

Are We Following Evidence Based Guidelines for Pneumococcal and Zoster Vaccinations in Adults Living with HIV?

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Background

- Adults living with HIV are at higher risk for severe pneumococcal and zoster infections than the general population. Multiple pneumococcal and zoster vaccines are available that can prevent morbidity and mortality.
- Vaccine uptake in the Rutgers University Hospital Infectious Disease clinic is unknown
- We conducted a Quality Assurance study to determine what percentage of patients are vaccinated against pneumococcal and zoster infection in accordance with evidence-based guidelines
- Guidelines for patients living with HIV recommend a single dose of the 13-valent conjugate vaccine (PCV13), sold as Prevnar, and up to three doses of the 23-valent polysaccharide vaccine (PPSV23), sold as Pneumovax
- Guidelines for zoster vaccination during the study period were a 2-dose series of recombinant zoster vaccine (RZV), sold as Shingrix, for patients aged 50 and over.

Methods

- **Study population:** A random sample of 50 adult patients living with HIV with a visit to the Infectious Disease Clinic between 1/1/2019 and 9/1/2021
- **Data collection:** Data collected included pneumococcal and zoster vaccination status, CD4 count, and HIV viral load
- **Guidelines used:** Infectious Disease Society of America (IDSA) for pneumococcal vaccination [1]. US Department of Health and Human Services (HHS) for zoster vaccination [2].
- **Statistical Analysis:** 95% confidence intervals were generated for vaccination rates. All patients were included in the pneumococcal analysis. Only patients aged 50 and over were included in zoster analysis. Patients were stratified by CD4 count and HIV viral load

Results

Table 1. Patients' characteristics

Characteristic of 50 patients	N (%)
Male	22 (44)
Female	28 (56)
Age <50	8(16)
Age 50-59	25 (50)
Age 60-69	16 (32)
Age 70-79	1(2)
CD4 < 200	5 (10)
HIV Viral Load undetectable	35(70)
HIV Viral Load ≤100	8 (16)
HIV Viral Load 100 > 1000	2 (4)
HIV Viral Load 1000 > 5000	1 (2)
HIV Viral Load > 5000	4 (8)

Table 2: Vaccination summary

Vaccine	% [95% CI] with any vaccination	% [95% CI] fully vaccinated
RZV (Shingrix)	7.1 [2.5, 11.9]	2.4 [0.42, 4.3]
PCV13 (Prevnar)	64 [50.1, 75.9]	64 [50.1, 75.9]
PPSV23 (Pneumovax)	60 [46, 72]	38 [25.9, 51.9]

Conclusion

- **Key Findings:** Pneumococcal vaccination rates were above the 2018 national estimate for patients living with HIV of 23.3% (95% CI 22.0–24.6) with any vaccination [3]. The zoster vaccination rate was low but comparable to the 2018 estimate for the general population of 0.6% (95% CI 0.5-0.8) fully vaccinated.
- **Study limitations:** Only 50 charts were reviewed out of 442 unique patients, which generated wide confidence intervals.
- **Future directions:** To address low zoster vaccination rates, a Quality Improvement study is being planned consisting of provider and patient education and automated reminders.

[1] Rubin LG, Levin MJ, Ljungman P, et al. Infectious Diseases Society of America. 2013 IDSA clinical practice guideline for vaccination of the immunocompromised host. Clin Infect Dis. 2014 Feb;58(3):e44-100. doi: 10.1093/cid/cit684. Epub 2013 Dec 4. Erratum in: Clin Infect Dis. 2014 Jul 1;59(1):144

[2] Department of Health and Human Services. Panel on Opportunistic Infections in HIV-Exposed and HIV-Infected Children. Guidelines for the prevention and treatment of opportunistic infections in HIV-exposed and HIV-infected children. aidsinfo.nih.gov/contentfiles/lvguidelines/oi_guidelines_pediatrics.pdf (Accessed Feb 1, 2022)

[3] Lu P, Hung M, Srivastav A, et al. Surveillance of Vaccination Coverage Among Adult Populations — United States, 2018. MMWR Surveill Summ 2021;70(No. SS-3):1–26. doi: 10.15585/mmwr.ss7003a1