Department of the Navy Influenza Seasonal Summary 2019-2020

The EpiData Center
Reportable, Emerging, and Healthcare Associated Infections Division
Prepared October 2020

NMCPHC-EDC-TR-341-2020

Executive Summary

- This report summarizes influenza activity among Department of the Navy (DON) beneficiaries during the 2019-2020 season.

- Influenza activity during the 2019-2020 season exceeded historical baselines from Week 40 through Week 11 (14 March 2020), similar to overall U.S. trends. This may be attributed the prevailing influenza type B virus early in the season. Influenza type B generally emerges toward the end of the season.

- Beginning in Week 12 (21 March 2020), laboratory-based cases and dispensed antivirals dropped below historical levels potentially due to masking and social distancing practices implemented to combat the COVID-19 pandemic.

- Influenza-like illness (ILI) among patients seen in the emergency department (ED) increased above historical baselines beginning in Week 8 (16 February 2020), possibly as a result of healthcare-seeking behaviors during the COVID-19 pandemic and the overlap between COVID-19-like symptoms and ILI.

- During the 2019-2020 season there was an 82.1% increase in AD and Recruit laboratory-based influenza cases compared to the previous season, most likely due to the overall increase in cases early in the season.

- Consistent with previous seasons, the highest rates of influenza cases were identified among DON beneficiaries under the age of 18 years. Typically, there is a gradual decline in cases among all age groups after Week 12. In contrast, during the 2019-2020 season, a sharp decline in influenza cases occurred after Week 11.

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Methods

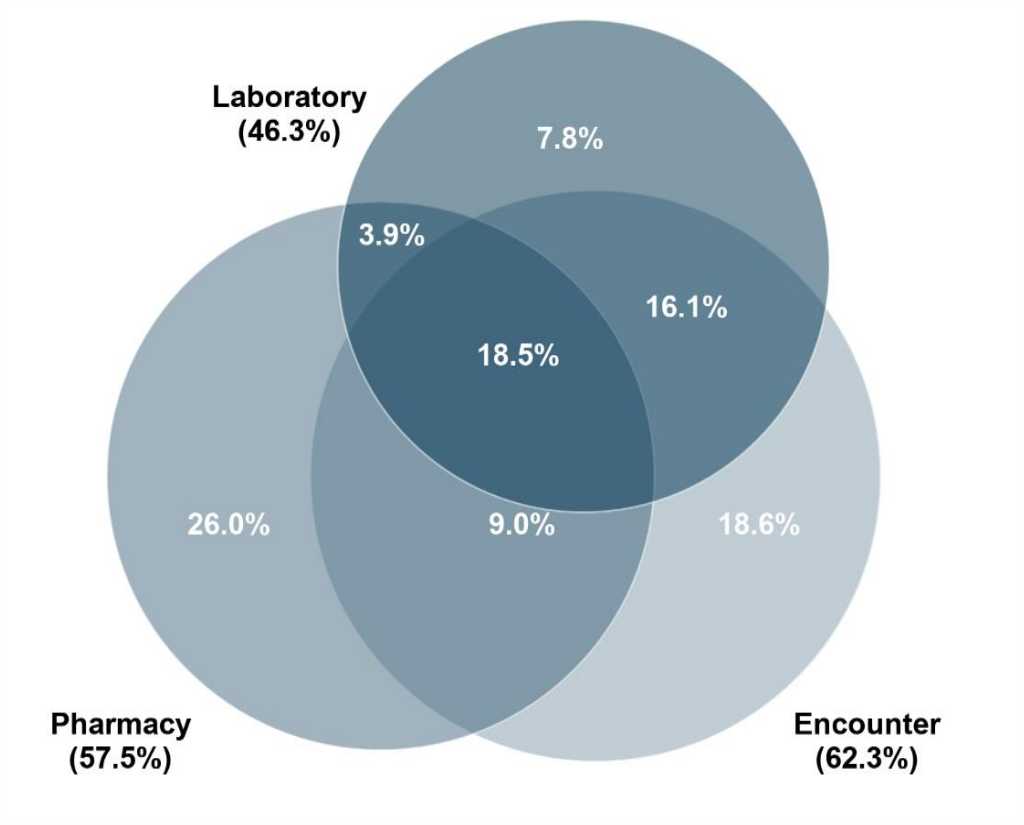
- The EpiData Center (EDC) utilizes laboratory, pharmacy, and encounter data sources when monitoring influenza activity in the DON. The integration of these data sources provides multiple indicators of influenza burden and highlights population behavior and provider practices at differing points during the influenza season.
- An influenza case is defined by the occurrence of a laboratory-positive test result for influenza for a unique individual, or an inpatient or outpatient medical encounter with a specific diagnosis code for influenza, or the prescription of an antiviral for a unique individual. An influenza case is counted when identified in at least one of the data sources. Trends for each data source are described herein. A 14-day gap-in-care criterion is used in laboratory and pharmacy encounter data to identify duplicate cases.
- Detailed methods for the 2019–2020 Influenza Situation Report (SITREP) methods can be found at: https://www.med.navy.mil/sites/nmcphc/Documents/epi-data-center/NMCPHC-EDC-TR-507-2019.pdf
- Data from the following medical treatment facilities (MTFs) were not captured due to transition to Military Health System (MHS) GENESIS: Naval Health (NH) Clinic Oak Harbor, Bremerton, and Lemoore; Army Medical Center (AMC) Madigan and Army Health Clinic (AHC) Monterey; and Fairchild, Mt. Home, and Travis Air Force Base (AFB).

Overall Influenza Burden

BLUF:

During the 2019-2020 influenza season, 19,030 influenza cases were identified among 18,759 DON beneficiaries from laboratory, pharmacy, and encounter (inpatient and outpatient) data sources, indicating a 30.3% increase from the 2018-2019 season.

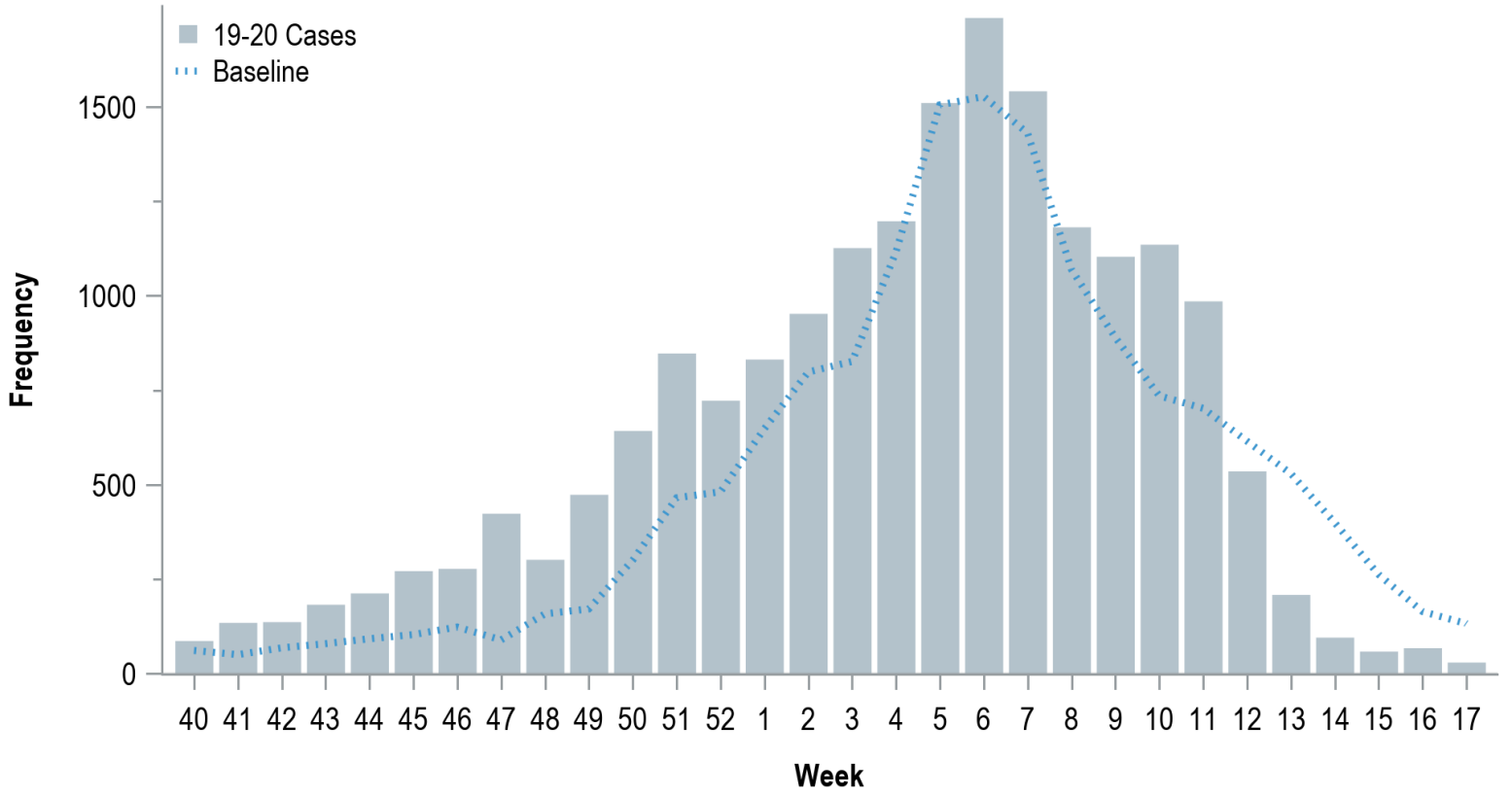
DON Influenza Cases by Data Source, 2019-2020 Season (*n* = 19,030)



Data sources: HL7-formatted CHCS chemistry, microbiology, and pharmacy databases, SIDR, and CAPER.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

- 3,527 cases (18.5%) were identified in laboratory, pharmacy, and encounter data sources.
- Cases most frequently had an encounter record with an influenza diagnosis (11,863; 62.3%).
- Almost half (46.3%) of all cases had a corresponding positive laboratory result.
- Utilization of three data sources provides more robust surveillance than one data source alone.
- The percentage of cases identified in each data source are similar from season to season and are a reflection of clinical practices. During Week 40, 60.7% of cases were identified in encounter records, 59.5% in pharmacy records and 42.9% in laboratory records. By Week 17, this trend was reversed with 82.8% of all cases identified in laboratory records, 72.4% in encounter records, and 10.3% in pharmacy records.

Weekly Distribution of Influenza Cases from Laboratory, Pharmacy, and Encounter Data Compared to Baseline, 2019-2020 (*n* = 19,030)



- The frequency of influenza cases was above the three-year baseline through Week 11.
- The highest burden of weekly cases was observed during Week 6, 13.6% above the baseline.
- The case count fell below the baseline from Week 12 through the end of the season, most likely due to social distancing and masking policies implemented due to COVID-19.

