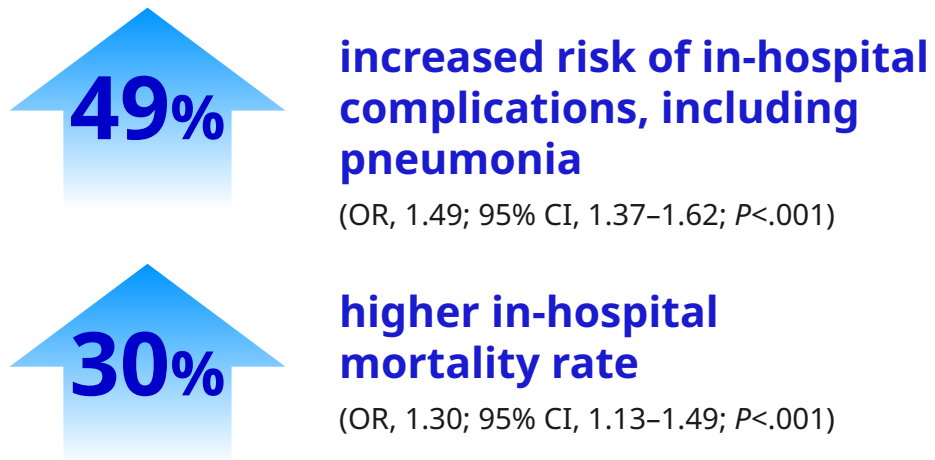


Closing Gaps in Vaccine Preventative Care in People with Cancer



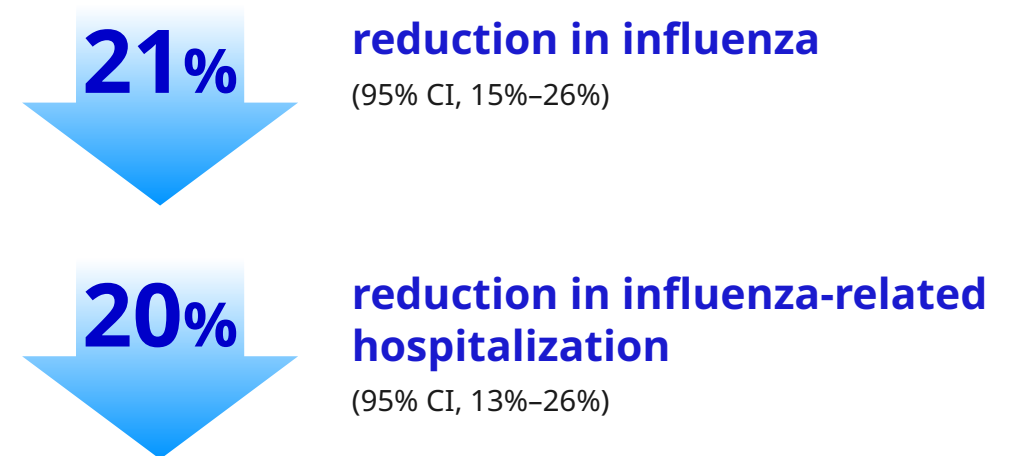
Risks of Vaccine-Preventable Diseases in People with Cancer

In an analysis of Nationwide Inpatient Sample data between 2012 and 2014, **hospitalized adult patients with cancer and concomitant influenza**, when compared with hospitalized adult patients with cancer but without the flu, had¹:



Benefits of Vaccinations in People with Cancer

In a retrospective observational study of 26,463 adult cancer patients who underwent influenza testing during the 2010–2011 to 2015–2016 flu seasons, **influenza vaccination** vs no vaccination was associated with a decreased risk of **influenza** and **influenza-related hospitalizations**²



OR=odds ratio.

References: 1. Li J, Zhang D, Sun Z, Bai C, Zhao L. Influenza in hospitalised patients with malignancy: a propensity score matching analysis. *ESMO Open*. 2020;5(5):e000968. 2. Blanchette PS, Chung H, Pritchard KI, et al. Influenza vaccine effectiveness among patients with cancer: a population-based study using health administrative and laboratory testing data from Ontario, Canada. *J Clin Oncol*. 2019;37(30):2795-2804.

Vaccination Recommendations in Adults with Cancer*

CDC/ACIP Vaccine Recommendations for Cancer¹

Influenza	Pneumococcal	COVID-19 ²	RSV ^{2†}	Zoster	Tdap	HepB	HPV
1 dose annually	Aged 19 years and older: 1 to 2 shots over a person's lifetime	1 dose of 2024-2025 COVID-19 vaccine as authorized or approved by the FDA	Aged 60 years and older: 1 dose [‡]	2 doses at age ≥19 years	1 dose Tdap, then Td or Tdap booster every 10 years	2, 3, or 4 doses, depending on vaccine or condition	3 doses through age 26 years

➡ The NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) recommend **influenza** and **pneumococcal** vaccines in all patients with cancer, **meningococcal** vaccine in those at increased risk, and the **HPV** vaccine (age-dependent) to reduce the risk of cancer-related infections³

ACIP=Advisory Committee on Immunization Practices; CDC=US Centers for Disease Control and Prevention; CKD=chronic kidney disease; COVID-19=coronavirus disease of 2019; FDA=US Food and Drug Administration; HepB=hepatitis B; HPV=human papillomavirus; NCCN=National Comprehensive Cancer Network; RSV=respiratory syncytial virus; SGLT2=sodium-glucose co-transporter-2; Tdap=tetanus, diphtheria, acellular pertussis.

