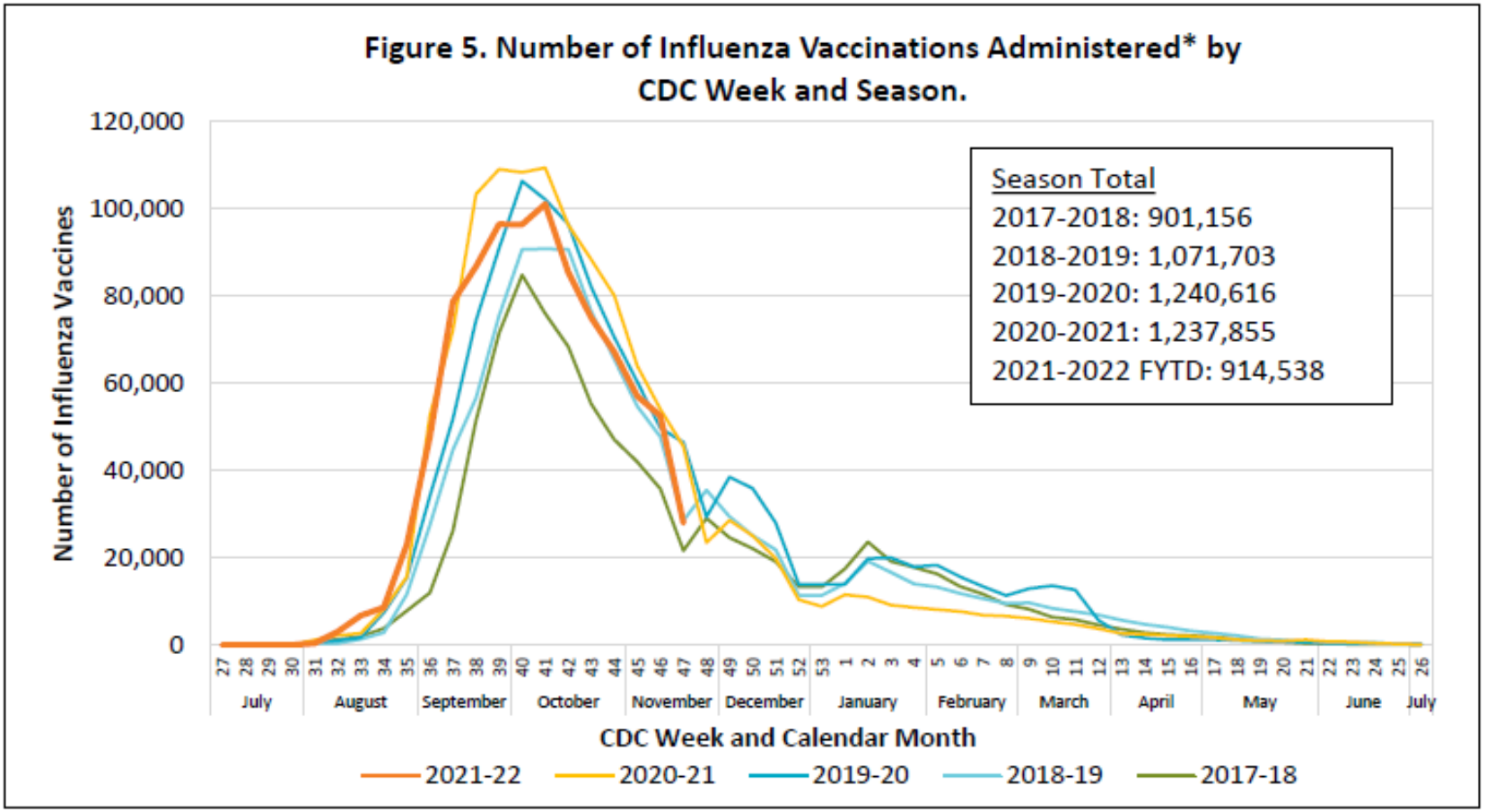
