POST-TRANSPLANT VACCINATIONS

SIGNATURE PAGE

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Periodic Review

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POST-TRANSPLANT VACCINATIONS

I. Purpose

To assure that all patients receiving care following a hematopoietic stem cell transplant or cellular therapy product infusion have reduced risk of preventable infections and diseases through administration of vaccines.

II. Scope

This Standard Practice Guideline applies to patients who received allogeneic stem cell transplants, autologous stem cell transplants or IEC therapy. These guidelines would also apply to any patients receiving care post stem cell transplant care in either the Long-Term Transplant Care Clinic or SCT Survivorship Clinics. It is recommended all household contacts of SCT or IEC recipients remain up to date on age-appropriate vaccine recommendations.

III. Procedure

A. ALLOGENEIC SCT RECIPIENTS

Vaccine	3 months	4 months	5 months	6 months	7 months	8 months	10 months	12 months	14 months	17 months	24 months
Influenza **(High-dose preferred)**[1,2]		**X**[2]	**X**[2]					**Annually**[3]			
Pneumococcal 15-Valent **OR** 20-Valent Conjugate Vaccine[4,5]	**X**	**X**	**X**					**X**[6]			**X**[7] **& every 3 years**
Pneumococcal-23 vaccine (Pneumovax-23)[5]										**X**[5]	**X**[7] **& every 3 years**
Shingrix								**X**	**X**[8]		

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Vaccine	3 months	4 months	5 months	6 months	7 months	8 months	10 months	12 months	14 months	17 months	24 months
SARS-CoV-2[9]	**X**	**X**	**X**			**X** (optional)		**X** (optional)			
Hepatitis B **(High-dose preferred)**[1,2]				**X**		**X**	**X**				**Annually**[7] (if negative titers)
Haemophilus influenzae type b (Hib) conjugate[10]				**X**		**X**	**X**				**Annually**[7] (if negative titers)
Inactivated polio (IPV)[10]				**X**		**X**	**X**				
Tetanus, Diphtheria, Pertussis **(DTaP preferred)**[11]				**X**		**X**	**X**				
Human Papilloma Virus **(HPV; up to age 45 years)**[12]				**X**		**X**		**X**			
Meningococcal (ACWY and B)[13]				**X**[13]				**X**[13]			
Measles/Mumps/ Rubella (MMR)[14-16]											**X**[14-16]
Respiratory Syncytial Virus (RSV)[17]								**X**			

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B. AUTOLOGOUS SCT AND IEC RECIPIENTS

Vaccine	3 months	4 months	5 months	6 months	7 months	8 months	10 months	12 months	14 months	17 months
Influenza **(High-dose preferred)**[1,2]	**X (6 weeks)**[2]							**Annually**[3]		
Pneumococcal 15-Valent **OR** 20-Valent Conjugate Vaccine[4,5]	**X**	**X**	**X**					**X**[6]		
Pneumococcal-23 vaccine (Pneumovax-23)[5]										**X**[5,6]
Shingrix								**X**	**X**[8]	
SARS-CoV-2[10]	**X**	**X**	**X**			**X** (optional)		**X** (optional)		
Hepatitis B **(High-dose preferred)**[1,2]				**X**		**X**	**X**			
Haemophilus influenzae type b (Hib) conjugate[10]				**X**		**X**	**X**			
Inactivated polio (IPV)[10]				**X**		**X**	**X**			

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Vaccine	3 months	4 months	5 months	6 months	7 months	8 months	10 months	12 months	14 months	17 months
Tetanus, Diphtheria, Pertussis **(DTaP preferred)**[11]				X		X	X			
Human Papilloma Virus **(HPV; up to age 45 years)**[12]				X		X		X		
Meningococcal (ACWY and B)[12]				X[13]				X[13]		
Respiratory Syncytial Virus (RSV)[17]								X		

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Note: These comments apply to both Tables for Allogeneic and Autologous/ IEC Recipients