*Active treatment of cancer.

[†]RSV vaccination is recommended as a single lifetime dose only. Persons who have already received RSV vaccination are NOT recommended to receive another dose.²

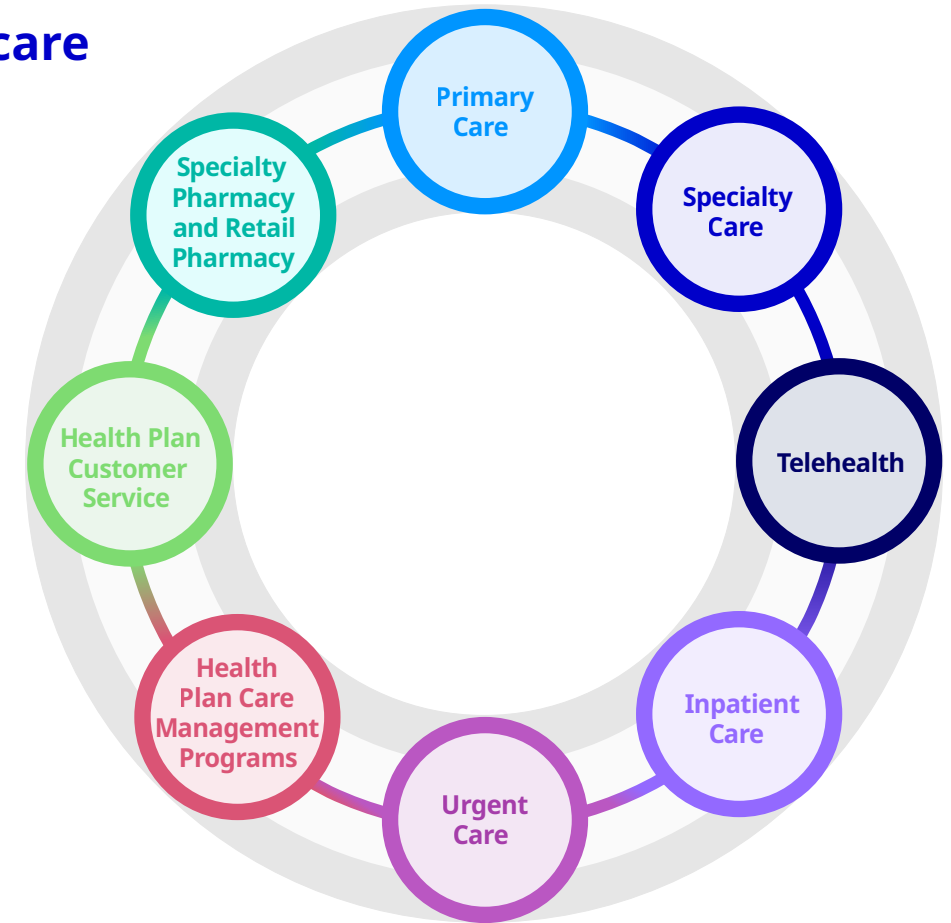
[‡]CKD or other complications or requiring treatment with insulin or SGLT2 inhibitor.⁴

References: 1. Centers for Disease Control and Prevention. Recommended adult immunization schedule for ages 19 years or older. Updated August 14, 2024. Accessed August 26, 2024. <https://www.cdc.gov/vaccines/hcp/immunization-schedules/downloads/etr/adult/adults-schedule-easy-read.pdf> 2. Centers for Disease Control and Prevention. ACIP recommendations. Updated June 28, 2024. Accessed July 25, 2024. <https://www.cdc.gov/vaccines/acip/recommendations.html> 3. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Prevention and Treatment of Cancer-Related Infections V.1.2024. © National Comprehensive Cancer Network, Inc. 2024. All rights reserved. Accessed July 3, 2024. To view the most recent and complete version of the guidelines, go online to NCCN.org. NCCN makes no warranties of any kind whatsoever regarding their content, use or application and disclaims any responsibility for their application or use in any way. 4. Centers for Disease Control and Prevention. Use of respiratory syncytial virus vaccines in adults aged ≥60 years: updated recommendations of the advisory committee on immunization practices — United States, 2024. August 15, 2024. Accessed August 26, 2024. <https://www.cdc.gov/mmwr/volumes/73/wr/pdfs/mm7332e1-H.pdf>

Points of Care Outside of the PCP Office

Patients with Chronic Conditions Have Numerous Healthcare Encounters Outside of the PCP Office

- ➔ In a 2021 survey, 35% of patients with chronic conditions report not seeing a **PCP** in the past year¹
- ➔ **Primary care** represents ~39% of office visits in patients with multiple chronic conditions. **Specialty care** represents ~61% of office visits in patients with chronic disease²
- ➔ In 2014, depending on the number of chronic conditions (1-5+)³:
 - 6% to 24% of adults had **≥1 hospitalization** per year
 - The average number of **outpatient visits** ranged from 6 to 20 per year
 - The average number of **prescription fills** ranged from 9 to 51 per year