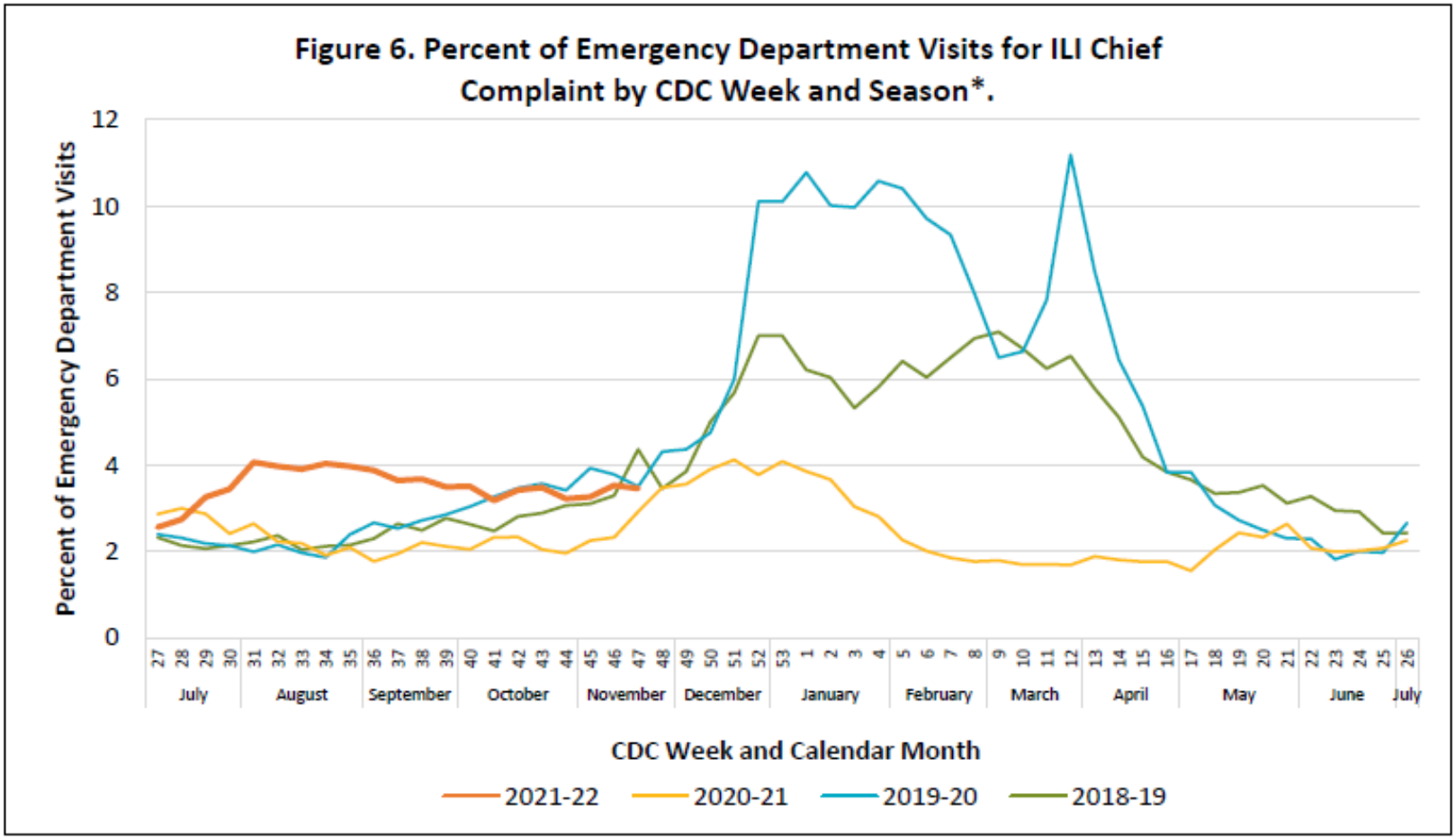