Baseline calculated as the average of the number of laboratory-positive, pharmacy, and encounter influenza cases in 2016-2017, 2017-2018, and 2018-2019 influenza seasons.
Data sources: HL7-formatted CHCS chemistry, microbiology, and pharmacy databases, SIDR, and CAPER.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

Demographic Characteristics of Influenza Cases Among DON Beneficiaries from All Sources, 2019-2020 (*n* = 18,759*)

Demographic	Frequency (%)
Sex	
Male	10,191 (54.3%)
Female	8,567 (45.7%)
Unknown	1 (0.00%)
Age Group	
0-4	2,386 (12.7%)
5-17	4,660 (24.8%)
18-44	8,528 (45.5%)
45+	3,184 (17.0%)
Unknown	1 (0.00%)
Beneficiary Category	
Active Duty	5,210 (27.8%)
Recruit	645 (3.4%)
Spouse	3,553 (18.9%)
Child	7,383 (39.5%)
Other: Sponsor	1,956 (10.5%)
Other: Nonsponsor	12 (0.06%)

Data sources: HL7-formatted CHCS chemistry, microbiology, pharmacy, and Comprehensive Ambulatory Professional Encounter Records databases.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

- Slightly more influenza cases were identified among males than females (54.3%).
- Most influenza cases were identified among those ages 18-44 (45.5%).
- Children (aged <18 years) comprised the largest beneficiary category of influenza cases (39.4%). Due to the nature of the beneficiary classifications, the totals for children will not add up to the age groups for children.

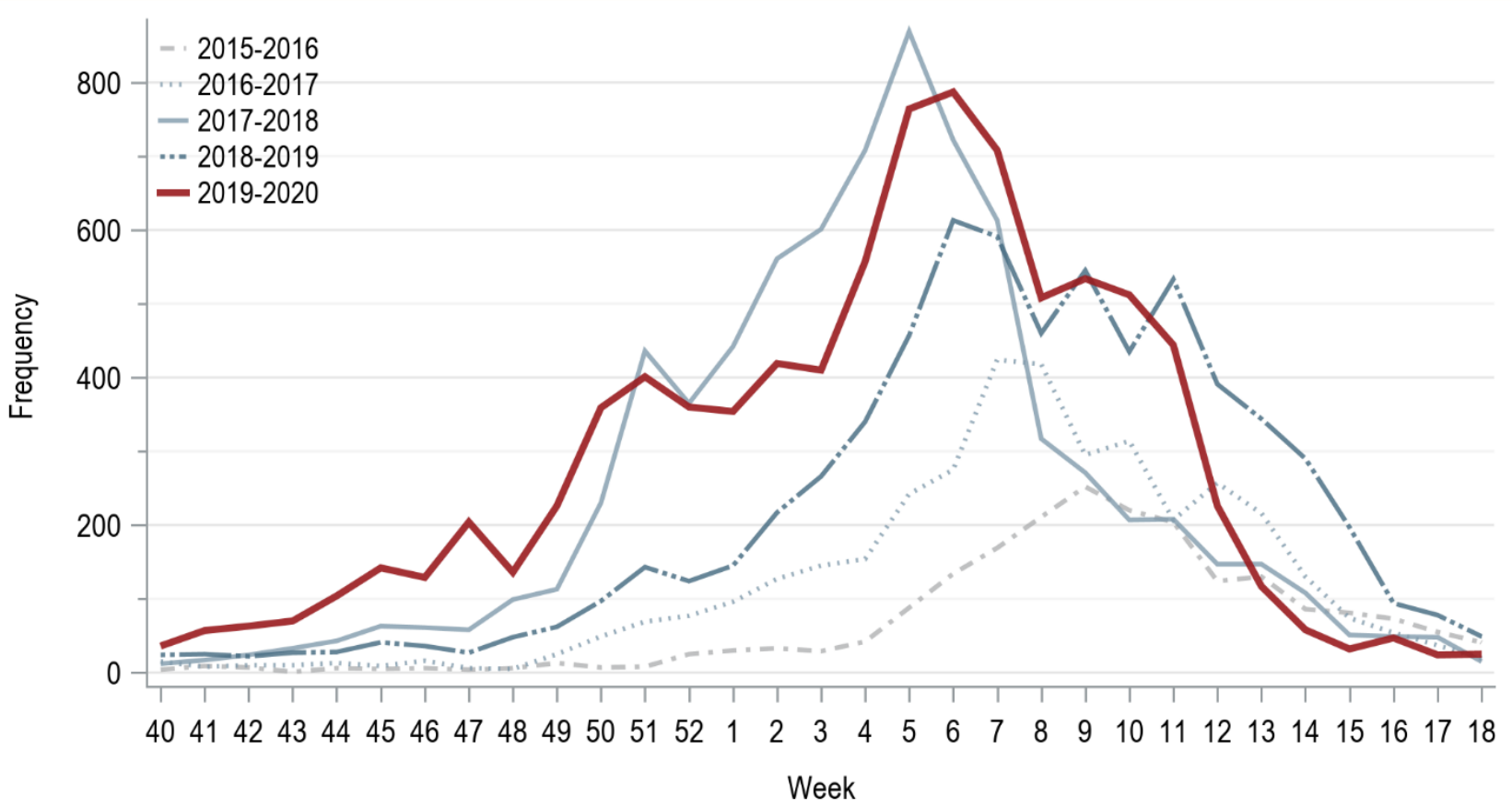
*n=unique individuals

Laboratory-Based Influenza Cases

BLUF:

Overall, the frequency of laboratory-based influenza cases (*n* = 8,813) during the 2019-2020 season increased 30.9% over the prior season. The highest burden of laboratory-based influenza cases were identified prior to Week 6, when the burden of cases dropped below historic baselines.

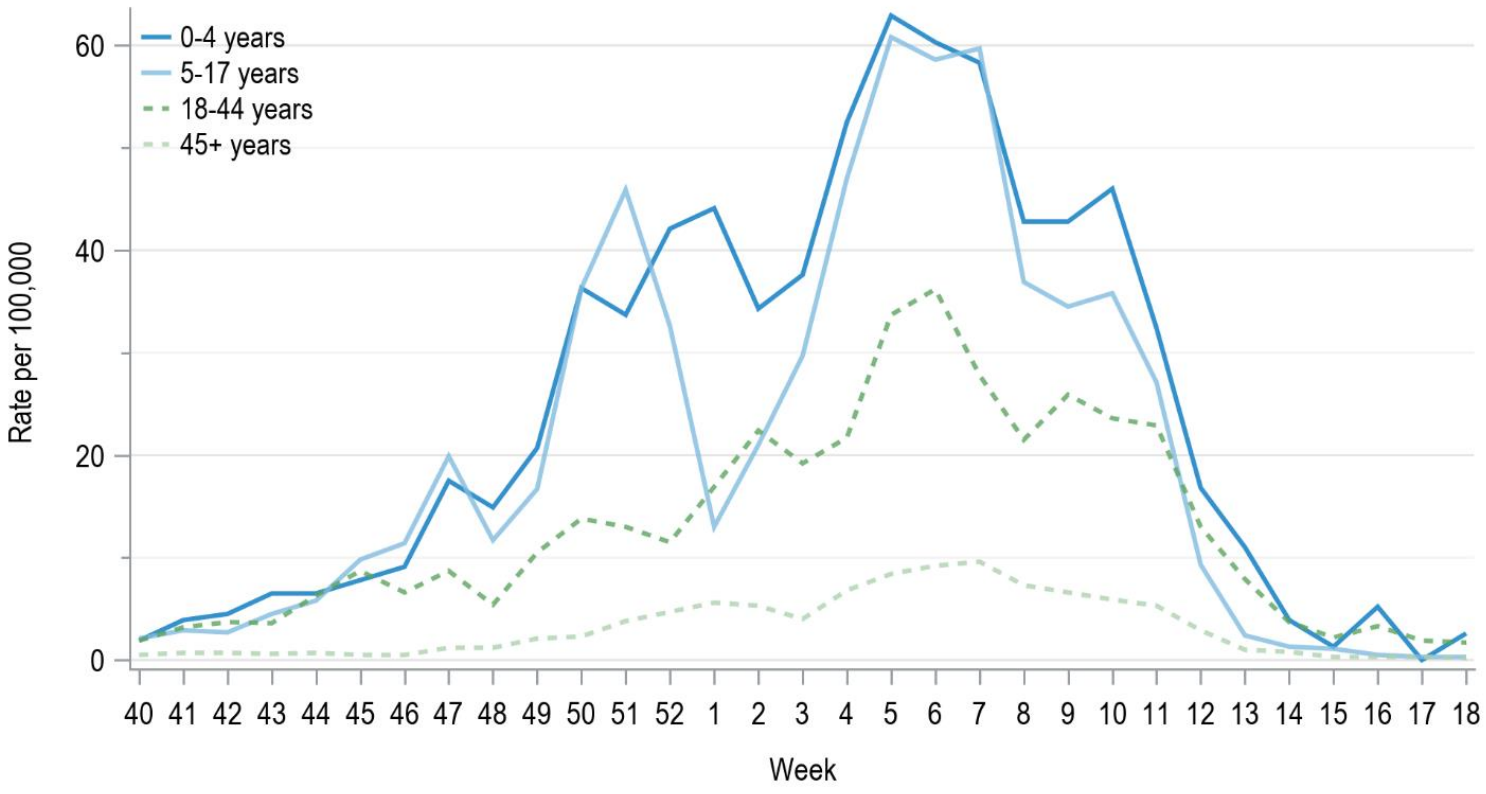
Weekly Distribution of Laboratory-Based Influenza Cases among DON Beneficiaries Compared to the Previous Four Seasons



- Compared to the previous four seasons, the current season had the highest frequency of laboratory-based cases through Week 50.
- The number of cases during the 2019-2020 season dropped below historic trends by Week 15, likely due to the implementation of social distancing and masking for the prevention of COVID-19.

