

Functional or Anatomical Asplenia Vaccine Guide

I. PURPOSE

To outline appropriate vaccines targeting encapsulated bacteria for functional or anatomical asplenic patients. Routine vaccines that may also be indicated but not addressed here but include influenza, Tdap, Zoster, HPV, MMR, Varicella.^{1,2,3}

II. Background

Splenectomized patients should be vaccinated to decrease the risk of postsplenectomy sepsis due to organisms such as *Streptococcus pneumoniae*, *Haemophilus influenzae type B*, and *Neisseria meningitidis*. Guidelines are based on CDC recommendations.

III. Procedures/Guidelines^{1,2,3,6,7,8}

The regimen consists of **4 vaccines** initially, followed by repeat doses as specified:

1. Haemophilus b conjugate (Hib) vaccine (ACTHIB®) IM once if they have not previously received Hib vaccine
2. Pneumococcal conjugate 13-valent (PCV13) vaccine (PREVNAR 13®) IM once
 - 2nd dose: Pneumococcal polysaccharide 23-valent (PPSV23) vaccine (PNEUMOVAX 23®) SQ/IM once given ≥ 8 weeks later, then 3rd dose as PPSV23 > 5 years later.⁴

Note: the above is valid for those who have not received any pneumococcal vaccines previously, or those with unknown vaccination history. If already received ≥1 prior doses of PPSV23: give PCV13 at least 1 year after last PPSV23 dose.
3. Meningococcal conjugate vaccine (MenACWY-CRM, MENVEO®) IM (repeat in ≥ 8 weeks, then every 5 years thereafter)
4. Meningococcal serogroup B vaccine (MenB, BEXSERO®) IM (repeat in ≥ 4 weeks)

Initiation of vaccine regimen:

1. Should be given 14 days before splenectomy, if possible. Doses given during the 2 weeks (14 days) before surgery can be counted as valid.
2. If the doses cannot be given prior to the splenectomy, they should be given as soon as the patient's condition has stabilized after surgery. Limited data exists for waiting until 14 days post-op, and may lead to missed vaccine administration.⁵⁻⁷

SHC Guidelines for Functional or Anatomical Asplenia (Adapted from CDC 2016)		
Dose #1 day 1	Dose #2	
	4 weeks	8 weeks
Haemophilus b conjugate [Hib (ActHIB®)]†	n/a	n/a
Meningococcal conjugate [MenACWY-CRM (Menveo®)]‡	n/a	Meningococcal conjugate (same product as Dose #1)
Meningococcal serogroup B [MenB (Bexsero®)]	Meningococcal serogroup B [MenB (Bexsero®)]	n/a
Pneumococcal conjugate 13-valent [PCV13 (Prevnar 13®)]*	n/a	Pneumococcal polysaccharide 23-valent [PPSV23 (Pneumovax 23®)]

† Applies to patients that have not previously received Hib vaccine (e.g. as part of routine childhood series)
 ‡ Menveo preferred over Menactra if coadministered with PCV13
 * Applies to those who have no hx of pneumococcal vaccines or PCV13, or those with unknown vaccination history (see appendix B)



IV. **References**

1. <http://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html>
2. <http://www.fda.gov/downloads/BiologicsBloodVaccines/Vaccines/ApprovedProducts/UCM431447.pdf>
3. <http://www.cdc.gov/vaccines/adults/rec-vac/health-conditions/asplenia.html>
4. <http://www.cdc.gov/vaccines/vpd-vac/pneumo/downloads/adult-vax-clinician-aid.pdf>
5. Immunization Action Coalition Express, Issue 1194: July 15, 2015
6. Konradsen, H. B., et al. "Antibody levels against Streptococcus pneumoniae and Haemophilus influenzae type b in a population of splenectomized individuals with varying vaccination status." *Epidemiology and Infection* 119.02 (1997): 167-174.
7. Shatz, David V., et al. "Immune responses of splenectomized trauma patients to the 23-valent pneumococcal polysaccharide vaccine at 1 versus 7 versus 14 days after splenectomy." *Journal of Trauma and Acute Care Surgery* 44.5 (1998): 760-766.
8. Hammerquist, Rhonda J., et al. "Vaccinations in asplenic adults." *American Journal of Health-System Pharmacy* 73.9 (2016).

V. **Document Information**

- A. Original Author/Date: Lina Meng, PharmD, BCPS, Abraham Chang, PharmD, BCOP:
2/5/2016
- B. Gatekeeper:
Antimicrobial Stewardship Program, Department of Pharmacy
- C. Review and Renewal Requirement
This document will be reviewed every three years and as required by change of law or practice
- D. Revision/Review History
Stan Deresinski, MD, Aruna Subramanian, MD 2/18/2016, David Spain, MD, FACS
2/19/2016
Lina Meng, PharmD, BCPS 3/29/2017
- E. Approvals
 1. Antimicrobial Subcommittee 2/29/2016, 8/17/2017
 2. Vaccine Subcommittee 4/5/2017
 3. P&T 9/15/2017

This document is intended only for the internal use of Stanford Health Care (SHC). It may not be copied or otherwise used, in whole, or in part, without the express written consent of SHC. Any external use of this document is on an AS IS basis, and SHC shall not be responsible for any external use.