* Influenza vaccinations administered and entered into the San Diego Immunization Registry (SDIR). Week 52 data are repeated for week 53 for seasons that do not include week 53.

Preliminary Results
Data Source: San Diego County Immunization Registry (SDIR)
Prepared by County of San Diego, Health & Human Services Agency, Public Health Services, Epidemiology and Immunization Services Branch

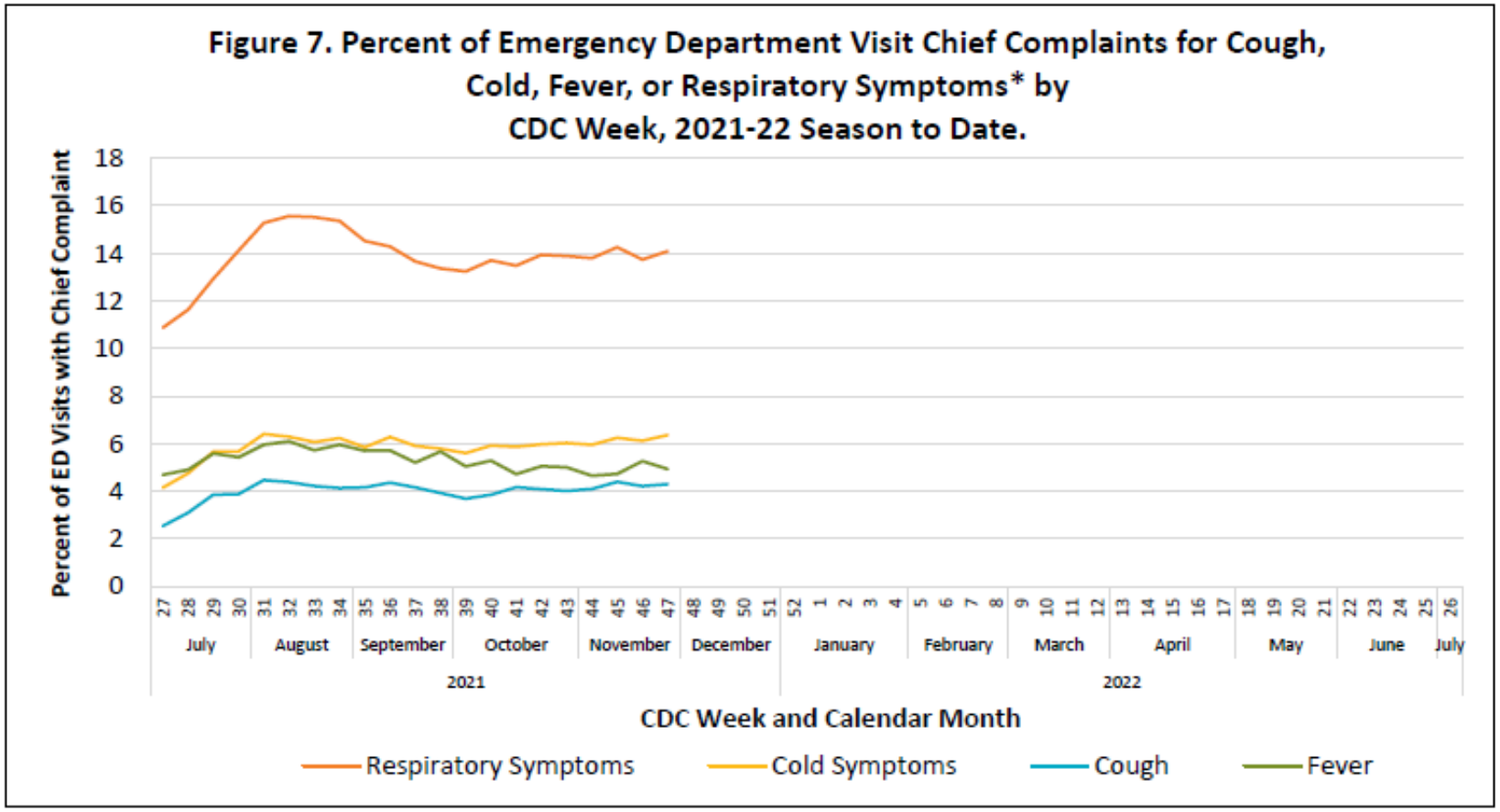
INFLUENZA SURVEILLANCE UPDATE, 2021-22 YTD



* Week 52 data are repeated for week 53 for seasons that do not include week 53.