Data sources: HL7-formatted CHCS chemistry and microbiology databases.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

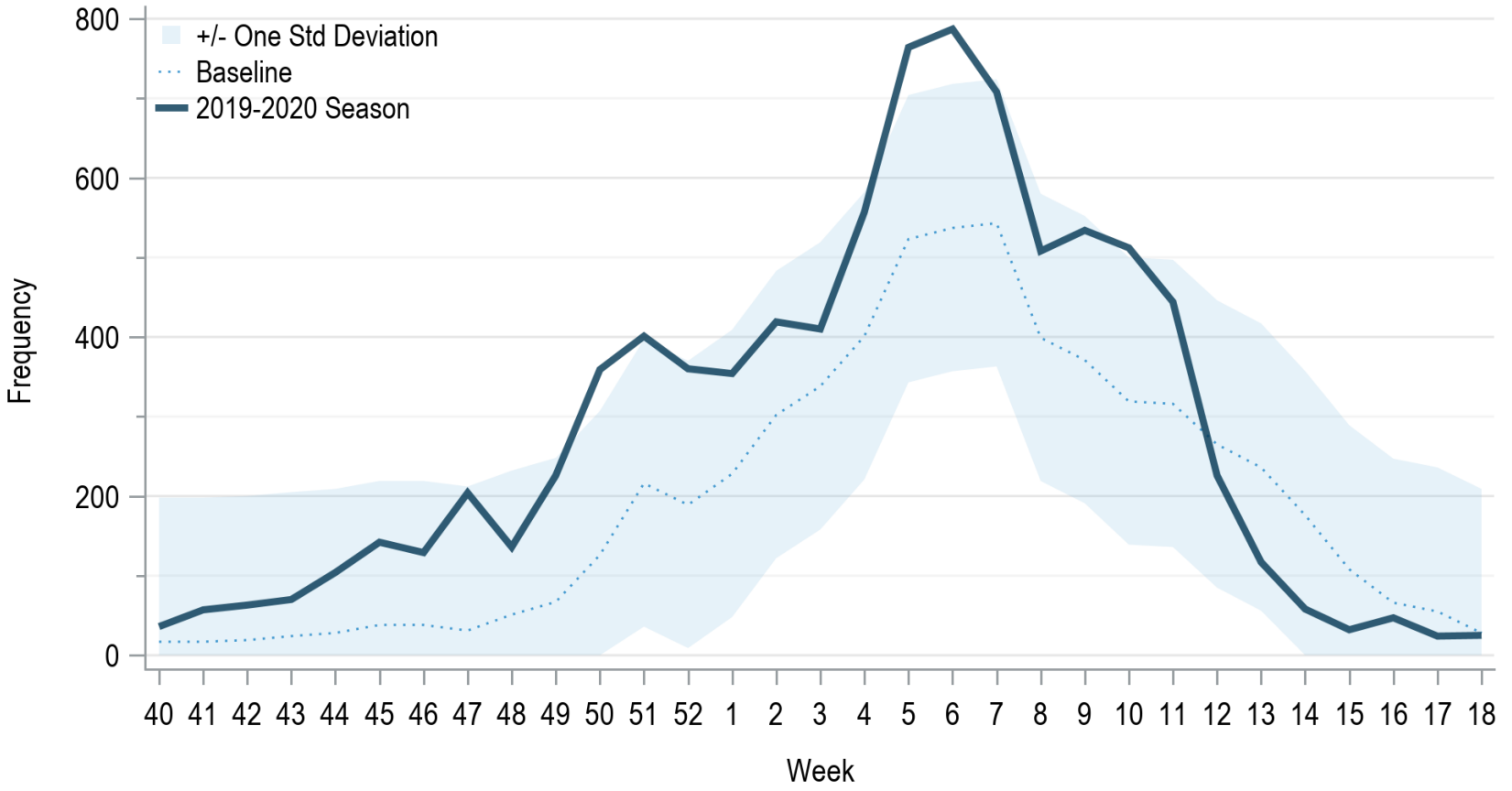
Age Distribution of Laboratory-Based Influenza Cases among DON Beneficiaries by Week, 2019-2020 Season (*n* = 8,813)



Rate is calculated as the number of laboratory-positive cases in that group per 100,000 population.
Data sources: HL7-formatted CHCS chemistry and microbiology databases.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

- Almost half, 40.7%, of laboratory-based cases were identified among children ages 5-17 years (*n* = 2,418) and children ages 0-4 years (n = 1,173).
- Laboratory-based trends were similar across all age groups. A decline in rates of laboratory-based cases is observed after Week 11, similar to previous seasons. However, during the 2019-2020 season this decline is less gradual than in previous seasons.
- The rate of cases among 5-17 year olds declined during Week 1, which is consistent with the previous season. This decline may be associated with the winter break, resulting in low transmission among this age group. The sharp decline in cases after Week 11, which was not observed in the previous season, may be attributed to protective measures implemented due to the COVID-19 pandemic.

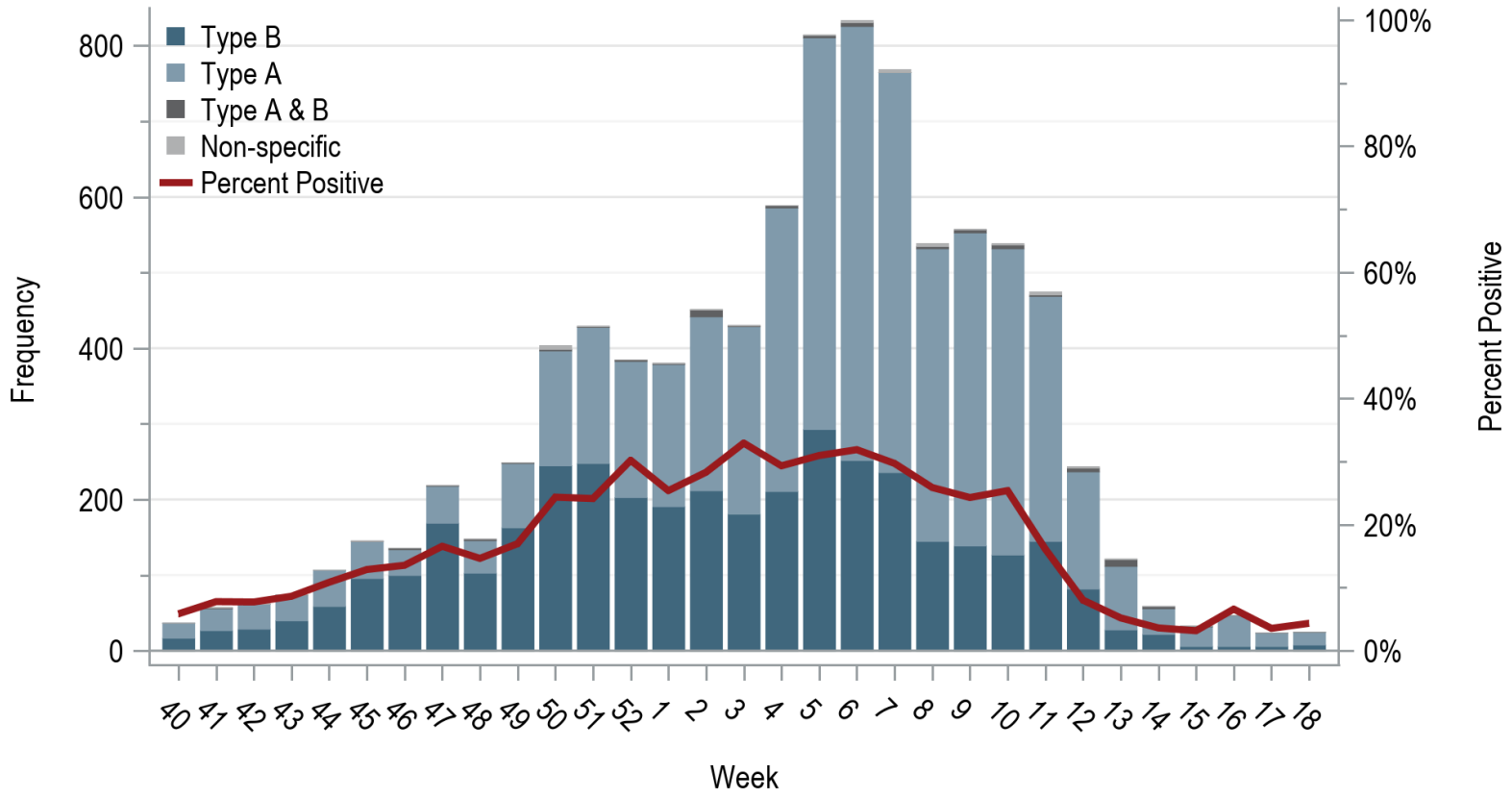
Weekly Distribution of Laboratory-Based Influenza Cases by Week Compared to Seasonal Baseline, DON Beneficiaries 2019-2020 (*n* = 8,813)



- Overall, the frequency of laboratory-based influenza cases during the 2019-2020 season was within one standard deviation of the seasonal baseline except during Weeks 50, 5, and 6. This suggests that weekly laboratory-based influenza cases were not substantially different from the previous seasons.

Baseline calculated as the average of the number of laboratory-positive pharmacy and encounter influenza cases in 2016-2017, 2017-2018, and 2018-2019 influenza seasons.
Data sources: HL7-formatted CHCS chemistry and microbiology databases.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

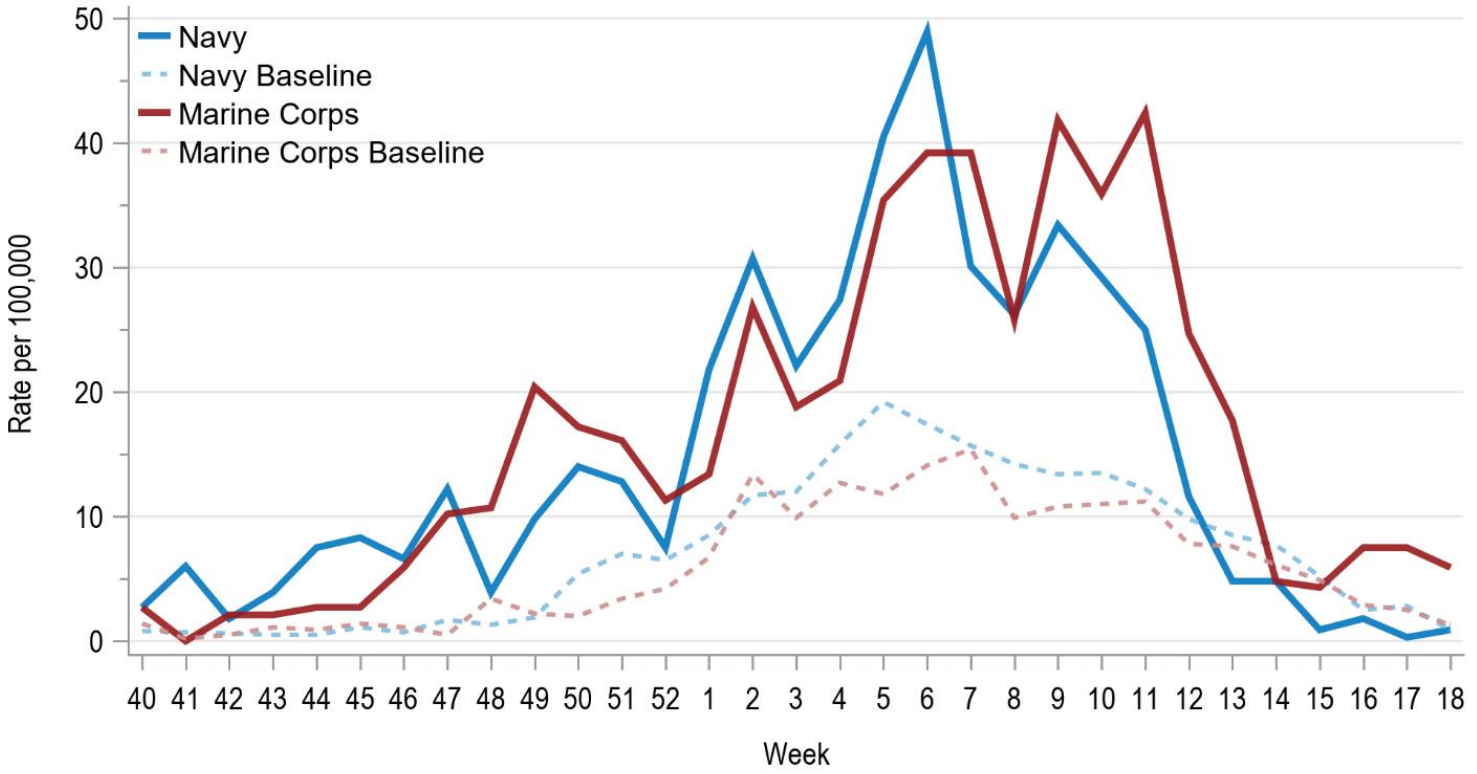
Weekly Distribution of Laboratory-Based Influenza Cases by Type, 2019-2020 Season (*n* = 8,813)



