



# Navigating the HCT Journey: Understanding the Process in the United States

**Maritza Alencar, DNP, MBA, APRN-BC, BMTCN, FAANP**  
**Clinical Assistant Professor**  
Florida International University,  
Nicole Wertheim College of Nursing and Health Sciences

**FIU**



# Disclosures

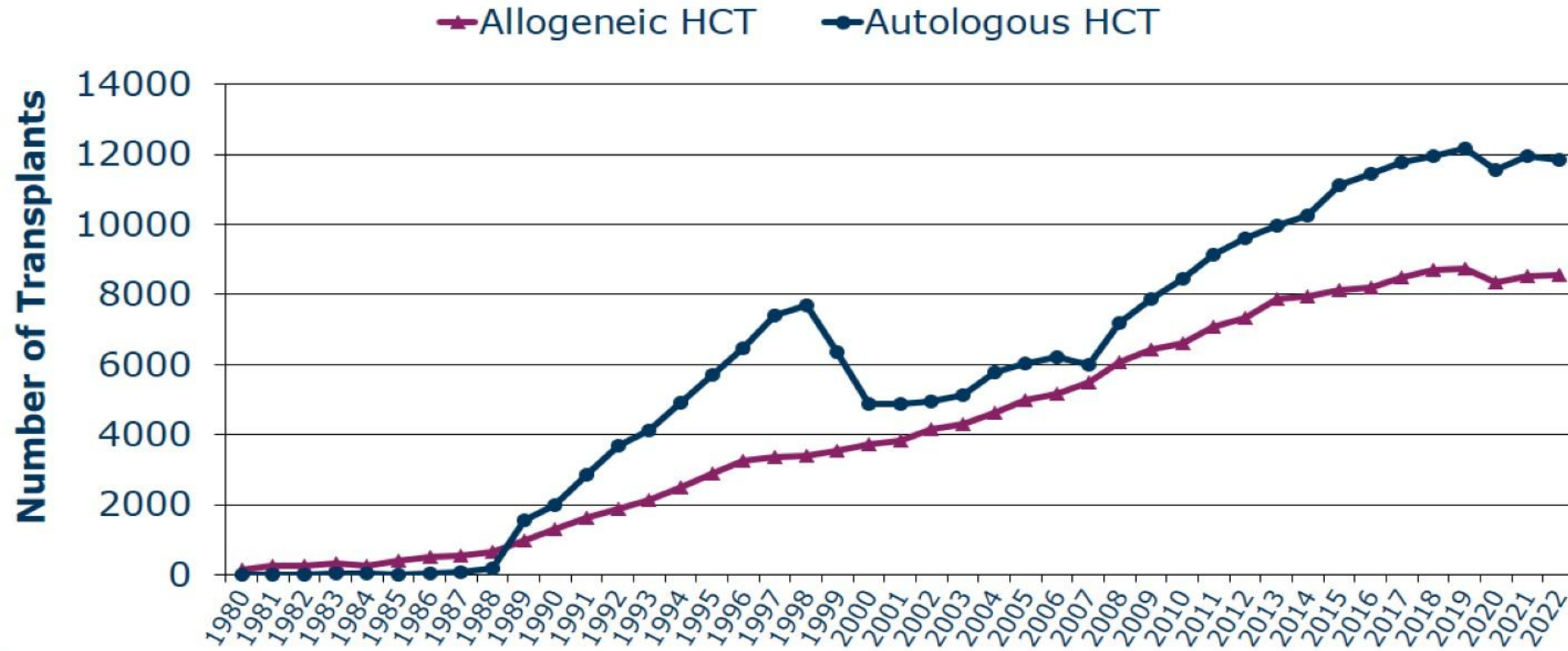
- Nothing to disclose

# Objectives

- Explain the steps involved in stem cell collection
- Identify ethical, logistical, and policy issues
- Summarize post-transplant care and monitoring