Preliminary Results
Data Source: Emergency department chief complaint data
Prepared by County of San Diego, Health & Human Services Agency, Public Health Services, Epidemiology and Immunization Services Branch

INFLUENZA SURVEILLANCE UPDATE, 2021-22 YTD



* Respiratory category includes cough, cold symptoms, influenza-like illness, and other respiratory symptoms.

Preliminary Results
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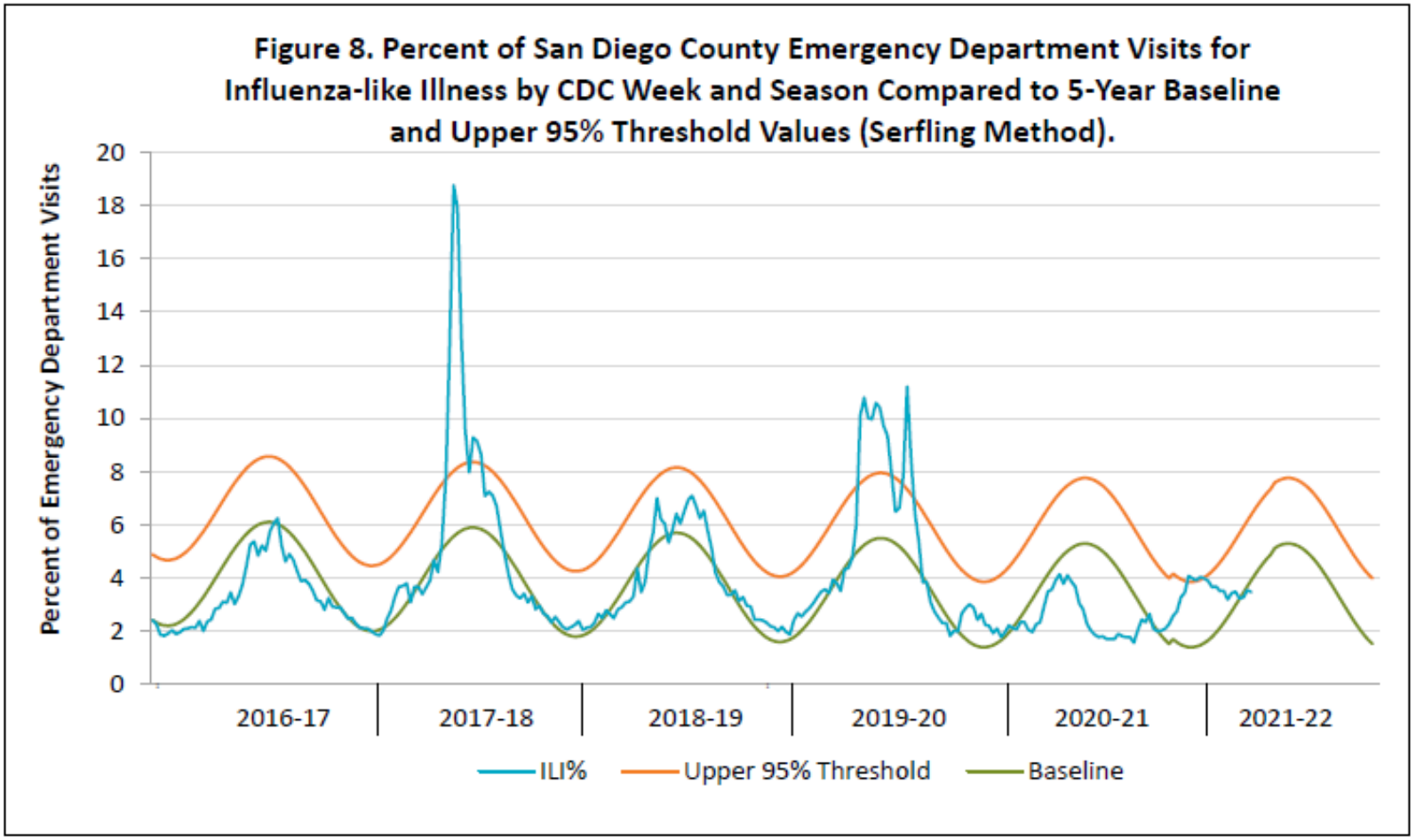