- Contrary to previous seasons, influenza B was the predominant flu type early in the season (from Week 43 through Week 1).
- During the entire 2019-2020 season, influenza A accounted for 58.7% of laboratory cases compared to 93.5% in the previous season.
- Among DON laboratory-based influenza cases, the highest percent positivity was during Week 3 (32.9%). The peak may indicate the highest disease transmission and burden among DON beneficiaries.

Note: Percent positive is calculated as the proportion of positive specimens from all unique specimens with conclusive results.
Data sources: HL7-formatted CHCS chemistry and microbiology databases.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

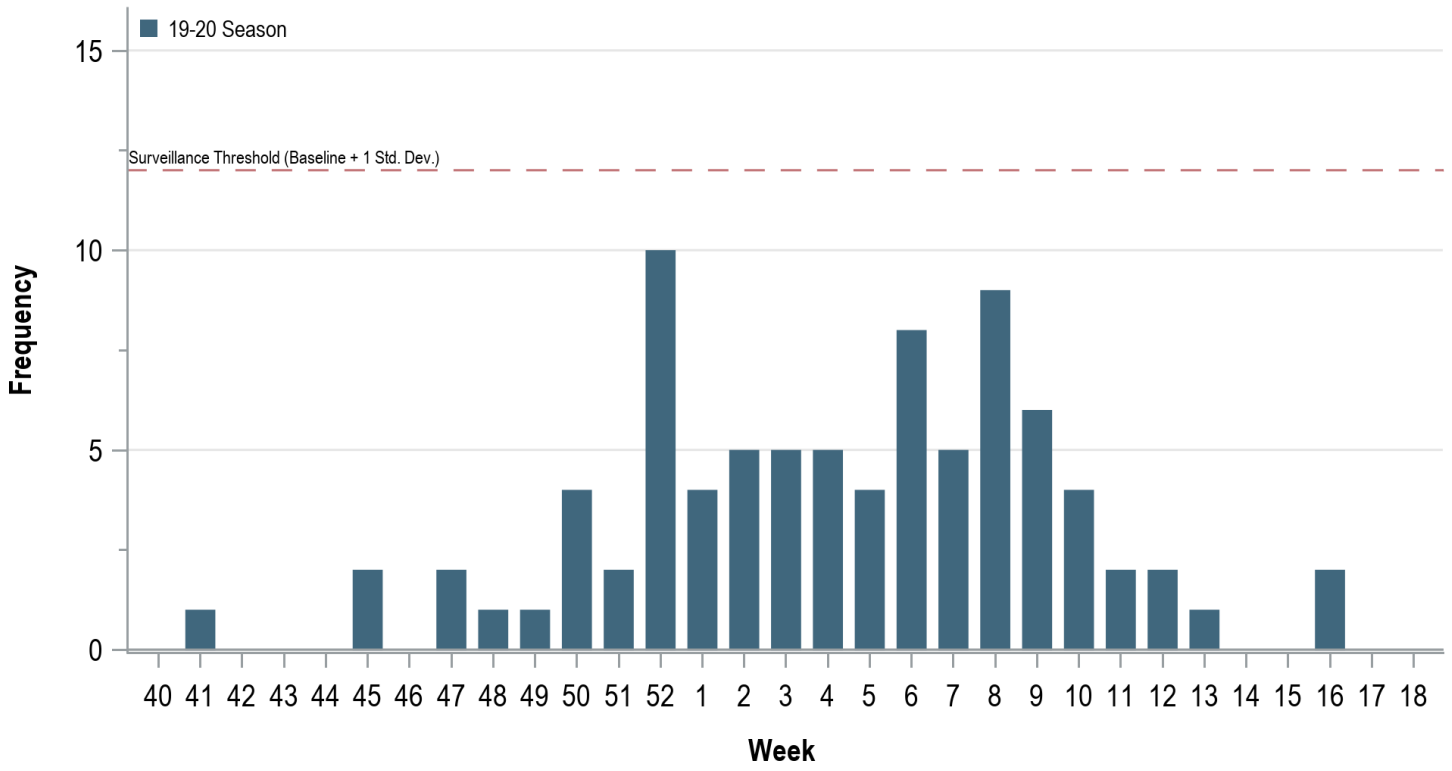
Service Distribution of DON Active Duty and Recruit Laboratory-Based Influenza Cases by Week, 2019-2020 Season (*n* = 3,756)



Baseline calculated as the unweighted average of the number of laboratory-positive influenza cases in 2016-2017, 2017-2018, and 2018-2019 seasons.
Data sources: HL7-formatted CHCS chemistry and microbiology databases.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

- During the 2019-2020 season there was an 82.1% increase in AD and Recruit laboratory-based influenza cases compared to the previous season.
- This season, the peak rate of Navy AD and Recruit laboratory-based cases was 48.9 per 100,000 Sailors compared to 25.5 during the previous season.
- This season, the peak rate of Marine Corps laboratory-based cases was 42.4 per 100,000 Marines compared to 25.4 during the previous season.
- The sharp decline in laboratory-based cases after Week 11 may be attributed to prevention protocols mandated due to the COVID-19 pandemic.

Weekly Distribution of Hospitalized Laboratory-Based Influenza Cases among DON Beneficiaries, 2019-2020 Season (*n* = 85)



- Less than 1.0% of all laboratory-based-cases were identified in the inpatient setting, similar to the 2018-2019 season (1.2%).
- Frequencies of inpatient laboratory-positive influenza cases did not reach the surveillance threshold during the season, indicating a low severity season.

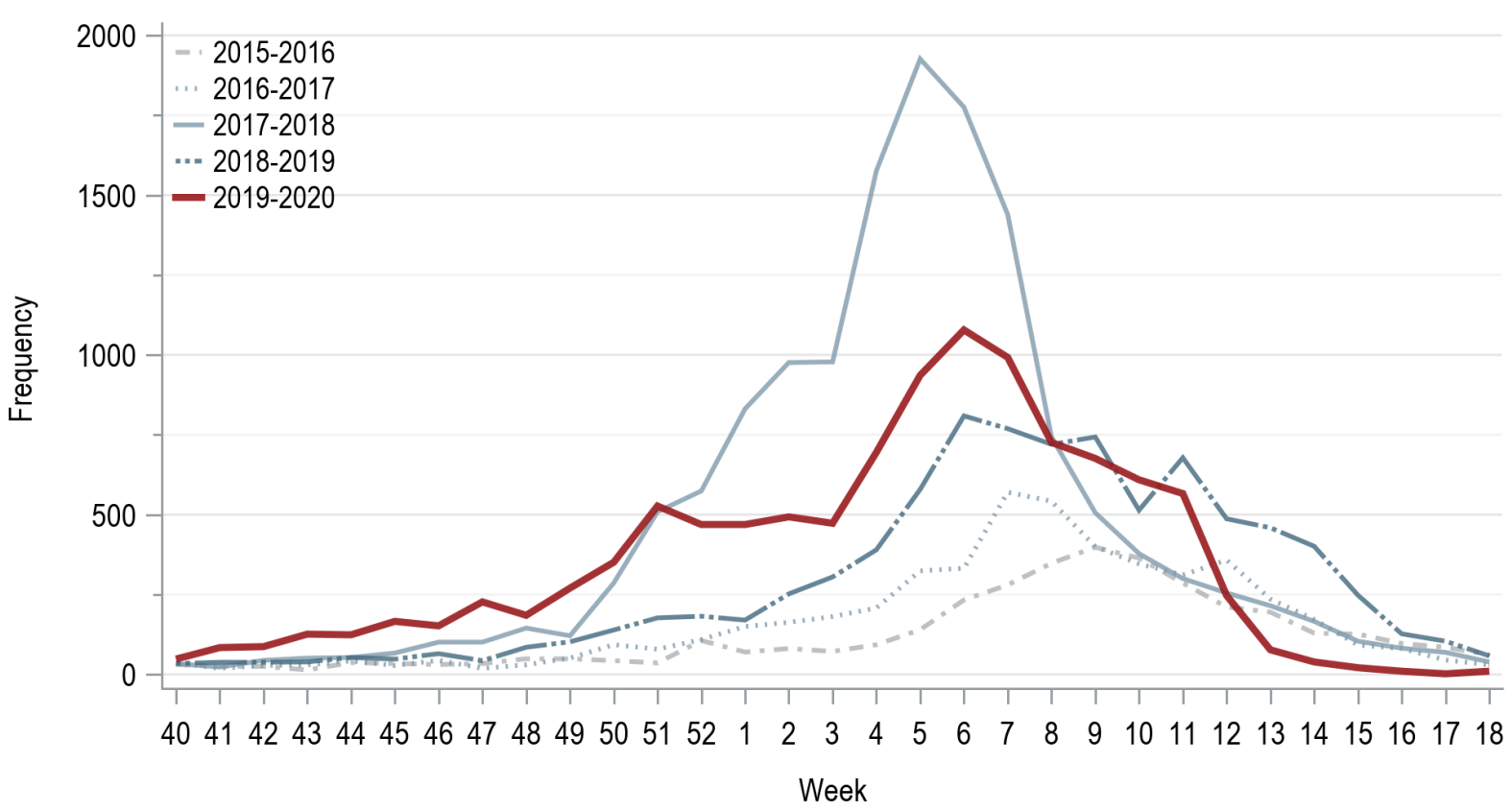
Surveillance threshold is calculated as the in-season average number of inpatient cases plus one standard deviation in 2016-2017, 2017-2018, and 2018-2019 seasons.
Data sources: HL7-formatted CHCS chemistry and microbiology databases.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

Pharmacy-Based Influenza Cases

BLUF:

The 2019-2020 season indicated a 24% increase from the previous season in the total number of influenza antiviral (AVs) prescriptions dispensed among DON beneficiaries. The increase may be an indicator of the severity of the influenza season.

