



Editorial

The intersection of viral illnesses: A seasonal influenza epidemic amidst the COVID-19 pandemic



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ABSTRACT

As seasons come and go throughout the year, so does the rise and fall of influenza-like illnesses. The next wave of influenza will occur as the novel coronavirus 19 (COVID-19), caused by the SARS CoV-2 virus, continues to afflict the US. Both viruses, while from different families, have similar risk factors and symptoms such as fever, cough, headache, muscle aches, and fatigue. Since both viruses carry similar patient presentations and target similar patient populations, the ability of physicians to make a clinical diagnosis of influenza without testing is impaired. Obtaining the correct diagnosis for a patient presenting with a viral illness is paramount for determining the best course of treatment, particularly since the treatment for influenza has not been shown to be effective in treating COVID-19 patients. Another diagnosis that must be kept in mind is the possibility of co-infection with both influenza and COVID-19. With COVID-19 already placing patients in the Intensive Care Unit, additional pathogens causing similar severe manifestations can worsen patient outcomes. The compounding cumbersome additions of Influenza-Like-Illnesses can further burden the already stressed healthcare system, highlights the importance of proactive measures. Increasing influenza vaccination rates is a supported proactive measure that can be promoted through social media platforms, infomercials, and short informational videos physicians can play prior to the start of a telemedicine visit. Through the implementation of education and support for vaccination, this imminent danger may be avoided, allowing healthcare providers to effectively navigate the crossroads built by incoming patients presenting with viral illnesses.

Throughout the past century, viral illnesses have come and gone whether as a massive pandemic such as the 1918 Influenza Pandemic, or as more routine flu season epidemics. In 2020, the influenza seasonal epidemic is expected to begin soon, in the fall and winter months [1]. Each year, in anticipation of the influenza season, healthcare providers and media outlets caution patients of the impending wave of this respiratory viral illness. However, this year another virus has also raised massive concerns requiring increased vigilance for respiratory illnesses. The novel coronavirus 19 (COVID-19), caused by the SARS CoV-2 virus, continues to sweep the nation, spreading throughout our communities, disrupting our daily lives, and burdening our healthcare system. The more than likely overlap between the upcoming influenza season and the current COVID-19 pandemic will produce many challenges for physicians to overcome.

A typical year in the United States (US) has 9 to 45 million influenza infections resulting in 140,000 to 810,000 hospitalizations and 12,000 to 61,000 deaths [1]. Each year several characteristics factor into the morbidity and mortality rates of the influenza virus, including the virulence of the dominant virus, vaccine effectiveness, and vaccine utilization. Increased vaccinations result in decreased morbidity and mortality rates [1]. In the US, the COVID-19 virus has infected 7,689, 358 Americans resulting in 214,007 deaths as of October 10, 2020 [2]. Both viruses, while from different families, result in fever, cough, headache, muscle aches, and fatigue [3–5]. Risk factors for both viruses for severe disease include increasing age, prior comorbid conditions,

cardiac and pulmonary diseases, and immunocompromised status [1,4]. The notable exception is the influenza virus' unique predilection for younger children [1]. Both viruses exhibit similar transmission characteristics.

In the past, physicians could rely on clinical signs and symptoms to diagnose an ailing patient with influenza. However, due to the level of shared signs, symptoms, differentiating between influenza and COVID-19 will usually require diagnostic testing [4,6]. Obtaining the correct diagnosis for a patient presenting with a viral illness is paramount for determining the best course of treatment, particularly since the treatment for influenza has not been shown to be effective in treating COVID-19 patients. Treatments for influenza are anti-virals which include oseltamivir phosphate, zanamivir, peramivir, and baloxavir marboxil [1]. On the contrary, COVID-19 currently does not have FDA approved anti-viral medication. There is however an emergency use authorization for dexamethasone and the anti-viral remdesivir [7].

Currently, some case studies have reported concurrent infections of both COVID-19 and influenza [7]. In these case studies, co-infection with COVID-19 and influenza can present with viral pneumonia, adult respiratory distress syndrome (ARDS) and acute liver injury and the outcomes are more likely to be death [8]. With COVID-19 already placing patients in the Intensive Care Unit (ICU), commonly due to ARDS, additional pathogens causing similar severe manifestations can potentially amplify patient morbidity and mortality [9].

Considering the burden COVID-19 is already placing on our

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healthcare system and Emergency Departments (EDs), the compounding cumbersome additions of Influenza-Like-Illness (ILI) can further devastate the healthcare system, especially our healthcare workers. In a study by D'Amore et al. many patients seek care for ILI in the ED, as seen earlier this year with a sharp increase in ED visits at the start of the pandemic in the US [8]. This study showed one in four providers suffering from ILI after caring for over 1000 influenza-positive patients [9]. The high transmission ratio of influenza therefore puts others, particularly healthcare workers, at risk for contracting the virus. This highlights the importance of implementing proactive measures in order to spare and protect already limited personnel and diagnostic resources. Emergency and critical care departments, in preparation for the impending influx of additional COVID-19/ILI illnesses, are able to utilize the Center for Disease Control and Prevention's Pandemic Influenza Triage Tool in order to safely process patients presenting with signs and symptoms of an ILI [10]. Other measures EDs are taking include limiting patient inflow by triaging through telemedicine/online platforms prior to patient arrival and identifying patients coming in with respiratory symptoms so that proper precautions can be followed [11]. One of the most effective measures is the use of vaccination [1]. Influenza vaccination is underutilized in the US, with most age groups having < 50% utilization. Influenza vaccines are cost-effective and substantially reduce the severity and number of patients developing influenza and influenza like illnesses. Mass influenza vaccination should occur prior to the peak of the seasonal epidemic. Due to the high transmissibility of influenza, it is important to protect those who have weakened or developing immune systems. Without a current COVID-19 vaccine, routes to decrease co-infection must rely heavily on influenza prevention through vaccination. Aside from vaccination, the maintenance and enforcement of the current non-pharmacological interventions (NPI) including social distancing and proper hygiene are essential tools for combating the upcoming intersection of influenza and COVID-19.

In order to increase influenza vaccination rates in the US, public policy should be constructed to strongly support the vaccination of those working or attending school in public spaces. Such a public policy would resemble current healthcare institutions' policies on employee mandates for influenza vaccination, as it has been recognized healthcare workers' role in spreading the viral illness. This approach may include mass advertising of important public health information via official social media platforms and infomercials. Additionally, due to the increased use of telemedicine, physicians can opt to program a short information video on influenza and COVID-19, highlighting the importance of vaccination and proper hygiene prior to the start of the appointment. Building upon prior years of influenza vaccination education and increased public awareness of ILIs, physicians can help optimize public vigilance while having increased awareness themselves for signs of ILIs. Innovative approaches should be taken to reinforce and inform the US population on the need for proper hygiene as well as personal adjustments due to the current pandemic, which includes the use of face masks and social distancing.

The COVID-19 pandemic continues while the impending influenza season draws near. Due to the similar signs, and symptoms, distinguishing between influenza and COVID-19 is likely to require diagnostic testing. The overlap of the seasonal influenza epidemic and the COVID-19 pandemic can compound burdens on patients' outcomes and healthcare systems. Through the implementation of education and support for vaccination, this imminent danger may be avoided, allowing healthcare providers to effectively navigate the crossroads built by incoming patients presenting with viral illnesses.

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Declaration of competing interest

Authors declare no competing interests.

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