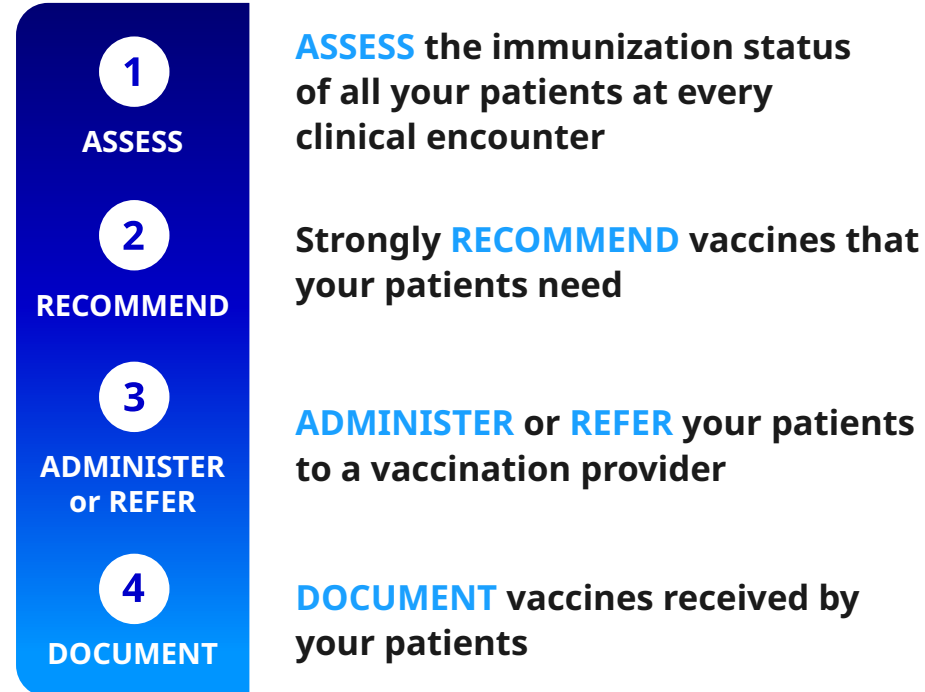
These healthcare encounters present opportunities to ASSESS, RECOMMEND, ADMINISTER or REFER, and DOCUMENT vaccinations in patients with chronic conditions⁴

PCP=primary care provider.





References: 1. National Foundation for Infectious Diseases. 2021 chronic health conditions surveys: gaps between healthcare professionals and adult patients. Accessed August 26, 2024. <https://www.nfid.org/infectious-diseases/2021-chronic-health-conditions-survey-gaps-between-healthcare-professionals-and-adult-patients/> 2. Ward BW, Myrick KL, Cherry DK. Physician specialty and office visits made by adults with diagnosed multiple chronic conditions: United States, 2014-2015. *Public Health Rep.* 2020;135(3):372-382. 3. Buttorff C, Ruder T, Bauman M. Multiple chronic conditions in the United States. Accessed August 26, 2024. https://www.rand.org/content/dam/rand/pubs/tools/TL200/TL221/RAND_TL221.pdf 4. Centers for Disease Control and Prevention. Standard for adult immunization practice. Updated May 2, 2016. Accessed July 12, 2024. <https://www.cdc.gov/vaccines/hcp/adults/for-practice/standards/index.html>

Strategies and Best Practices for Prioritizing Vaccinations

CDC Standards for Adult Immunization Practice¹



Help Improve Vaccination Rates in Patients with Chronic Conditions

-  Assess patient vaccination status at every encounter with the healthcare system to help decrease missed opportunities to vaccinate²
-  Provide a strong recommendation from an HCP and/or specialist to motivate a patient with chronic conditions to vaccinate³
-  Use specialist visits, telehealth visits, hospital stays, and post-discharge follow-up
-  Collaborate with network specialty pharmacies

CDC Standards for Adult Immunization Practice emphasize the role of ALL HCPs—whether they provide immunization services or not—in ensuring that adult patients are fully immunized¹

HCP=healthcare professional.

References: 1. Centers for Disease Control and Prevention. Standard for adult immunization practice. Updated May 2, 2016. Accessed August 26, 2024. <https://www.cdc.gov/vaccines-adults/hcp/imz-standards/index.html> 2. Centers for Disease Control and Prevention. Vaccine needs assessment. A series on standards for adult immunization practice. Accessed August 26, 2024. <https://www.cdc.gov/vaccines/hcp/adults/downloads/standards-immz-practice-assessment.pdf> 3. Centers for Disease Control and Prevention. Chapter 3: Immunization Strategies for Healthcare Practices and Providers. In: Hall E, Wodi AP, Hamborsky J, Morelli V, Schillie S, eds. *Epidemiology and Prevention of Vaccine-Preventable Diseases*. 14th ed. Public Health Foundation; 2021:30-41.