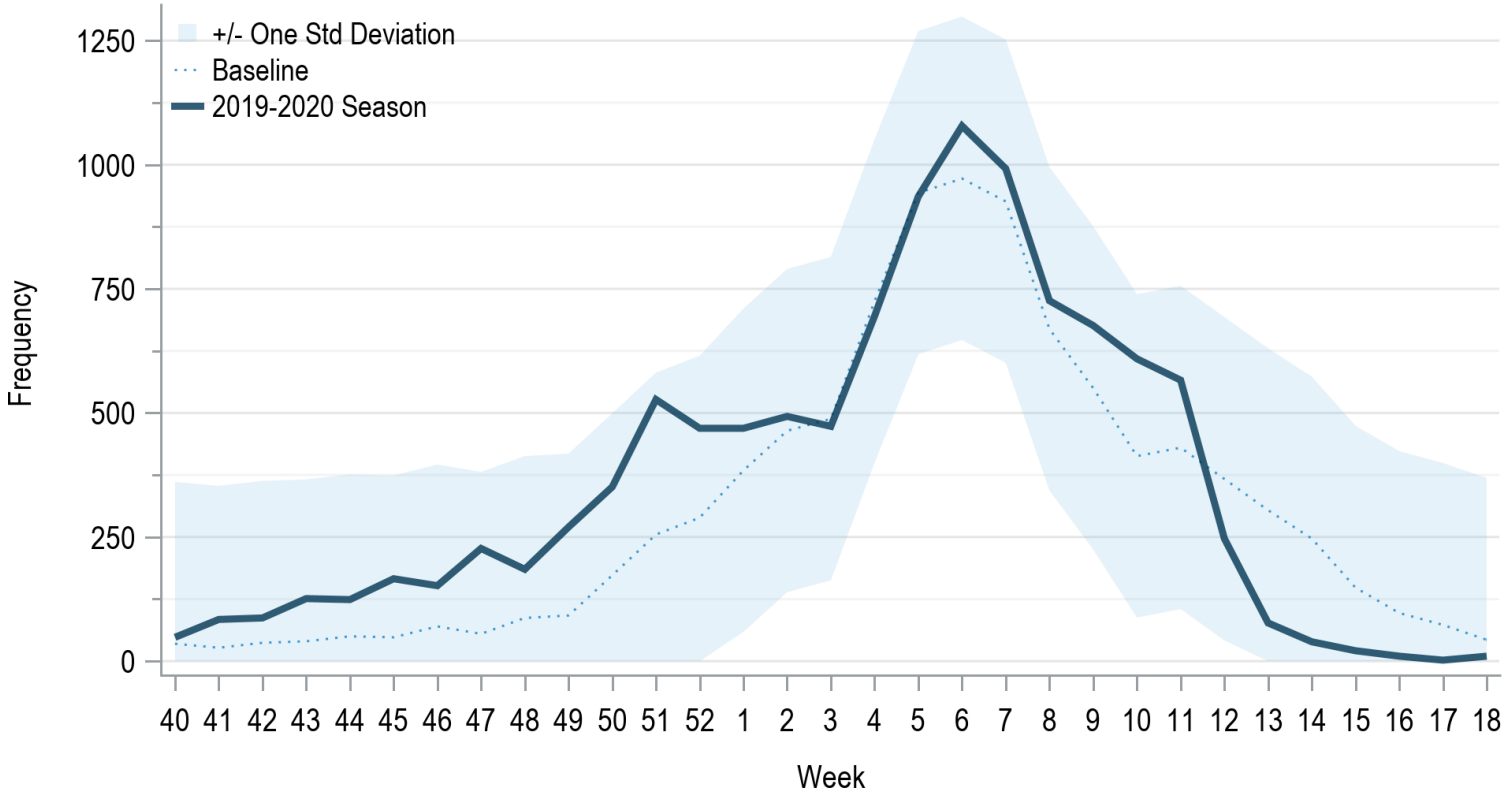
Weekly Distribution of Dispensed Influenza Antiviral Prescriptions among DON Beneficiaries Compared to the Previous Four Seasons



Data sources: HL7-formatted CHCS pharmacy database.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

- Within the past five years, 2017-2018 was the only season with an overall higher frequency of dispensed antivirals than the 2019-2020 season.
- Oseltamivir accounted for 99.7% of all influenza AVs dispensed during the 2019-2020 season, of which 88.6% were prescribed for treatment versus chemoprophylaxis.
- The number of dispensed AVs sharply declined starting from Week 11 likely due to prevention measures implemented due to COVID-19.

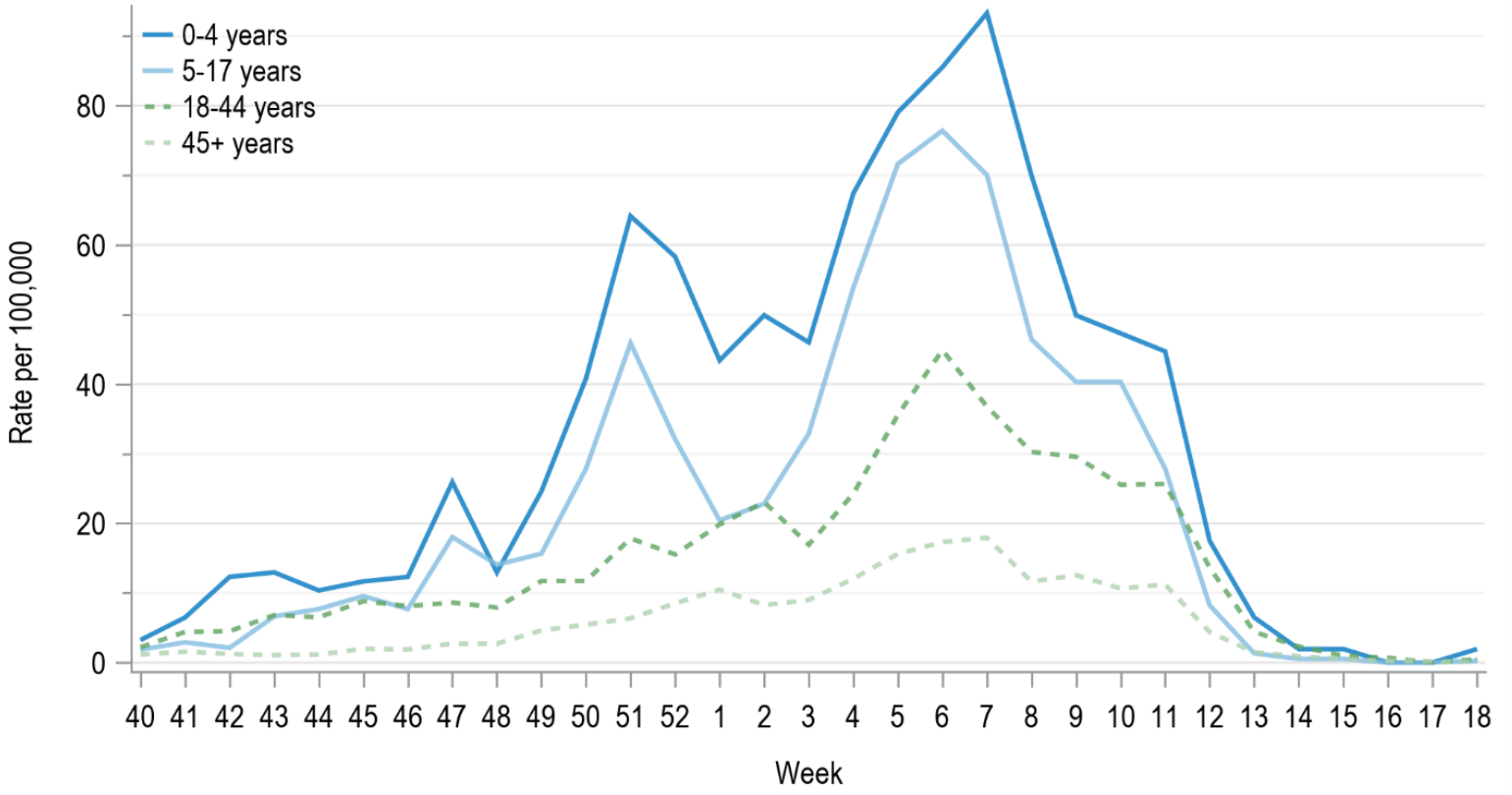
Weekly Distribution of Dispensed Influenza Antiviral Prescriptions Compared with Seasonal Baseline, DON Beneficiaries, 2019-2020 Season (*n* = 10,935)



Baseline calculated as the unweighted average of the number of antiviral prescriptions dispensed in 2016-2017, 2017-2018, and 2018-2019 seasons.
Data sources: HL7-formatted CHCS pharmacy database.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

- The level of weekly dispensed AVs was consistently higher than the baseline until Week 3, which suggests that influenza activity was higher than historic trends early in the season.
- The number of influenza AVs dispensed for the 2019-2020 season stayed within one standard deviation of the baseline, an average of dispensed antivirals over the previous three seasons. This indicates that the number of weekly dispensed AVs was within expected ranges.