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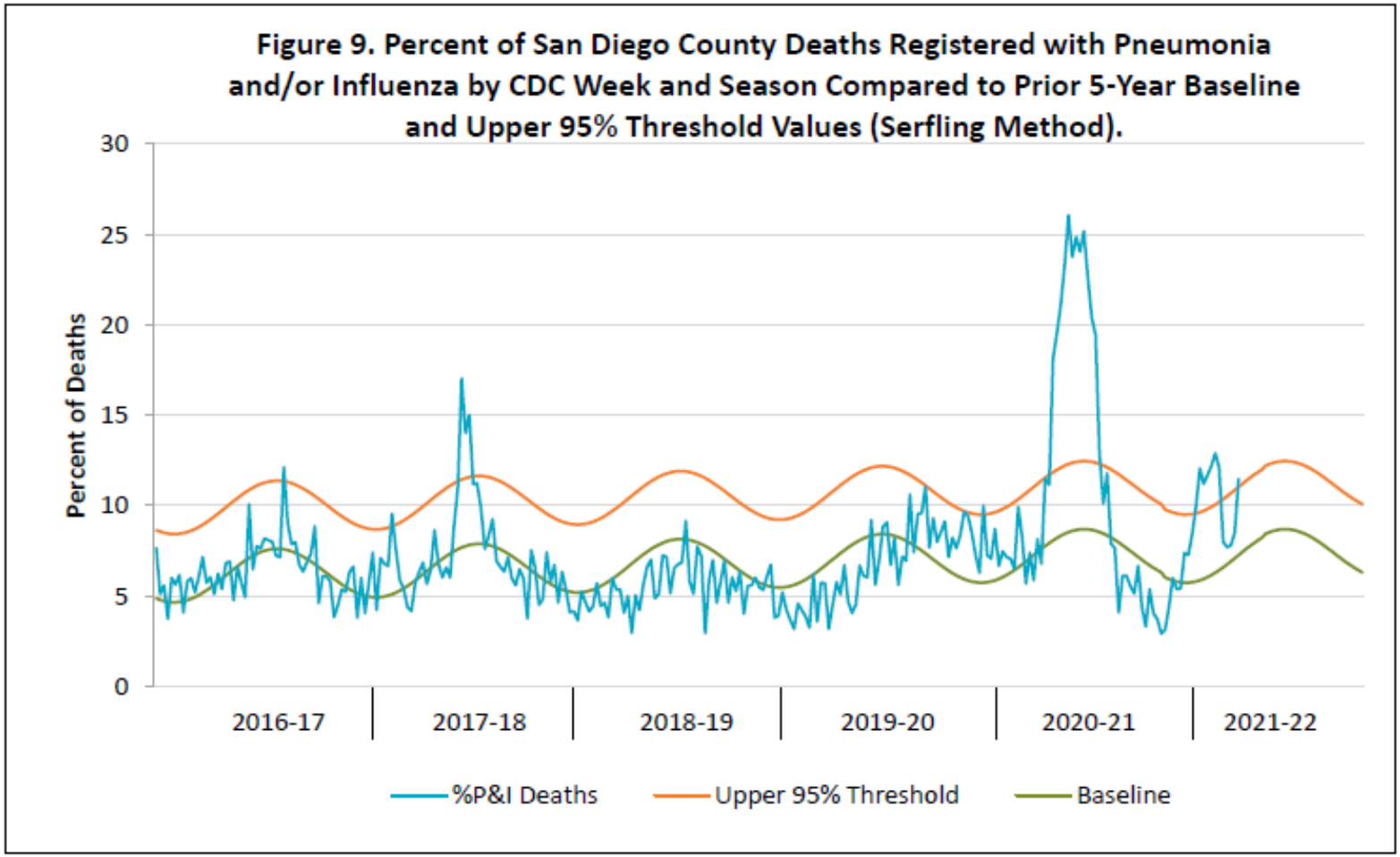

