QUARTO EVENTO NAZIONALE

SIE incontra i pazienti

Il ruolo attuale del trapianto allogenico

M. Martino (Reggio Calabria)

26 maggio 2025

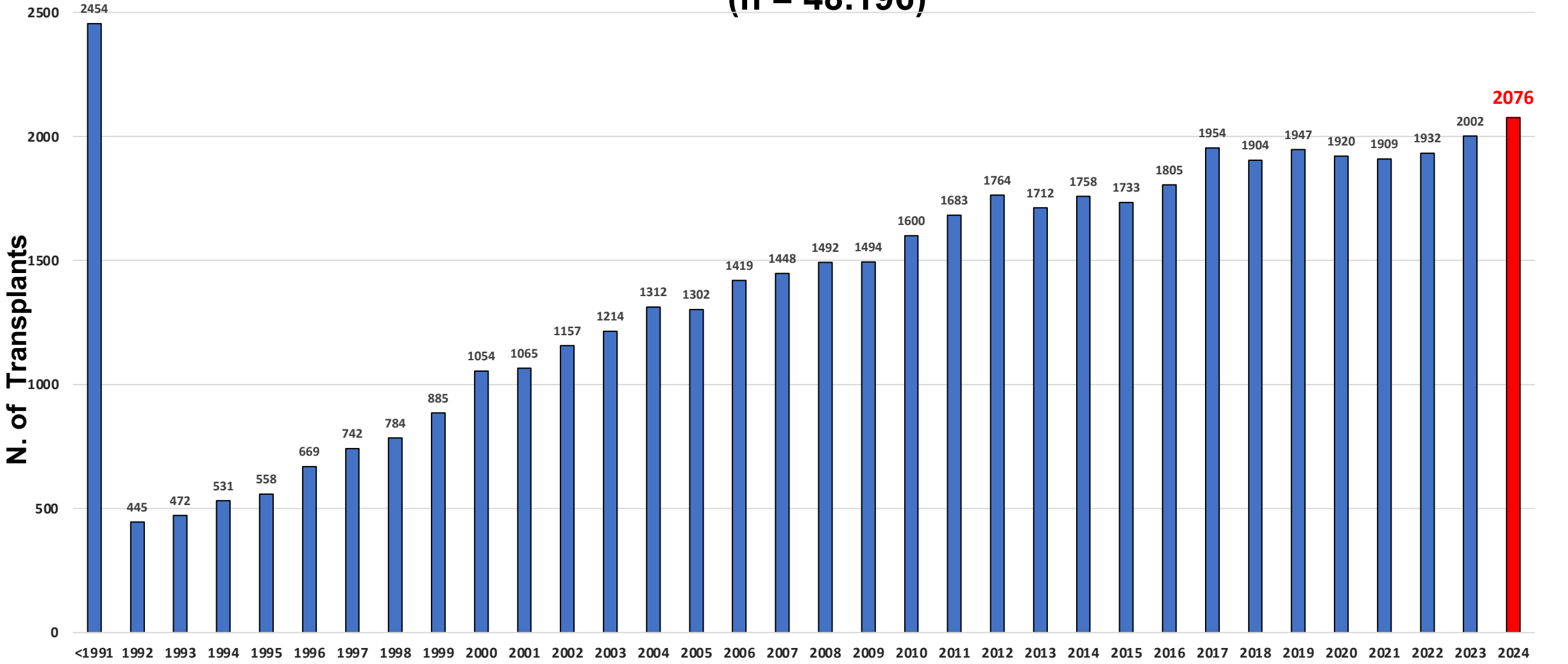
Bologna, Royal Hotel Carlton

Disclosures of Massimo Martino

Company name	Research support	Employee	Consultant	Stockholder	Speakers bureau	Advisory board	Other
KITE/GILEAD					x	x	
BMS					x	x	
Novartis					x	x	
JANSENN CILAG					x	x	
PFIZER						x	
ABBVIE					x		x
SANDOZ	x						
TAKEDA						x	
MEDAC	x				x	x	
GSK						x	
AMGEN					x		
SANOFI						x	

