

Seasonal Influenza 2019–2020 From an Early Start to a Sharp Decline During COVID-19 Pandemic; Experience of a Veterans Hospital in Long Island, New York

To the Editor:

The Centers for Disease Control and Prevention reports that the 2019–2020 influenza season started early in September 2019. The predominant viruses encountered this season were the influenza B/Victoria and influenza A (H1N1)pdm09.¹ The Centers for Disease Control and Prevention has estimated the following vaccine effectiveness for these 2 viruses: 44% for B/Victoria and 31% for A (H1N1)pdm09.² Although the seasonal influenza activity peaked by February 2020, a new influenza-like illness emerged globally. The World Health Organization declared the disease caused by a novel coronavirus, the severe acute respiratory coronavirus 2 (SARS-CoV-2) a pandemic on March 11, 2020.³ In early March 2020, a sharp rise in influenza-like activity was appreciated in New York City and its boroughs; however, the rapid influenza tests were negative.⁴ In late March, however, New York became the epicenter of this new pandemic because of the novel SARS-CoV-2 and the disease it causes coronavirus disease 2019, or COVID-19. The last worse influenza season in the United States was recorded in 2017 to 2018 with documented vaccine effectiveness of 38%.⁵ We had reported our experience during this season, 2017 to 2018, with 162 veterans affected in our hospital.⁶ We describe our influenza experience in the mid of a pandemic.

We retrospectively reviewed the medical charts of veterans who tested positive for influenza A, B, and COVID-19 from September 1, 2019, to May 31, 2020, at Northport Veterans Affairs Medical Center, Long Island, NY. Of 826 tests for influenza, 85 resulted positive for influenza A and 35 for influenza B. Of 1030 tests for COVID-19, 140 were positive for SARS-CoV-2 by nasopharyngeal reverse transcription polymerase chain reaction. Figure 1 depicts the viral activity per month. The median age for the influenza cohort (N = 120) was 57 years (range, 20–98). Table 1 depicts clinical characteristics of the cohort. Fifty-three, 44%, had received the seasonal influenza vaccine. The median duration from vaccination to illness was 92 days (3–189) for influenza A versus 121 days (6–171) for influenza B ($P = 0.030$). The patients who got influenza despite vaccination were older compared with nonvaccine recipients (61 vs 57 years, $P = 0.031$). There was 1 co-infection with influenza B and respiratory syncytial virus. No influenza and COVID-19 co-infections were identified. Eighteen patients with influenza required hospitalization (3 with influenza B, 15 with influenza A). Hospitalized patients were older (68 vs 53 years, $P < 0.001$), more likely to have congestive heart failure ($P = 0.023$), chronic obstructive lung disease ($P = 0.007$), coronary artery disease ($P = 0.013$), and hypertension ($P < 0.001$). There was no risk for hospitalization between vaccinated and unvaccinated patients ($P = 0.124$). Six patients who had influenza (4 with A, 2 with B) tested positive for COVID-19 at later dates in 2020.

The seasonal influenza activity in our hospital with early start in September 2019 and sharp decline in March 2020 mirrored the activity in our nation in the mid of a global pandemic. The vaccine failure noted in our cohort, with more than 100 days after receipt of the vaccine, could be explained because of early administration of the

vaccine in the season. This lower effectiveness with increasing time since influenza vaccination has been observed in many studies, raising the question of what the optimal vaccination timing should be.⁷ Nevertheless, for our older population, we should be aiming for the annual influenza vaccination by the end of October, as recommended by the US Advisory Committee on Immunization Practices.

Aikaterini Papamanoli, MD

Department of Infectious Diseases
Stony Brook University Hospital
Stony Brook, NY

Lisa Bailey, RN

Monique Thorne, RN

Department of Nursing
Northport Veterans Affairs Medical Center
Northport, NY

Beth LeMaitre, MT

Department of microbiology
Northport Veterans Affairs Medical Center
Northport, NY

Zeena Lobo, MD

George Pseudos, MD

Division of infectious diseases
Northport Veterans Affairs Medical Center
Northport, NY
george.pseudos@va.gov

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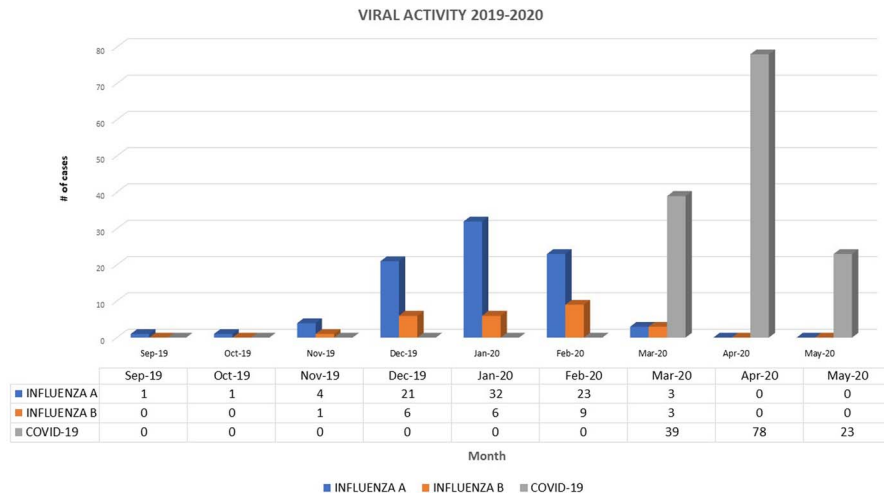


FIGURE 1. Viral activity 2019 to 2020.

TABLE 1. Patient Demographics Influenza Activity 2019 to 2020 Northport VAMC (N = 120)

Influenza A: 85 (1 isolate subtyped to H1N1pdm09)
 Influenza B: 35 (1 isolate subtyped to B/Victoria lineage)
 Men: 108, women: 12
 Median age: 57 y (range 20–98)
 Location of test: clinics 21, emergency department 91, nursing home 3, in hospital 5
 Race: White 64%, Black 16%, Hispanic 15%, Asian 5%

Comorbid conditions

- CHF: 11
- COPD: 16
- Diabetes: 28
- CAD: 28
- HTN: 45
- Asthma: 8
- ESRD: 5
- HIV #: 2

Tobacco use

- Former smokers 45, current smokers 20, lifetime nonsmokers 55

INF vaccine recipients #: 53
 Vaccines received in: August 2, September 22, October 16, November 9, December 4
 18 required hospitalization. (ICU in 2). Median length of stay: 4 (1–10 d)
 Treatment
 OSE 109, supportive care 8, OSE + antibiotics 24, OSE + steroids 1, antibiotics alone 3
 History of influenza
 1 INF A in 2019, 4 INF A in 2017, 2 INF A in 2015, 1 INF A in 2008
 Risk for Hospitalization

	Hospitalized (n = 19)	Nonhospitalized (n = 102)	P
Median age	68 y	54 y	<0.001
CHF	4/19 (21%)	5/102, (4.9%)	0.023
CAD	8/18 (44%)	17/102 (16%)	0.023
Diabetes	6/18 (33%)	19/102 (19%)	0.200
HTN	13/18 (72%)	29/102 (28%)	P < 0.001
Median BMI	29.8	28.4	0.527
Smokers	1/18	18/192	0.300
Receipt of vaccine	11/18(61%)	41/102 (40%)	0.214

BMI indicates body mass index; CAD, coronary artery disease; CHF, congestive heart failure; ESRD, end-stage renal disease; HIV, human immunodeficiency virus; HTN, hypertension; ICU, intensive care unit; INF, influenza; OSE, oseltamivir; VETS, veterans.