Preliminary Results
Data Source: Vital Records Information System (VRIS)
Prepared by County of San Diego, Health & Human Services Agency, Public Health Services, Epidemiology and Immunization Services Branch

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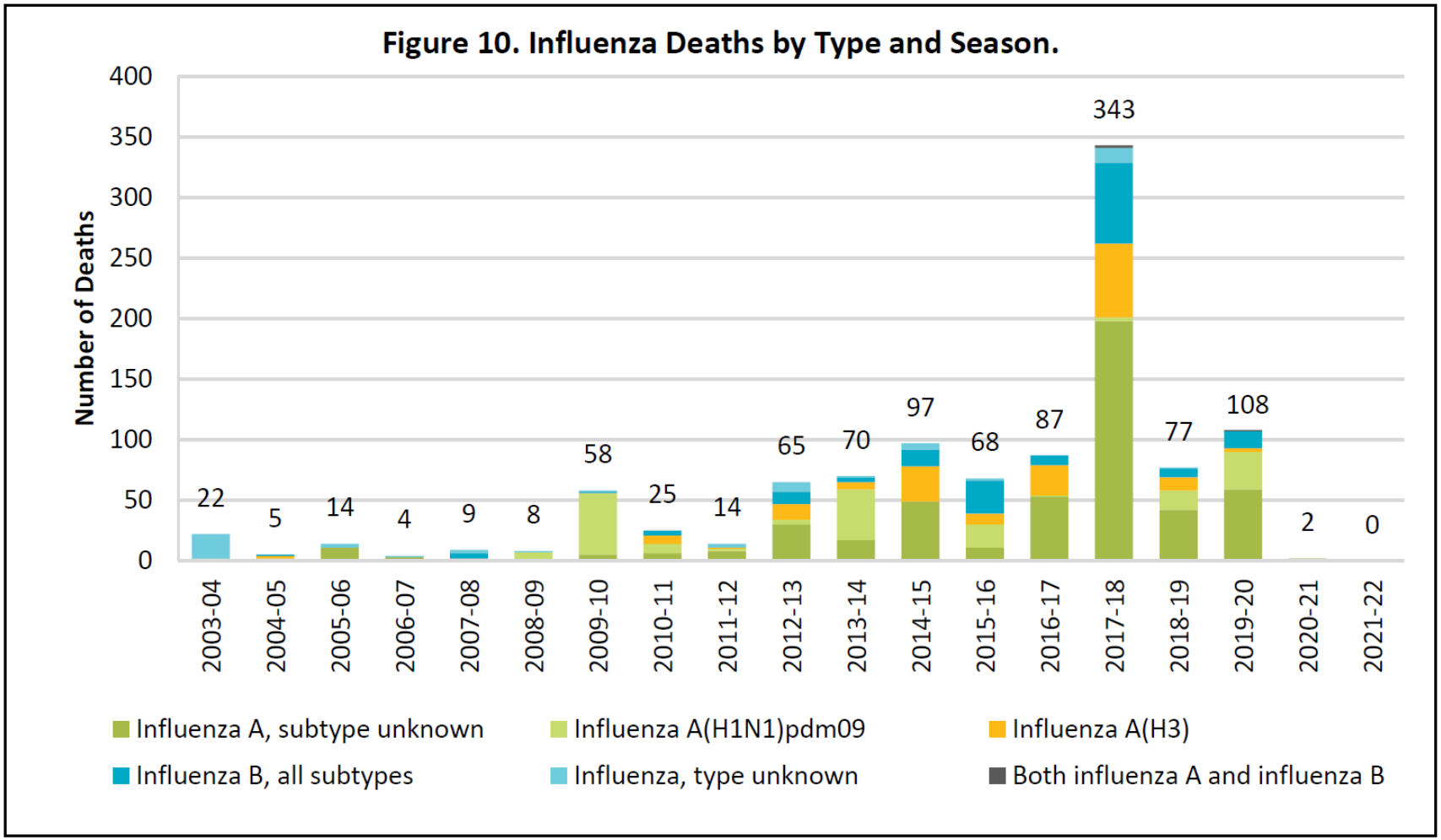