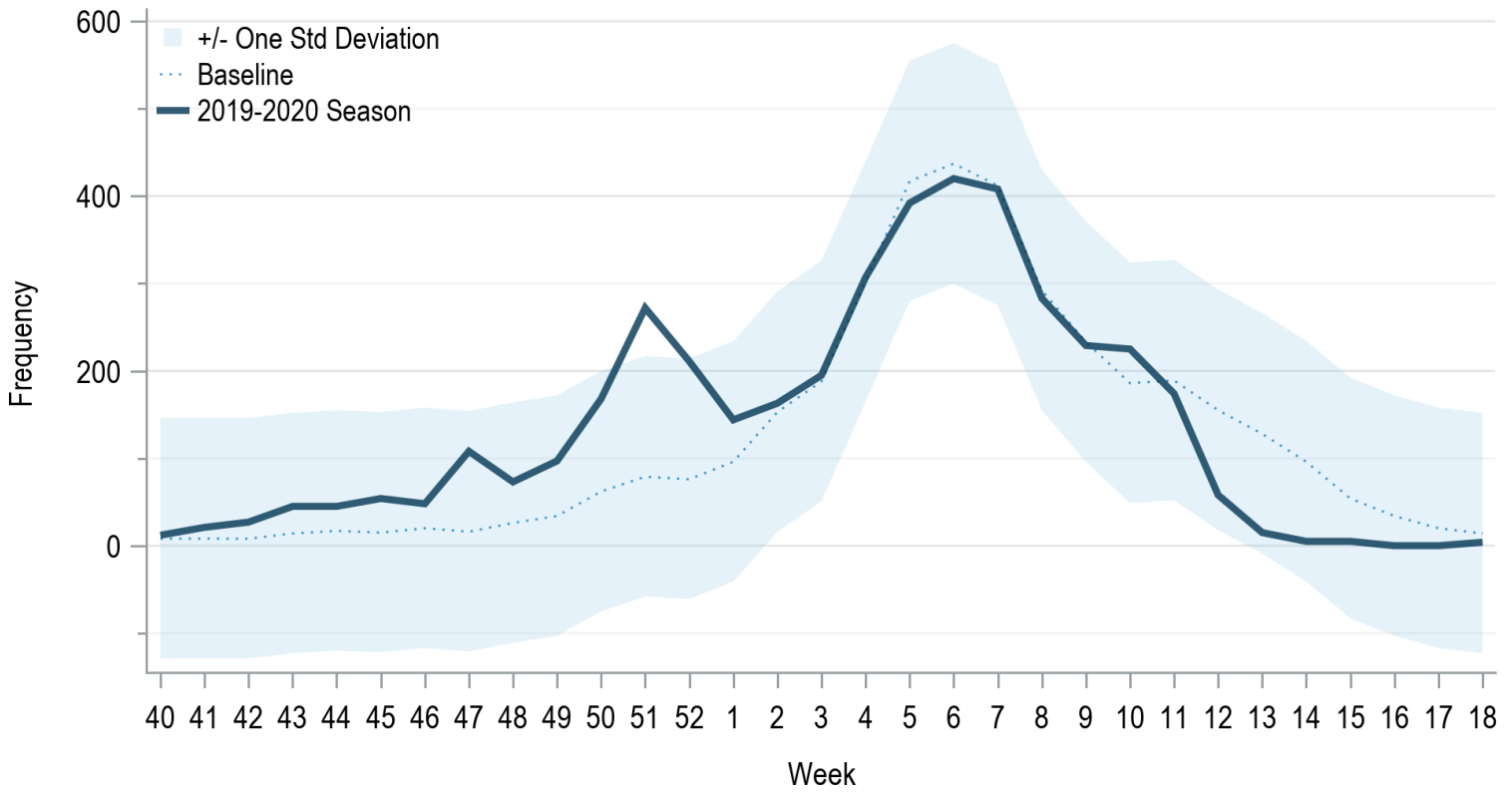
Weekly Distribution Rate of Dispensed Influenza Antiviral Prescriptions, DON Beneficiaries by Age Group, 2019-2020 Season



Data sources: HL7-formatted CHCS pharmacy database.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

- Similar to the 2018-2019 season, younger DON beneficiaries (0-17 years) were more impacted by influenza as indicated by the higher rates of influenza AVs dispensed.
- The similarity of the trend of the rates across the age group suggests the spread of influenza transmission did not differ by age.

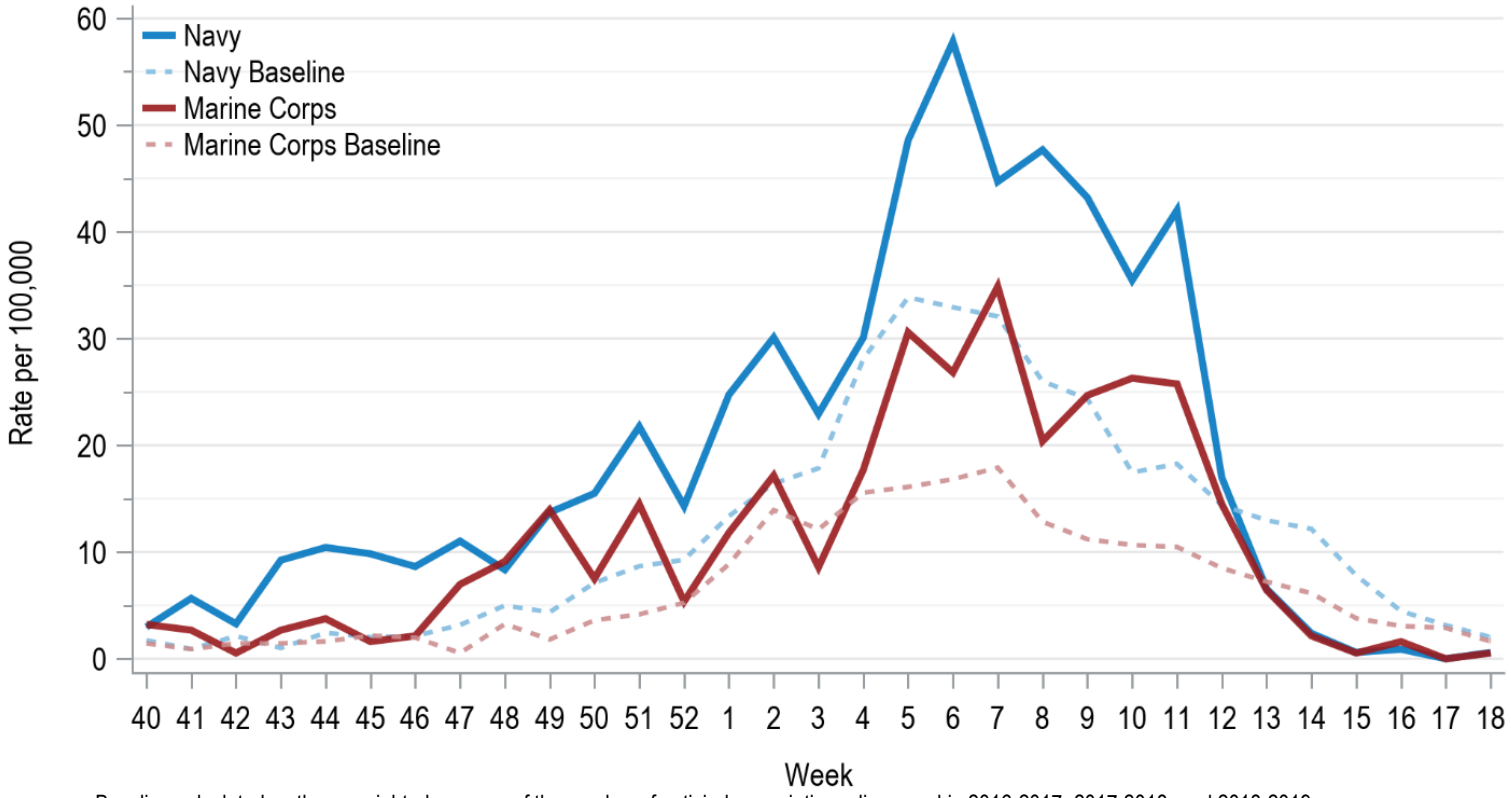
Weekly Distribution of Dispensed Influenza Antiviral Prescriptions Compared to the Seasonal Baseline among Children (Age 17 and Under), 2019-2020 Season (*n* = 4,208)



Baseline calculated as the unweighted average of the number of antiviral prescriptions dispensed in 2016-2017, 2017-2018, and 2018-2019 seasons.
Data sources: HL7-formatted CHCS pharmacy database.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

- During the 2019-2020 season, there was a 10.5% increase in AVs dispensed to children (0-17 years) from the previous season.
- Compared to the baseline, the amount of AVs dispensed stayed within the expected ranges for most of the season, which suggest that children experienced a similar influenza season as the previous three seasons.

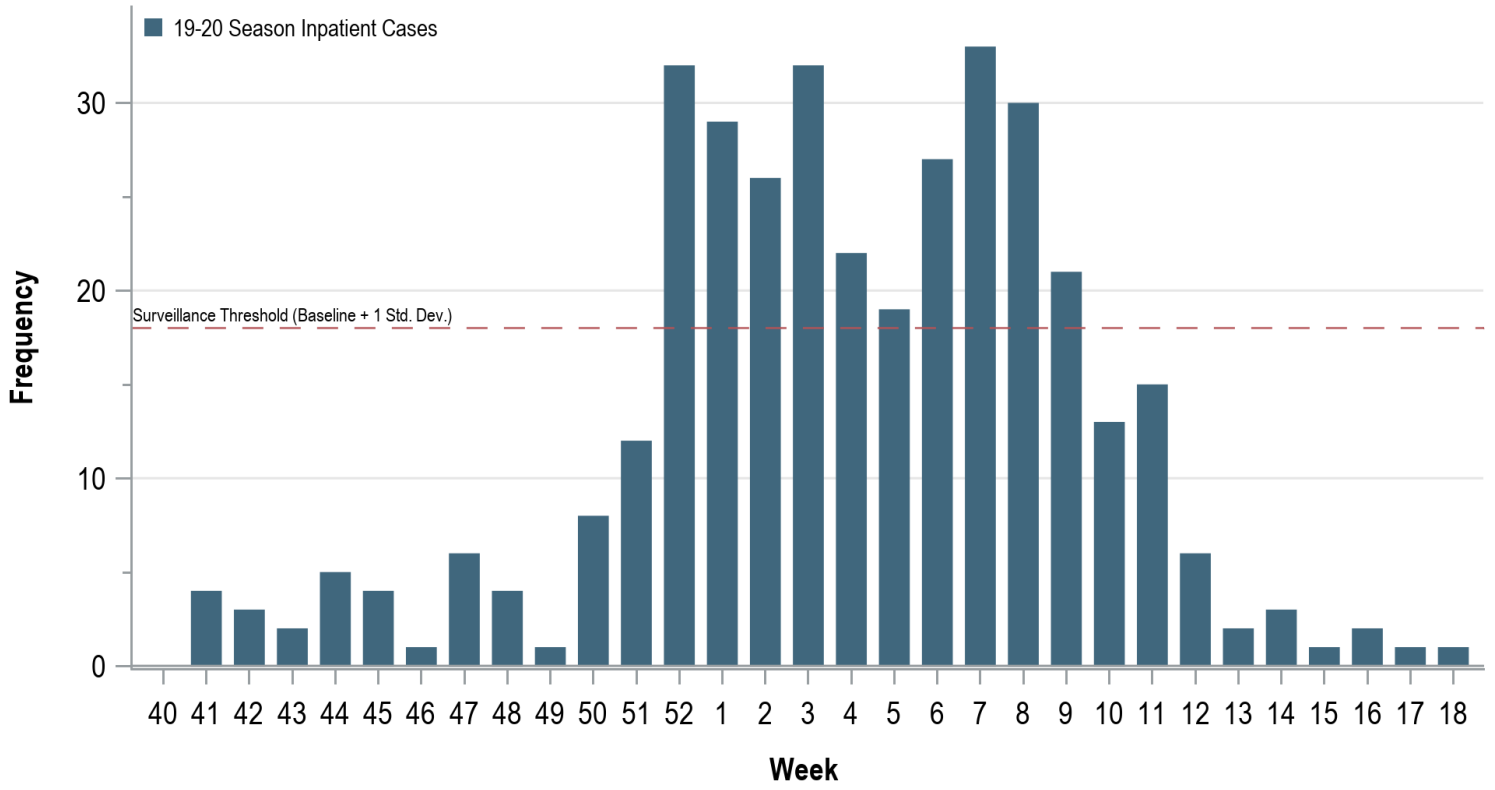
Weekly Distribution Rate of Dispensed Influenza Antiviral Prescriptions, DON Active Duty Members, 2019-2020 Season



Baseline calculated as the unweighted average of the number of antiviral prescriptions dispensed in 2016-2017, 2017-2018, and 2018-2019 seasons.
Data sources: HL7-formatted CHCS pharmacy database.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

- For most of the 2019-2020 season, more DON AD members were affected by influenza than the average of the previous three seasons, as indicated by the increase in the rate of AVs dispensed.
- A sharp decline in the rate of dispensed AVs was observed after Week 11, most likely due to the protective measures implemented due to the COVID-19 pandemic.