1) High dose recommended based on risk versus benefit and evidence in immunosenescence and aging immune response. **Live attenuated vaccine should NOT be given.** If high-dose formulation is not available, high-dose equivalent such as influenza adjuvant vaccine is acceptable. High-dose hepatitis B is also preferred. Although it has limited data in the SCT population, hepatitis B adjuvanted recombinant vaccine (Heplisav-B) is acceptable if only option available.
2) Per NMDP guidelines.
3) If <65, not on maintenance chemotherapy, and without relapse, auto-SCT and IEC patients should receive standard age appropriate dose influenza vaccine.
4) Can be administered at 1-month intervals. If patient is started on PCV13 or PCV15, can change to PCV20 at next dose due per schedule. The fourth dose of PCV20 should be given 6 months after the third dose or 1 year after transplant (whichever is later). If PCV20 is given, do NOT give PPSV-23.
5) If PCV15 is the only conjugate vaccine available, it should be given at 1-month intervals followed by PPSV23 1 year after the last dose of PCV15. If patient develops chronic GVHD, give a fourth dose of PCV15 instead of PPSV23.
6) If using PCV15, give 4th dose if patient has cGVHD. If using PCV20, give 4th dose of PCV20.
7) Titers will be obtained annually until positive. In patients with negative titers, give annually (for pneumococcal vaccination – give conjugate vaccine first followed 4 weeks later by PPSV23; hepatitis B, and Hib). Pneumococcal booster should be given every 3 years.
8) Second dose to be given 2-6 months after first dose.
9) Per CDC recommendations for mRNA series. For SCT or IEC recipients who received COVID-19 vaccination prior to SCT or IEC, re-vaccination is recommended based on CDC recommendations for an unvaccinated patient. Booster doses may be administered based on CDC recommendations or attending physician discretion. Booster doses can be given as soon as 2 months after the most recent mRNA.
10) Can administer at 1-month intervals.
11) DTaP is recommended and preferred due to evidence in children that Tdap is inadequate and waning immunogenicity in non-immunocompromised patients. If DTaP is not available, recommend utilizing 3 doses of Tdap, OR one dose of Tdap and 2 doses of DT OR one dose of Tdap and 2 doses of Td.
12) Recommendation regardless of prior sexual activity and exposure to carcinogenic strains.
13) Give in splenectomized patients and consider in others felt to be at risk (e.g., - functional asplenia, HIV infection, persistent complement component deficiency, complement inhibitor use – ex eculizumab, ravulizumab). Recommendation is for ACWY and B vaccines, which can be given the same time but in separate arms if possible. If patients are to receive Menactra (specific ACWY vaccine), it is recommended to wait until 4 weeks after the last dose of PCV vaccine (either PCV15 or PCV20).
14) **DO NOT GIVE live attenuated vaccine** if still on immunosuppression or active GVHD. **Not recommended for recipients of autologous SCT or IEC.**
15) High risk individuals (ex. unvaccinated or immunocompromised) should avoid direct contact with patient for 2-3 weeks post vaccination
16) May consider earlier vaccination for high-risk population (increased measles transmission and/or community outbreak)
17) Recommended consider administration regardless of age due to likely benefit in younger immunocompromised population. If benefit thought to outweigh risk given season, consider administering earlier than 12 months.

IV. References

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Revision History

Version #	Effective Date	Developer	Description of Change(s)
2.0	01/08/2024	K Shultes, R Jayani	• Multiple updates to follow CDC and other most current recommendations for best medical practices.
1.02	5/31/2022	K Shultes, R Jayani	• Scope: Removed guidance for Household Contacts from tables. Now recommends they keep current on vaccinations. • Both tables: Updated guidance for Pneumococcal 15-Valent Conjugate Vaccine (Vaxneuvance). • Both tables: Second SARS-CoV-2 vaccination @ 12 months is now listed as optional. • Further clarification notes added to Comments Table, as denoted in the Chart for each type of CTP infusion.
1.01	2/4/2022	R Jayani	• Further clarification notes added to Comments Table, as denoted numerically 12 – 15 in the Chart for each type of CTP infusion.
1.00	11/22/2021	R Jayani	• New SPG that addresses most current guidance about vaccinations in both SCT and autologous immune effector cell infusions patients.