# Current Trends in HCT

Number of 1st HCTs Reported to CIBMTR in the US



# Pre-Transplant

# Timing for Referrals is Critical

- The optimal timing for HCT is disease specific
- Outcomes can be highly dependent upon transplant timing
- Early referral to a transplant center is a critical step that can affect survival
- Recommended timing for transplant consultation guidelines have been developed by:
  - National Marrow Donor Program
  - Be The Match
  - ASTCT

# General Eligibility Criteria

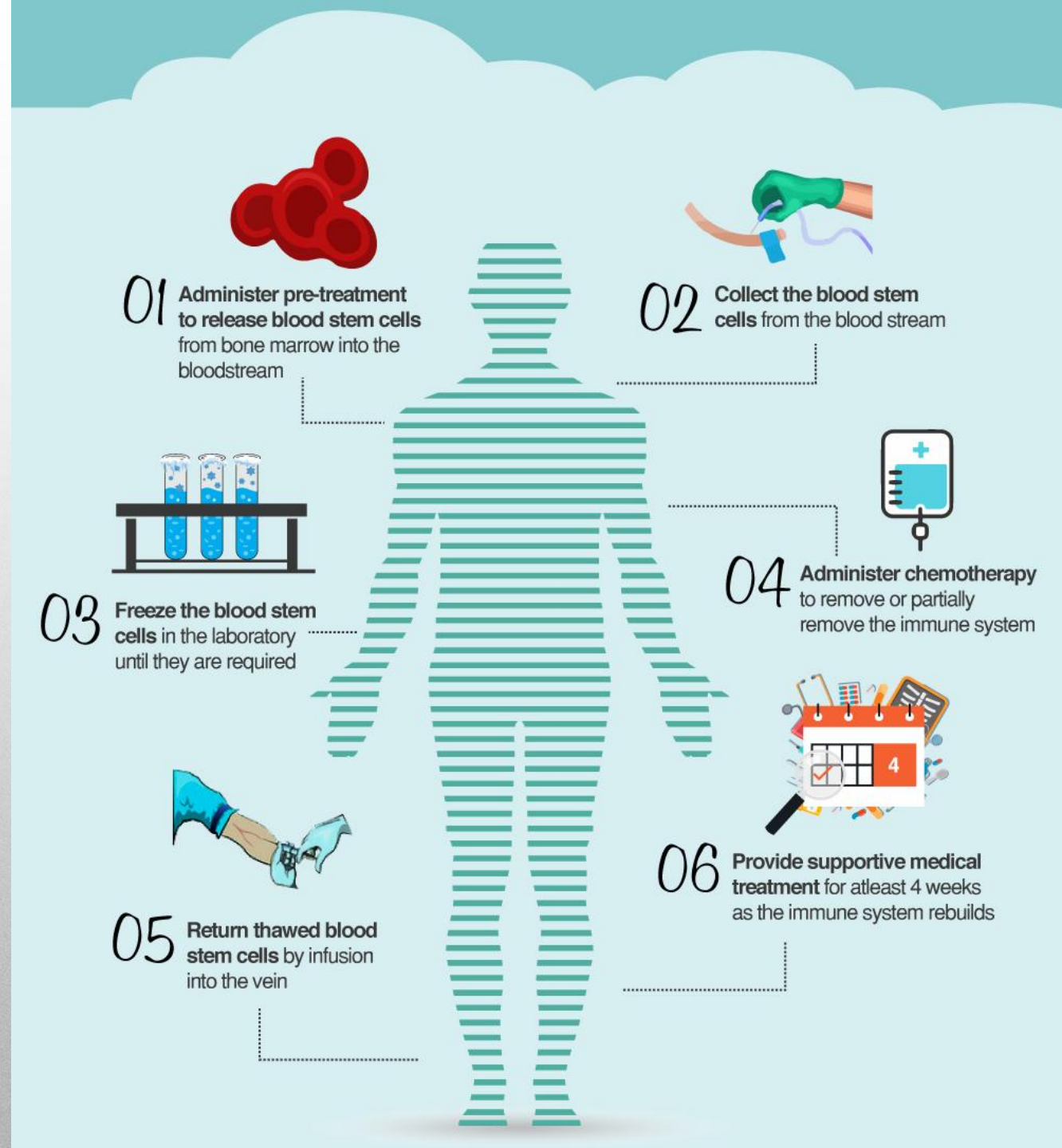
- Clinical Factors
- HCl-CI Tool
- Disease Stage
- Previous treatments (chemotherapy/radiation)
- Infectious Disease
- Transfusion history
- Performance status
- Chronological age alone should not determine eligibility
- Age
- Karnofsky performance score
- Left ventricular ejection fraction
- Pulmonary function test; forced vital capacity
- Diffusion capacity (DLCO)
- Kidney function
- Liver function
- Mental health