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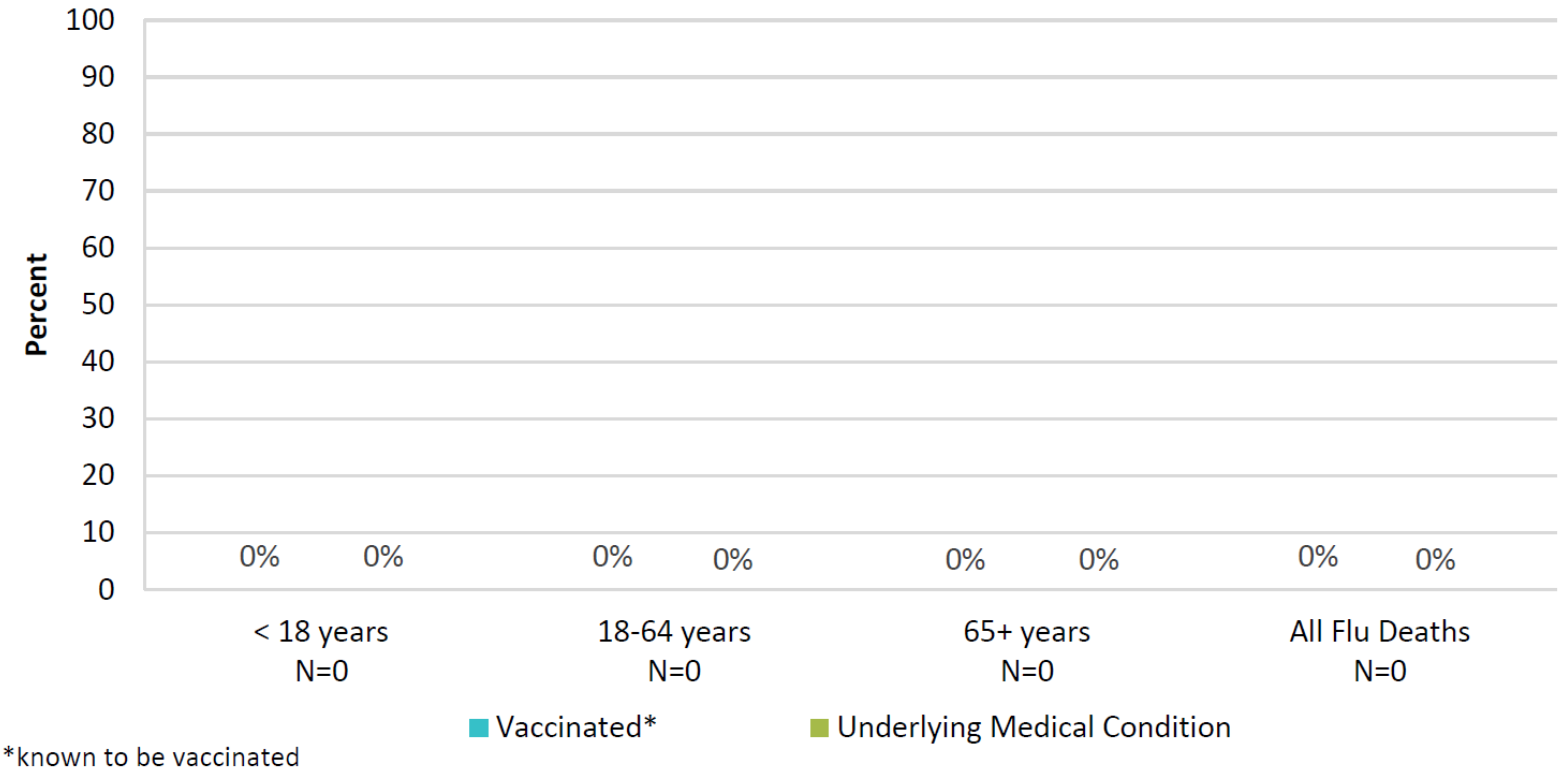
Figure 11. Percent of Influenza Deaths by Age Group, Vaccination Status, and Underlying Medical Condition, 2021-22 Season.