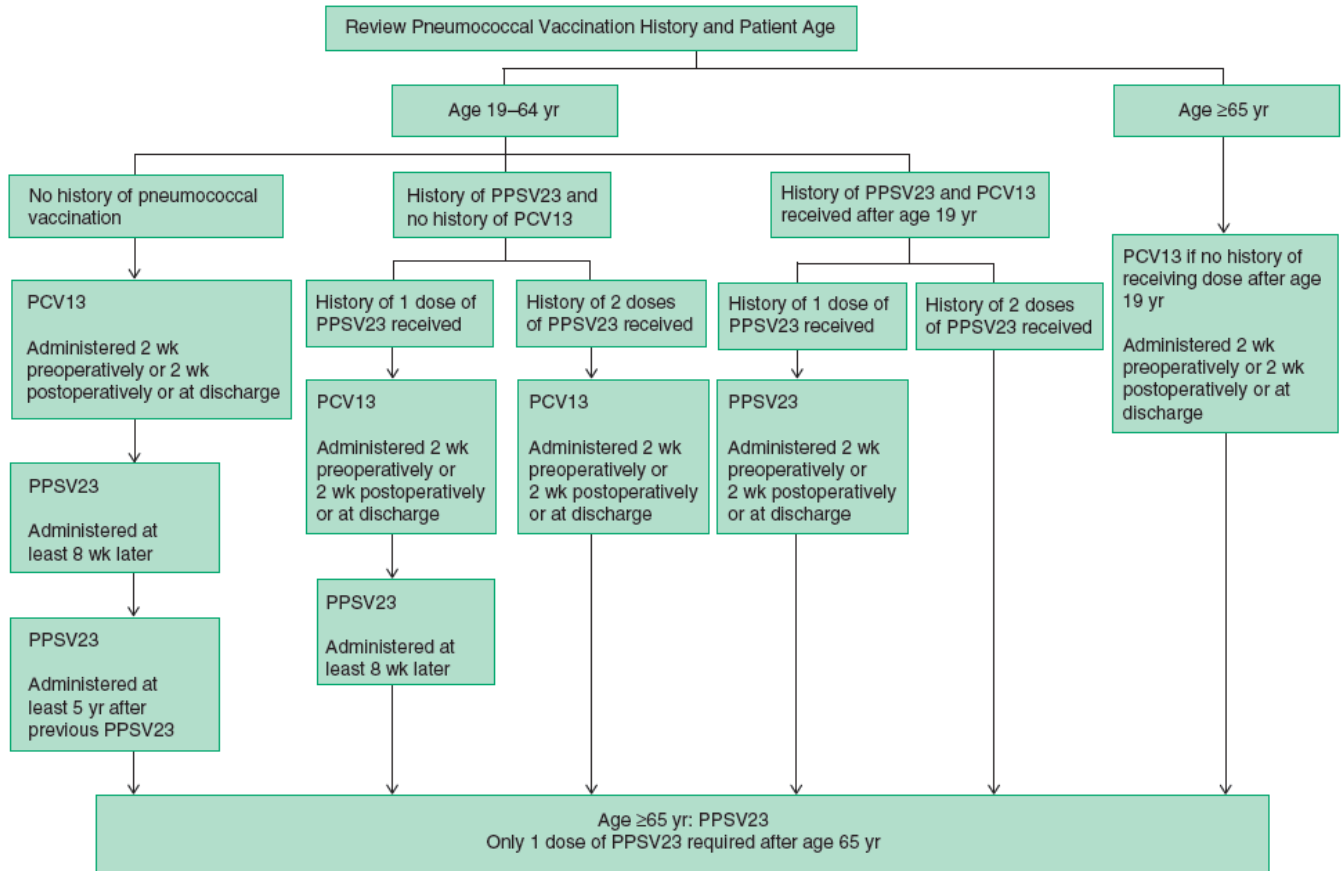
Appendix A: How to order in EPIC

1. Type “splenectomy” or “asplenia”

Code	Name
O173049	SPLENECTOMY/ASPLENIA VACCINES

2. All necessary vaccines will appear. Review before signing. Start dates will be auto-timed as specified in this guideline

Appendix B: Pneumococcal vaccination recommendations and timing of administration for adult patients with asplenia⁸



Abbreviations: PCV13 = pneumococcal 13-valent conjugate vaccine, PPSV23 = pneumococcal 23-valent polysaccharide vaccine