Source: NMDP at <https://network.nmdp.org/services-support/hematology-oncology/consultation-guidelines-outcomes/patient-eligibility-for-hct>

# General Eligibility Criteria

- Donor eligibility
  - **29%-79%** of patient have an available and willing HLA-matched donor
  - Determined by inherited tissue type (ethnicity)
- Psychosocial evaluation is essential
- Availability of a qualified and available caregiver is prerequisite
- Financial and treatment center criteria

# HCT Process





# Types of Conditioning Regimens

Myeloablative Conditioning (MAC)	Reduced-Intensity Conditioning (RIC)	Non-Myeloablative Conditioning
<ul style="list-style-type: none"><li>• High-intensity chemotherapy and/or radiation</li><li>• Completely destroys bone marrow</li><li>• Used for younger, fit patients</li></ul> <p><i>Examples:</i></p> <ul style="list-style-type: none"><li>• <i>Busulfan + Cyclophosphamide</i></li><li>• <i>Total Body Irradiation (TBI) + Cyclophosphamide</i></li></ul>	<ul style="list-style-type: none"><li>• Milder chemotherapy/radiation</li><li>• Doesn't fully ablate marrow but allows donor engraftment</li><li>• Used in older or less fit patients</li></ul> <p><i>Examples:</i></p> <p><i>Fludarabine + Melphalan</i> <i>Fludarabine + Busulfan (lower dose)</i></p>	<ul style="list-style-type: none"><li>• Minimal bone marrow suppression.</li><li>• Relies more on graft-versus-tumor effect for disease control.</li><li>• Often includes low-dose TBI and immunosuppressants like Fludarabine.</li></ul>

- **Immunosuppressants (sometimes part of regimen):** Anti-thymocyte globulin (ATG), Alemtuzumab.

# Goals of Conditioning

- **Eradicate malignant cells** (in cancers like leukemia or lymphoma)
- **Suppress the immune system** to prevent graft rejection
- **Create space** in the bone marrow for new (donor) stem cells to engraft

# Risks and Side Effects

- Infection risk due to immune suppression.
- Organ toxicity (e.g., liver, lungs).
- Mucositis, nausea, fatigue.
- Graft-versus-host disease (GVHD), especially in allogeneic HCT.

# Post-Transplant

# After Day 100: The Role of the Oncology Advanced Practitioner

- Multidisciplinary practice is essential to effective management of the patient and their family post-HCT
- Early identification of infection
- Early identification of relapse
- Screening and prevention of late effects
- Psychosocial support: patient and family
- Referrals to appropriate collaborators

# Long-Term Guidelines



## Long term screening

View early transplant complications and long-term screening and preventative practices to aid post-transplant treatment planning and patient management.

[View screening guidelines](#)



## Vaccinations

Routine administration of vaccinations is vital for prevention of infectious complications. Access recommendations and timing for both autologous and allogeneic transplant recipients.