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INFLUENZA SURVEILLANCE UPDATE, 2021-22 YTD

Study Finds Potential Enhanced Benefit of Recombinant Flu Vaccines

A recent study by the Centers for Disease Control and Prevention (CDC) study showed that flu shots made using recombinant technology produced a better antibody response among health care personnel compared with both cell-based and traditional flu shots. The study, conducted during the 2018–2019 flu season, compared antibody responses among health care personal one month and six-months post-vaccination between recombinant influenza vaccines (RIV), cell culture-based inactivated influenza vaccines (ccIIV), and traditional egg-based flu shots (inactivated influenza vaccines [IIV]). The immune responses generated by recombinant vaccine outperformed those of both the cell-based and the standard dose flu vaccines made using traditional egg-based technology. While not definitive, this suggests that vaccine effectiveness may be higher for recombinant flu vaccines.

For decades flu vaccines have been produced by growing flu viruses in eggs. This production technology has some drawbacks, including the fact that growth in eggs can cause mutations in the vaccine viruses that can impact how well the vaccines work. This is particularly relevant in years where A/H3N2 is expected to dominate. Recombinant and cell-based vaccines are produced using a different production process that does not require growth in eggs.

To compare the immune responses produced by RIV and ccIIV, researchers conducted a randomized, open-label trial among health care personnel. Participants were randomized to receive either ccIIV, RIV, or IIV. Serum specimens were collected pre-vaccination, one-month post-vaccination, and six-months post-vaccination, so that researchers could compare whether antibody responses against the vaccine viruses were present among recipients of the different vaccines.

Researchers found no consistent differences in antibody responses between participants that received ccIIV and those who received the egg-based IIV. However, all three vaccine types, egg-based IIV, ccIIV, and RIV, still elicited immune responses against the flu virus strains these vaccines were designed to protect against.

This study is subject to several limitations. Researchers were unable to look at the role of prior vaccination on immune responses because most participants had received annual flu vaccines during all five flu seasons before this study. Also, the study sample may have been subject to selection bias if health care personnel who agreed to participate were more accepting of flu vaccines, and therefore were more likely to get vaccinated.

In addition, this trial focused on antibody-mediated immunity against hemagglutinin (a protein on the surface of influenza viruses) and may not directly translate to differences in protection against flu viruses. Previous trials have demonstrated that recombinant flu vaccines provide better protection than egg-based inactivated influenza vaccines in adults 50 years and older; however, large-scale efficacy trials are needed to understand whether RIV or ccIIV provide more robust protection against flu in younger adults.

These findings support a possible additional benefit from flu vaccination with recombinant flu vaccines. Additional studies are needed to assess whether these findings remain consistent over multiple seasons, with different vaccine virus compositions, and across other markers of immune response. Such studies will also need to assess vaccine benefits against laboratory-confirmed outcomes to minimize bias and ensure accuracy of the findings.