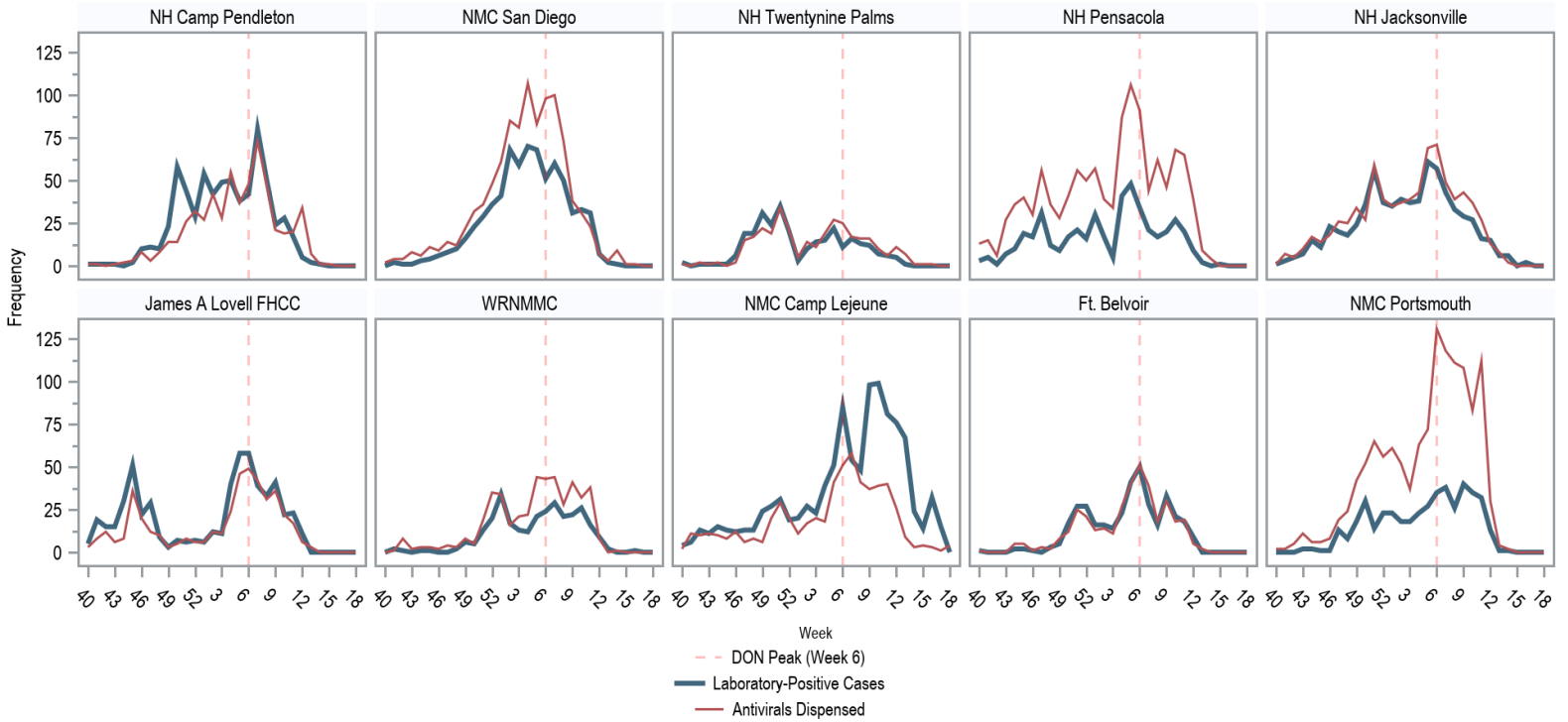
Weekly Distribution of Dispensed Influenza Antiviral Prescriptions in an Inpatient Setting, DON Beneficiaries, 2019-2020 Season (*n* = 365)



Surveillance threshold is calculated as the in-season average number of inpatient cases plus one standard deviation in 2016-2017, 2017-2018, and 2018-2019 seasons.
Data sources: HL7-formatted CHCS pharmacy database.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

- The total number of AVs dispensed in an inpatient setting exceeded the surveillance threshold for 10 of 31 surveillance weeks, which may indicate an increase in transmission and severity of influenza between Weeks 52 and 9.
- In 2019-20 season, 3.3% of the AVs were dispensed in an inpatient setting. This suggests that the most influenza cases were less severe and did not lead to hospitalization.

Distribution of Weekly Influenza Antiviral and Laboratory-Based Influenza Cases at MTFs with Highest Frequency of Cases, DON Beneficiaries, 2019-2020 Season



- Generally, trends among laboratory-positive cases and dispensed AVs mirrored one another across MTFs.
- The difference in the correlation between the AVs dispensed and laboratory-based cases across facilities may indicate variability in the burden of influenza, population treated, and medical care.

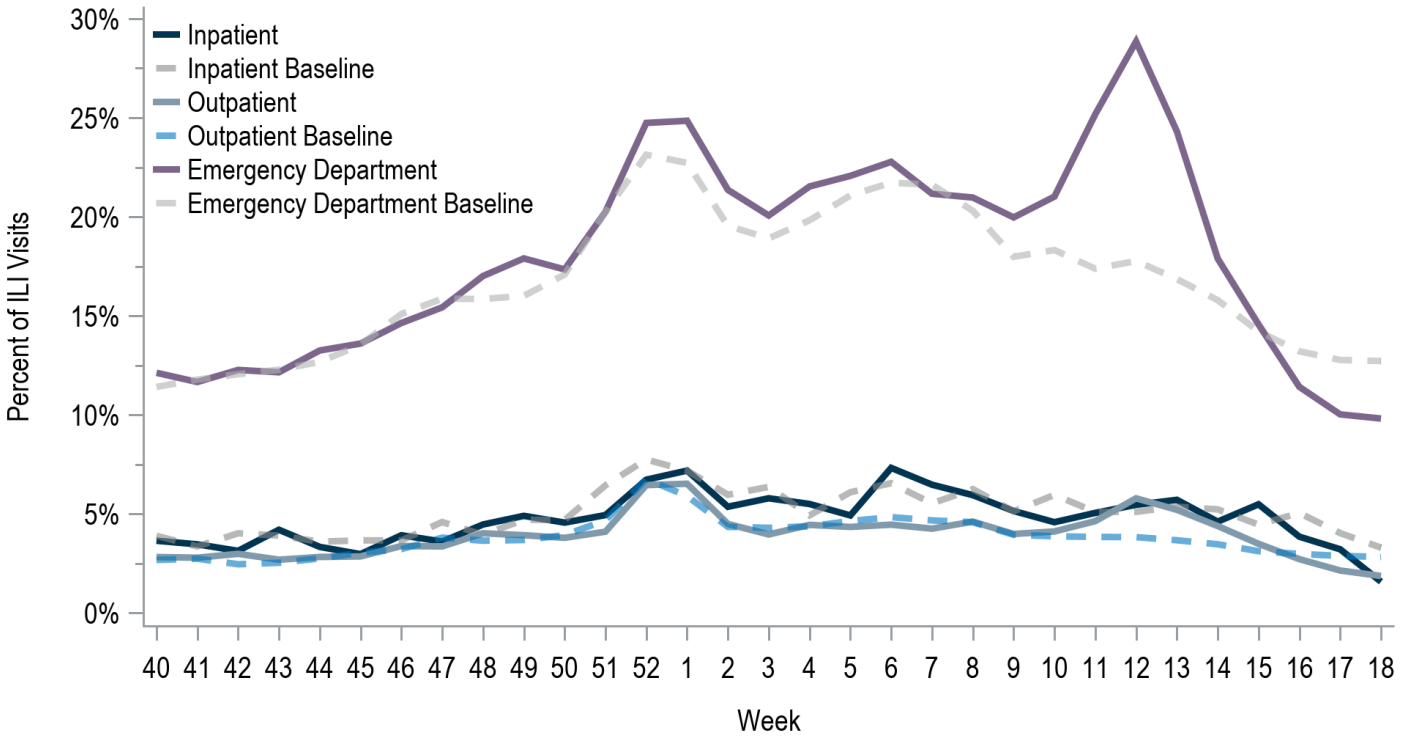
Data sources: HL7-formatted CHCS pharmacy database.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

Encounter-Based Influenza-like Illness (ILI)

BLUF:

Influenza-like illness (ILI) trends followed historical baselines until the early spring, when trends exceeded baseline. ILI cases peaked after laboratory-based influenza cases, but the initial period of COVID-19 proliferation may have been a factor in the rise of health-seeking behavior.