[View vaccine schedule](#)



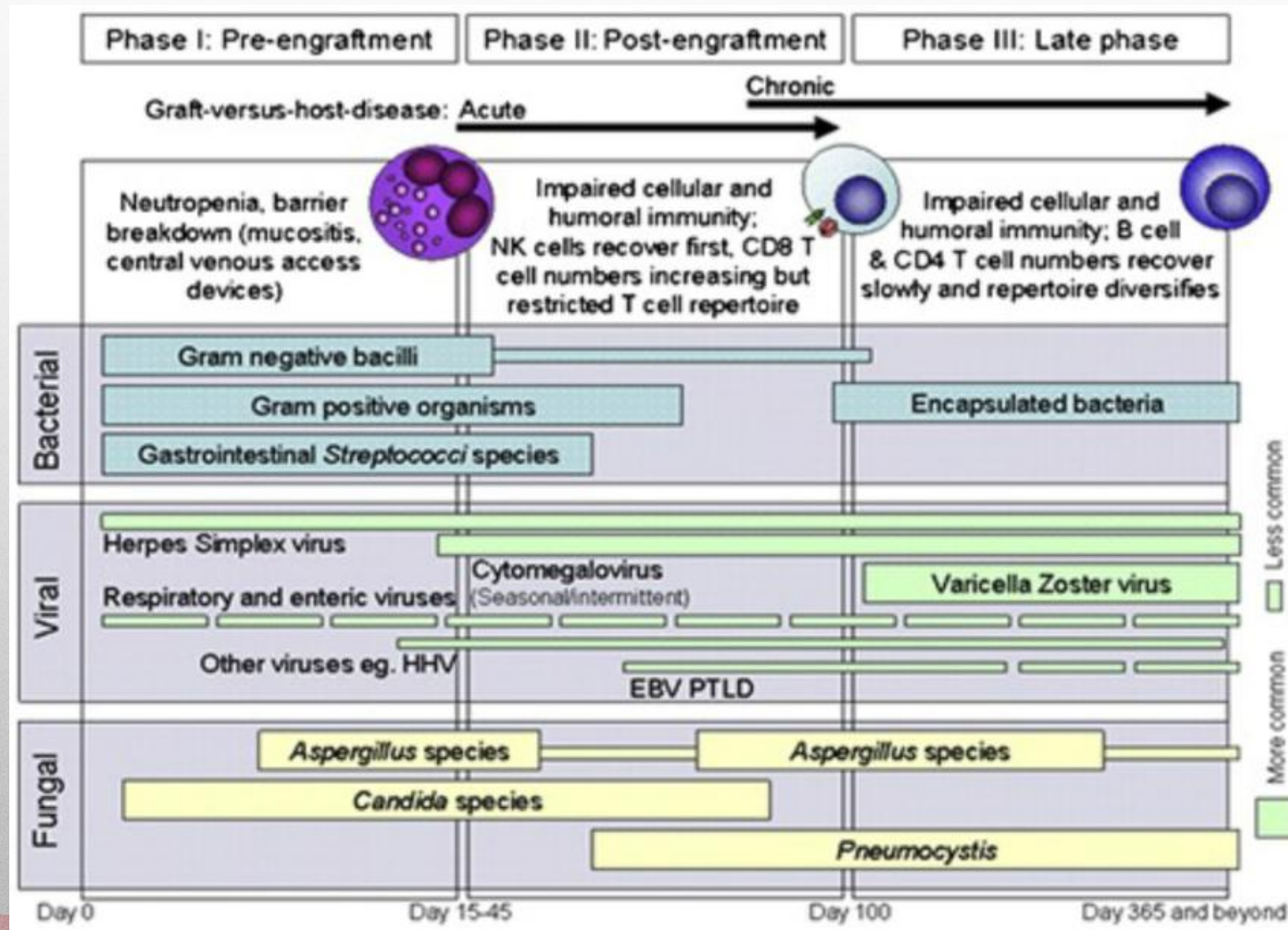
## GVHD screening

Easily identify and evaluate chronic graft-versus-host disease (GVHD) signs and symptoms with a thorough list of clinical manifestations and photos by area of the body.

