**Diagnosis and Prevention of Common Respiratory Illnesses**

The 2019 novel coronavirus (COVID-19) pandemic is the defining global health crisis of our time and the greatest public health challenge we have faced since World War II. Since its emergence in Asia late last year, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has spread to every continent except Antarctica. Cases are rising daily in Africa, the Americas, and Europe (United Nations Development Programme, “COVID-19 Pandemic,” 2020, https://bit.ly/31HqV1y).

Influenza (commonly referred to as the flu) and COVID-19 are both infectious respiratory illnesses. Although the symptoms of COVID-19 and the flu can look similar, the two illnesses are caused by different viruses (Lisa Maragakis, “Coronavirus Disease 2019 vs. the Flu,” Johns Hopkins Medicine, June 23, 2020, https://bit.ly/3dyDPd6).

When a person becomes infected with COVID-19 or with seasonal influenza, the initial presentations are similar. The symptoms may include fever, cough, body aches, and sometimes vomiting and diarrhea. Because COVID-19 is a novel virus, the list of symptoms (such as loss of taste or smell) continues to evolve as more is learned about the disease.

Both infections can be mild or severe in nature, and both are more deadly to people aged ≥65 years than younger patients (Centers for Disease Control and Prevention [CDC], “Coronavirus Disease 2019 (COVID-19): Frequently Asked Questions,” June 33, 2020, https://bit.ly/3hQn3N3).

Pneumonia has a similar presentation to influenza and COVID-19, and the symptoms may range from mild to severe. These include productive cough (which may produce greenish, yellow, or bloody mucus), fever, sweating, shaking chills, shortness of breath, rapid shallow breathing, sharp chest pain that worsens with deep breath or cough, loss of appetite, low energy, and fatigue. Confusion is commonly seen in older adults (American Lung Association, “Pneumonia Symptoms and Diagnosis,” May 27, 2020, https://bit.ly/2CADOJR).

**COVID-19**


Viral testing in nursing homes, an important addition to other infection prevention control recommendations, is aimed at preventing COVID-19 from entering nursing homes as well as detecting cases quickly and halting transmission. Testing practices should aim for rapid turnaround times (<48 hours) to allow for effective interventions. Historically, vaccine development usually takes about 10 years, but vaccine makers are racing to develop an effective COVID-19 vaccine — as of June 2020 there were 10 candidates in clinical trials. The Trump administration chose five companies for Operation Warp Speed, the national program to accelerate the development, manufacture, and distribution of COVID-19 vaccines, treatments, and diagnostics. They are Moderna, Johnson & Johnson, Merek, Pfizer/BioNTech, and AstraZeneca.


**Pneumonia**

Streptococcus pneumoniae (pneumococcus) can cause serious illness, including sepsis, meningitis, and pneumonia with bacteremia (invasive) or without bacteremia (noninvasive) (MMWR Morb Mortal Wkly Rep 2014;63:822–825). To confirm a diagnosis of pneumonia, several tests may be used, which include a blood culture to confirm infection and identify the pathogen, a chest X-ray to identify the location and extent of inflammation in the lungs, pulse oximetry to measure blood oxygen, and a sputum test.

Older patients are considered high-risk for pneumonia, so additional tests such as a chest computed tomography (CT) scan, arterial blood gases, pleural fluid culture, and/or a bronchoscopy may also be performed (American Lung Association, “Pneumonia Symptoms and Diagnosis,” May 27, 2020, https://bit.ly/2CADOJR).

Two pneumococcal vaccines are currently licensed in the United States for use in adults:

- Prevnar 13 (PCV13), a 13-valent pneumococcal conjugate vaccine (Wyeth)
- Pneumovax 23 (PPSV23), 23-valent pneumococcal polysaccharide vaccine (Merck)


PCV13. PCV13 vaccination is no longer routinely recommended for all adults aged ≥65 years. Instead, shared clinical decision-making for PCV13 use is recommended for persons aged ≥65 years who do not have an immunocompromising condition, cerebrospinal fluid (CSF) leak, or cochlear implant, and have not previously received a PCV13 vaccination.

According to the CDC guidance, when patients and vaccine providers engage in shared clinical decision-making for...
PCV13 use in a specific individual aged ≥65 years, the considerations may include the individual’s risk for exposure to PCV13 serotypes and risk for pneumococcal disease as a result of underlying medical conditions.

If a decision to administer PCV13 is made, it should be administered before PPSV23. PCV13 and PPSV23 should not be coadministered. The recommended intervals between pneumococcal vaccines remain unchanged for adults without an immunocompromising condition, CSF leak, or cochlear implant: ≥1 year between pneumococcal vaccines, regardless of the order in which they were received.

ACIP continues to recommend PCV13 in series with PPSV23 for adults aged ≥19 years (including those aged ≥65 years) with immunocompromising conditions, CSF leaks, or cochlear implants.

PPSV23 for adults aged ≥65 years. ACIP continues to recommend that all adults aged ≥65 years receive one dose of PPSV23. A single dose of PPSV23 is recommended for routine use among all adults aged ≥65 years. PPSV23 contains 12 serotypes in common with PCV13 plus an additional 11 serotypes that account for 32%–37% of invasive pneumococcal disease among adults aged ≥65 years. Adults who received one or more doses of PPSV23 before age 65 should receive an additional dose of PPSV23 at age ≥65 years, at least five years after the previous PPSV23 dose.

Summary
The CDC estimates there were approximately 50 million cases of influenza in the United States from October 1, 2019, through April 4, 2020, with 43,000 deaths. This is less than half of the >100,000 deaths from COVID-19 from March to June of 2020 (CDC, “2019–2020 U.S. Flu Season: Preliminary Burden Estimates,” Apr. 17, 2020, https://bit.ly/3SGENjD).

For the 2020–2021 flu season, the CDC has recommended that all Americans receive a flu vaccine, and adults aged ≥65 receive an appropriate pneumococcal vaccine per recent schedules (CDC, “Recommended Adult Immunization Schedule for Ages 19 Years or Older, United States, 2020,” Feb. 3, 2020, http://bit.ly/33llEBQ).


Dr. Manzi has been a licensed pharmacist since 1990 and a Board Certified Geriatric Pharmacist since 1998. She is currently a clinical advisor for CVS/Caremark, coordinating with account teams and health plans on the details of their pharmacy benefit offerings, formulary implementation, medication utilization management, and MTM as well as providing clinical information and geriatric expertise. Any opinions in this article are that of the author and not of CVS/Caremark.