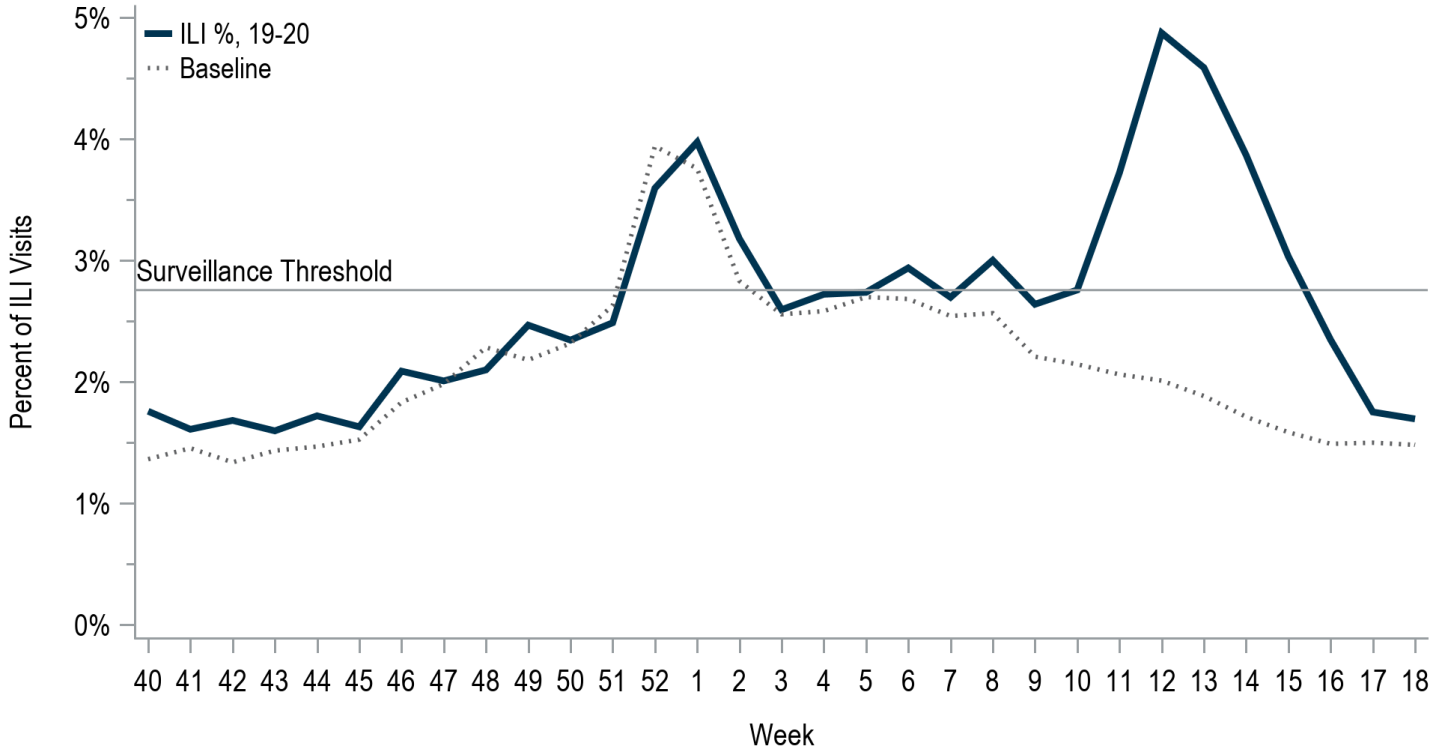
Weekly Distribution of ILI Encounters Compared to Baseline, DON Beneficiaries, 2019-2020 Season



Baseline calculated as the unweighted average of the percentage of outpatient medical encounters due to ILI in 2016-2017, 2017-2018, and 2018-2019 seasons.
Influenza-like illness (ILI) is defined based on the surveillance definitions from the Armed Forces Health Surveillance Branch (AFHSB).
Data sources: CAPER and SIDR.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

- Similarities between ILI and COVID-19 symptoms may have resulted in the increase of ED ILI encounters during the 2019-2020 season.
- The percentage of emergency department (ED) ILI visits began to substantially deviate from baseline during Week 8 and peaked during Week 12 (28.9%), most likely due to changes in health-seeking behaviors due to the COVID-19 pandemic.
- Inpatient and outpatient ILI visits peaked earlier than ED visits and remained similar to baseline levels.
- The abrupt deviation from baseline starting Week 9 coincides with the COVID-19 national emergency declaration, when Health Protection Condition Level was raised, and US CENTCOM issued an unprecedented stop movement command of all forces.[1,2]

Weekly Percentage of Outpatient Medical Encounters due to ILI Compared to Seasonal Baseline, Active Duty DON Service Members, 2019-2020 Season



- During the 2019-2020 season, the percentage of ILI outpatient encounters among AD DON service members deviated from the surveillance threshold after Week 10, possibly due to COVID-19 health seeking behaviors.

Baseline calculated as the unweighted average of the percentage of outpatient medical encounters due to ILI in 2016-2017, 2017-2018, and 2018-2019 seasons.
Influenza-like illness (ILI) is defined based on the surveillance definitions from the Armed Forces Health Surveillance Branch (AFHSB).
Data sources: CAPER and SIDR.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

Co-infections among Laboratory-Based Influenza Cases

BLUF:

Co-infections among laboratory–positive influenza cases may impact the severity and duration of illness. During the 2019–2020 season, influenza co-infections were primarily *Streptococcus*, similar to prior seasons. There was a 28.1% decrease in the frequency of co-infections identified among influenza laboratory-positive cases from the previous season.

Genera of Co-infections among Laboratory-Based Influenza Cases, DON Beneficiaries, 2019-2020 Season

	Specimen Type		
Coinfection Genus	**Upper Respiratory (%)**	**Lower Respiratory (%)**	**Total (%)**
Streptococcus	141 (96.6)	1 (10.0)	142 (91.0)
Staphylococcus	5 (3.4)	3 (30.0)	8 (5.1)
Haemophilus	0 (0.0)	2 (20.0)	2 (1.3)
Pseudomonas	0 (0.0)	2 (20.0)	2 (1.3)
Actinomyces	0 (0.0)	1 (10.0)	1 (0.6)
Moraxella	0 (0.0)	1 (10.0)	1 (0.6)
Total	146	10	156

Data sources: Health Level 7(HL7)-formatted CHCS microbiology and chemistry databases.
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

- Similar to previous seasons, *Streptococcus* was the primary co-infection pathogen (91.0%) identified among laboratory-based influenza cases. *Streptococcus* was also the most frequently identified upper respiratory infection (96.6%).
- Among lower respiratory specimens, *Staphylococcus* was the most isolated genus (30.0%).
- The rate of co-infection was 1.8% among laboratory-based influenza cases compared to 3.2% during the previous season.

Vaccinations among DON Service Members

BLUF:

In order to maximize force medical readiness before peak influenza season, the DON sets an annual goal to exceed 90% influenza immunization of all military personnel by December 15 (Week 51) of each year.[3]

Influenza Vaccination Coverage, DON Active and Reserve Components, 2019-2020 Season

Service/Component	Total Population	Number Vaccinated[a]	Number Exempt	Percent Vaccinated[b]
Navy Active Duty	307,299	291,636	1,459	95.4%
Navy Reserve	46,641	43,079	460	93.3%
Marine Corps Active Duty	145,271	138,928	508	96.0%
Marine Corps Reserve	35,012	31,474	766	91.9%
Total	534,223	505,117	3,193	94.6%

[a]Includes injection and intranasal vaccines for the 2019-2020 season.
[b]Percent vaccinated is calculated as the proportion of service members vaccinated out of total eligible members. Immunization status is current as of 04 May 2020.
Data source: Medical Readiness Reporting System (MRRS).
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

- Marine Corps AD reached this goal during Week 51 while Navy AD reached the goal during Week 1.
- Overall, the DON exceed the 90% vaccination goal with 94.6% vaccinated during the 2019–2020 season.

Vaccination Status of DON Active Duty and Recruit Cases, 2019-2020 Season

		Vaccine Type						
Status	**Immunity Status**	**IIV**	**LAIV**	**RIV**	**Unspecified Formulation**	**None**	**Total**	**Percent**
Active Duty	Vaccinated; immune	1,995	.	28	2	.	2,025	81.1%
	Vaccinated; not immune	278	1	4	0	.	283	11.3%
	No vaccination; exempt	2	.	.	0	.	2	0.1%
	No vaccination record	.	.	.	.	186	186	7.5%
Total		**2,275**	**1**	**32**	**2**	**186**	**2,496**	**.**
Recruit	Vaccinated; immune	87	.	3	.	.	90	23.7%
	Vaccinated; not immune	232	.	1	.	.	233	61.3%
	No vaccination record	.	.	.	.	57	57	15.0%
Total		**319**	**.**	**4**	**.**	**57**	**380**	

IIV=inactive influenza vaccine (injection), LAIV=live attenuated influenza vaccine (nasal spray), RIV=recombinant influenza vaccine (injection).
Vaccinated, immune: vaccinated more than 14 days prior to infection.
Vaccinated, not immune: vaccinated less than 14 days prior to infection, or after infection.
Data sources: Health Level 7 (HL7) chemistry and microbiology databases and Immunization Tracking System (ITS).
Prepared by the EpiData Center, Navy and Marine Corps Public Health Center, July 2020.

- Of DON Recruit laboratory-positive cases who received an influenza vaccine, 61.3% did not reach full immunity, compared to 11.3% of DON AD influenza laboratory-positive cases. This indicates that although recruits were vaccinated, they were infected with the influenza virus less than 14 days after vaccination.
- Recruits are at increased risk of acute respiratory disease due to crowded berthing spaces, decreased hygiene, and intense physical and psychological stressors.[4]

Conclusions

- Compared to prior seasons, influenza activity among DON beneficiaries during the 2019-2020 season was above baselines until Week 12, when masking and social distancing were implemented due to the COVID-19 pandemic.

- Among AD DON service members, rates of laboratory-based cases were higher than baseline for most of the current season.

- Contrary to previous seasons, influenza B was a predominant influenza type through Week 1.

- The level of weekly dispensed AVs was consistently higher than the baseline early in the season when influenza type B was most prevalent.

- Compared to the previous season, the current season indicated a 24% increase in the frequency of dispensed AVs; nearly 90% were dispensed for influenza treatment.

Conclusions Cont.

- ED ILI encounters increased above baseline during Week 8, similar to overall US trends.[5] This increase is most likely due to health-seeking behaviors related to the COVID-19 pandemic.

- Less than 2% of laboratory-based influenza cases were identified with a co-infection. *Streptococcus* from upper respiratory specimens was most commonly identified.

- More than 60% of vaccinated DON Recruits were identified as a laboratory-based influenza case less than 14 days after vaccination.

- Influenza surveillance may inform preparation, policy planning, and decision making for upcoming seasons. It also helps the DON continue to meet their vaccination goals and assess the disease impact upon mission readiness.

Limitations

- This analysis does not include records from MTFs that have transitioned to MHS GENESIS, purchased care providers, shipboard facilities, battalion aid stations, and in-theater facilities.
- Microbiology testing results show identified organism(s) and may not indicate the intent of the testing.
- Chemistry testing results include panels. If the test name or test results within a panel are not disease-specific, these results may not be captured in search terms used to query the data.
- Pharmacy records do not include purchased care records and, therefore, the number of dispensed AVs may be an underestimate.
- Percentages of case frequency changes from the previous season are calculated based upon data from Week 40 – Week 17 to provide valid comparisons.

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