[View GVHD screening guidelines](#)

Source: NMDP at <https://network.nmdp.org/services-support/hematology-oncology/post-transplant-care>

# Post-Transplant Infections



Source: Tomblyn, M., et al., 2009. Guidelines for preventing infectious complications among HCT recipients: a global perspective

# Vaccination Schedule

Vaccine	Recommended for use after HCT	Months post-HCT to initiate vaccine <sup>a</sup>	No. of doses <sup>b</sup>	Comments
PCV20	Yes	3–6	3–4 based on titers	3 doses, each 2 months apart. If first dose at 3 months, then give a fourth dose at least 6 months after the third dose.
DTaP	Yes	6–12	3	"Pediatric" DTaP favored over Tdap for all ages.
Hib	Yes	6–12	3	
MCV4	Yes	6–12	2	
IPV	Yes	6–12	3	
Hepatitis B	Yes	6–12	3–4	4 double-doses of Engerix for adults (0, 1, 2, 6 months from initiation) or 4 standard doses of Heplisav-B (0, 1, 2, 6 months from initiation). Children receive 3 standard doses of Engerix.
Inactivated influenza (high-dose)	Yes	4–6	2+	In flu season. Two doses of high-dose IIV4 at least for the first post-transplant flu season.
HPV9	Yes	6–12	3	Age 9–26 (up to age 45 with shared medical decision-making).
MMR	Yes	24	2	All ages get 2 doses, 1 month apart as a combination vaccine. Do not give unless also >1 year off IST and <8 months since last dose of IVIG.
Varicella	Yes	24	2	If VZV seronegative after transplant. Can be given as combined MMR-V.
SHINGRIX (Zoster)		12	2	Age ≥8 years, at least 1-year post-transplant and at least 8 months of IST without GVHD flareups (autologous recipients generally have also completed maintenance immunotherapy which prolongs the duration of acyclovir prophylaxis). Only give if patient is VZV seropositive (at least 8 months off IVIG); if seronegative, should instead first complete live attenuated varicella series per above recommendation.
COVID	Yes	3	3–4	Use the most current COVID vaccine (0, 1, 3, 5 months from initiation).

Source: NMDP at <https://network.nmdp.org/services-support/hematology-oncology/post-transplant-care>



- **Quality and Safety Assurance**
  - FACT-accredited programs follow rigorous standards that ensure high-quality patient care and laboratory practices. These standards cover:
    - Clinical care and outcomes
    - Cell collection and processing procedures
    - Staff training and qualifications
    - Documentation and record keeping
- **Voluntary but Influential**
  - Although FACT accreditation is **voluntary**, it is considered a **gold standard** in the field. Many transplant centers pursue it to demonstrate their commitment to excellence

- **Impact on Patient Confidence and Referrals**
  - Accreditation enhances a center's reputation and may influence:
    - Referring physicians' decisions
    - Patients' trust in the center
    - Insurance company or network contracts
- **Compliance with National and International Guidelines**
  - FACT standards align with guidelines from:
    - FDA
    - AABB
    - Joint Commission
    - International Society for Cell & Gene Therapy (ISCT)
    - World Marrow Donor Association (WMDA)

Source: <https://www.factglobal.org/standards/hct-standards/>

- **Potential Requirement for Clinical Trials**
  - Participation in certain clinical trials (e.g., BMT CTN or NIH-funded studies) may require FACT accreditation, making it important for research-active centers.
  - Would you like a summary of the specific standards FACT uses to evaluate programs?



**Muito obrigada!**

Maritza Alencar

Email: [mcardena@fiu.edu](mailto:mcardena@fiu.edu)