Craig D. Nielsen, MD, FACP
Department of Internal Medicine, Cleveland Clinic; Associate Professor, Cleveland Clinic Lerner College of Medicine of Case Western Reserve University, Cleveland, OH; Governor, Ohio Chapter, American College of Physicians; Deputy Editor, *Cleveland Clinic Journal of Medicine*

Xian Wen Jin, MD, PhD, FACP
Department of Internal Medicine and Geriatrics, Cleveland Clinic; Associate Professor, Cleveland Clinic Lerner College of Medicine of Case Western Reserve University, Cleveland, OH

ONE MINUTE CONSULT

BRIEF ANSWERS TO SPECIFIC CLINICAL QUESTIONS

Q: Does my healthy 65-year-old patient still need the 13-valent pneumococcal conjugate vaccine (PCV13)?

A: The short answer is no. In the summer of 2019, the US Centers for Disease Control and Prevention Advisory Committee on Immunization Practices (ACIP) removed its 2014 recommendation that all healthy adults 65 or older should receive the PCV13 vaccine followed in 1 year by the PPSV23 (23-valent pneumococcal polysaccharide) vaccine.[1] However, PCV13 can still be given after engaging in shared clinical decision-making with the patient. The ACIP continues to recommend that all patients in this population receive the PPSV23 vaccine.[1,2]

The short answer is no—but it is not that simple

WHY CHANGE THE RECOMMENDATION?

In its 2014 recommendation for pneumococcal vaccination in all adults 65 and older, the ACIP noted that certain high-risk groups should be vaccinated earlier or receive additional doses.[1] Pallotta and Rehm outlined these recommendations and discussed the rationale for vaccinating against *Streptococcus pneumoniae* to prevent invasive pneumococcal disease.[3]

So why did the ACIP modify its recommendation? The primary reason is that the incidence of PCV13-type pneumococcal disease in adults had gone down to historic lows (**Figure 1**). A key to this reduction was that children started to be vaccinated in 2000, at first with PCV7 and then with PCV13, which replaced PCV7 in 2010.[1,2] This incidence leveled out from 2014 to 2018 despite the ACIP recommendation and data showing that about half the Medicare beneficiaries older than 65 received the vaccine.[4] The decreased incidence of disease also has decreased the cost-effectiveness of vaccination. The cost of giving PCV13 and then PPSV23, compared with PPSV23 alone, is now estimated to be $200,000 to $560,000 per quality-adjusted life year,[1] whereas in 2014, it was only $65,000.[5]

In light of these facts, the ACIP voted to remove the recommendation requiring older patients to receive the PCV13 vaccine.

SHARED CLINICAL DECISION-MAKING

But it is not that simple. In an attempt to balance "the minimal population-level impact of routine [vaccination] with the potential for individual-level protection,"[1] the ACIP added the principle of shared clinical decision-making to its recommendation.[1,2,4]

The ACIP committee recognized that some immunocompetent patients at higher risk of invasive pneumococcal disease (or their physicians) may believe that PCV13 would still be worthwhile. This population includes patients with certain medical conditions (eg, alcohol or tobacco abuse; chronic heart, liver, or lung disease; diabetes) and patients living in nursing homes or other long-term care facilities.[1,4] By adding the concept of shared clinical decision-making, the ACIP committee ensured that "PCV13 would remain available to patients who want this added protection."[1]

A practical downside of this recommendation is that busy primary care practitioners

The authors report no relevant financial relationships which, in the context of their contributions, could be perceived as a potential conflict of interest.

doi:10.3949/ccjm.87a.20012

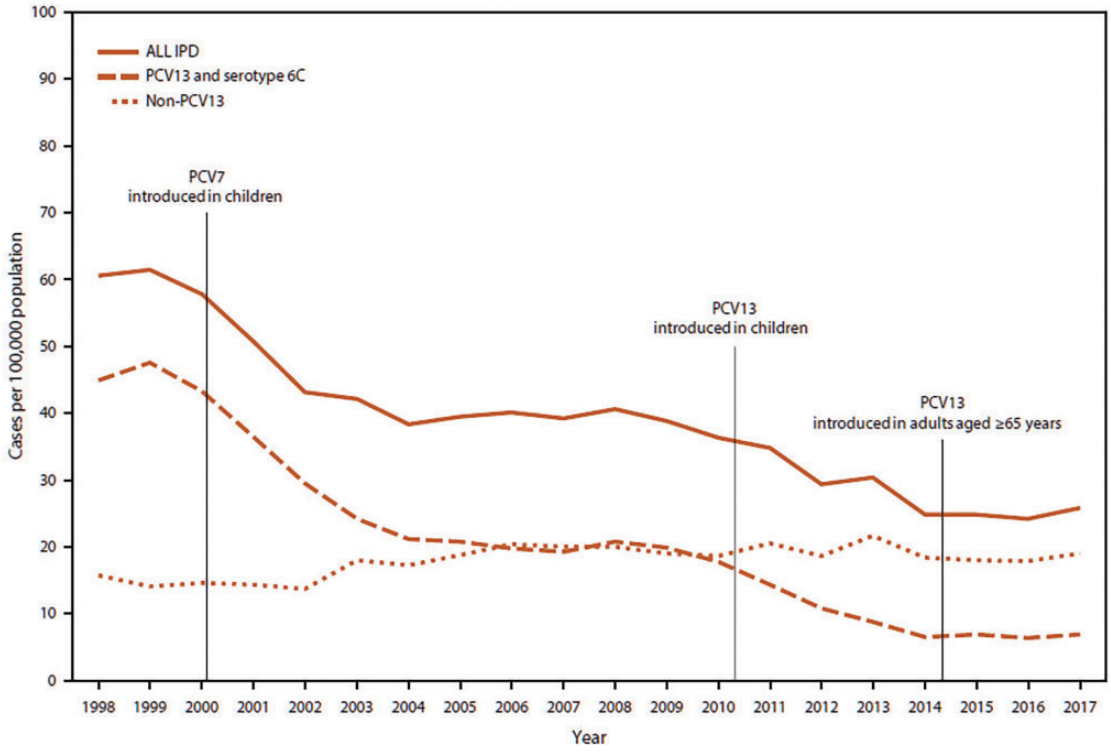

FIGURE 1. Incidence of invasive pneumococcal disease among US adults 65 and older by pneumococcal serotype, 1998–2017.

Matanock A, Lee G, Gierke R, Kobayashi M, Leidner A, Pilishvili T. Use of 13-valent pneumococcal conjugate vaccine and 23-valent pneumococcal polysaccharide vaccine among adults aged ≥ 65 years: updated recommendations of the Advisory Committee on Immunization Practices. MMWR Morb Mortal Wkly Rep 2019; 68(46):1069–1075. doi:10.15585/mmwr.mm6846a5

may lack the time to effectively and efficiently review the potential benefit or lack of benefit of PCV13 for the individual. Also, universal recommendations (eg, vaccinate *all* patients over age 65) are generally easier to remember or implement than conditional recommendations (eg, vaccinate *some* patients over age 65). Strategies known to improve vaccination compliance rates include interventions such as electronic medical record reminders and direct patient outreach.

SUMMARY

The 2019 ACIP recommendations are to vaccinate all patients age 65 and older with PPSV23, but PCV13 can be used in shared clinical decision-making. The ACIP continues to endorse use of both PCV13 and PPSV23 in patients older than 19 (including those 65 and older) with immunocompromising conditions, cerebrospinal fluid leak, or cochlear implants.[1] These recommendations are summarized in **Table 1**.[2]

Some patients at higher risk (and their physicians) may believe that PCV13 is still worthwhile

TABLE 1

Summary of current recommendations for pneumococcal vaccination

Patient population	Dosing
≥ **65 years old**	1 dose of PPSV23 If PPSV23 was given before age 65, give another dose at least 5 years after previous dose
≥ **65 years old,** immunocompetent, with chronic heart disease, chronic lung disease, chronic liver disease, diabetes mellitus, alcoholism, or cigarette smoking	Shared clinical decision-making: can give PCV13 followed by PPSV23 at least 1 year later
19 through 64 years old, with chronic heart (excluding hypertension), lung, or liver disease, diabetes, alcoholism, or cigarette smoking	1 dose of PPSV23
19 through 64 years old, with cerebrospinal fluid leak or cochlear implants	1 dose of PCV13 followed by 1 dose of PPSV23 at least 8 weeks later At age 65 or older, give another dose of PPSV23 at least 5 years after PPSV23 (only 1 dose of PPSV23 recommended for ages 65 or older)
19 years or older, with congenital or acquired immunodeficiency (including B- and T-lymphocyte deficiency, complement deficiencies, phagocytic disorders, HIV infection), chronic renal failure, nephrotic syndrome, leukemia, lymphoma, Hodgkin disease, generalized malignancy, iatrogenic immunosuppression (eg, drug or radiation therapy), solid organ transplant, multiple myeloma, or anatomical or functional asplenia, including sickle cell disease and other hemoglobinopathies	1 dose of PCV13 followed by 1 dose of PPSV23 at least 8 weeks later, then another PPSV23 dose at least 5 years after previous PPSV23 At age 65 or older, give 1 dose of PPSV23 at least 5 years after most recent PPSV23 dose (only 1 dose of PPSV23 is recommended for ages 65 or older)

PCV13 = 13-valent pneumococcal conjugate vaccine; PPSV23 = 23-valent pneumococcal polysaccharide vaccine.

Based on information in reference 1.

REFERENCES

1. **Matanock A, Lee G, Gierke R, Kobayashi M, Leidner A, Pilishvili T**. Use of 13-valent pneumococcal conjugate vaccine and 23-valent pneumococcal polysaccharide vaccine among adults aged ≥ 65 years: updated recommendations of the Advisory Committee on Immunization Practices. MMWR Morb Mortal Wkly Rep 2019; 68(46):1069–1075. doi:10.15585/mmwr.mm6846a5
2. **Freedman M, Kroger A, Hunter P, Ault KA; Advisory Committee on Immunization Practices**. Recommended adult immunization schedule, United States, 2020. Ann Intern Med 2020; 172(5):337–347. doi:10.7326/M20-0046
3. **Pallotta A, Rehm SJ**. Navigating pneumococcal vaccination in adults. Cleve Clin J Med 2016; 83(6):427–433. doi:10.3949/ccjm.83a.15044
4. **Shah AA, Wallace MR, Fields H**. Shared decision-making for administering PCV13 in older adults. Am Fam Physician 2020; 101(3):134–135. pmid:32003958
5. **Stoecker C, Kim L, Gierke R, Pilishvili T**. Incremental cost-effectiveness of 13-valent pneumococcal conjugate vaccine for adults age 50 years and older in the United States. J Gen Intern Med 2016; 31(8):901–908. doi:10.1007/s11606-016-3651-0

***Address**: Craig D. Nielsen, MD, FACP, Department of Internal Medicine, G10, Cleveland Clinic, 9500 Euclid Avenue, Cleveland, OH 44195; nielsec@ccf.org*