Allogeneic Transplants

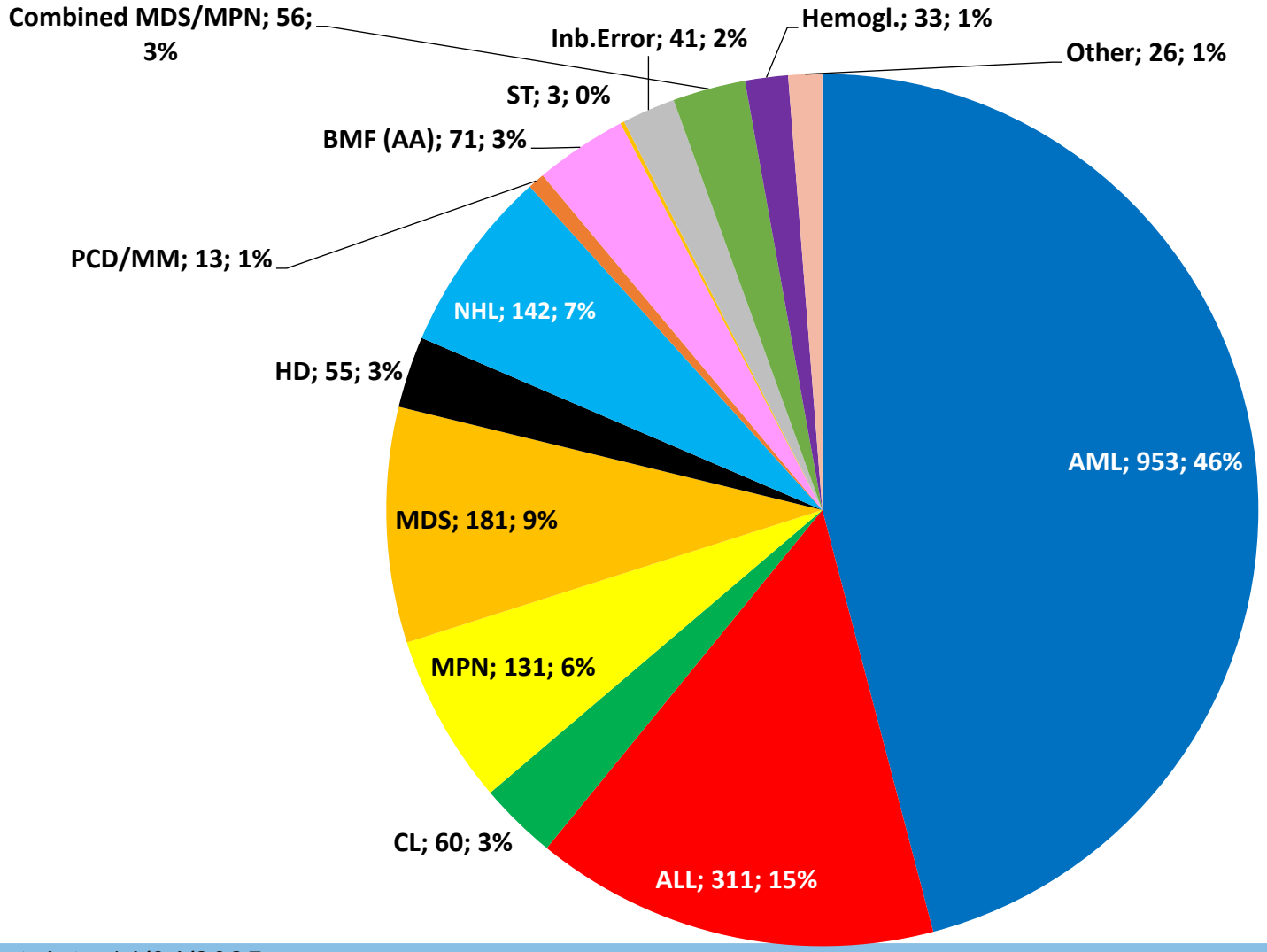
(n = 48.196)



+ 3.7 %

Export date 14/04/2025

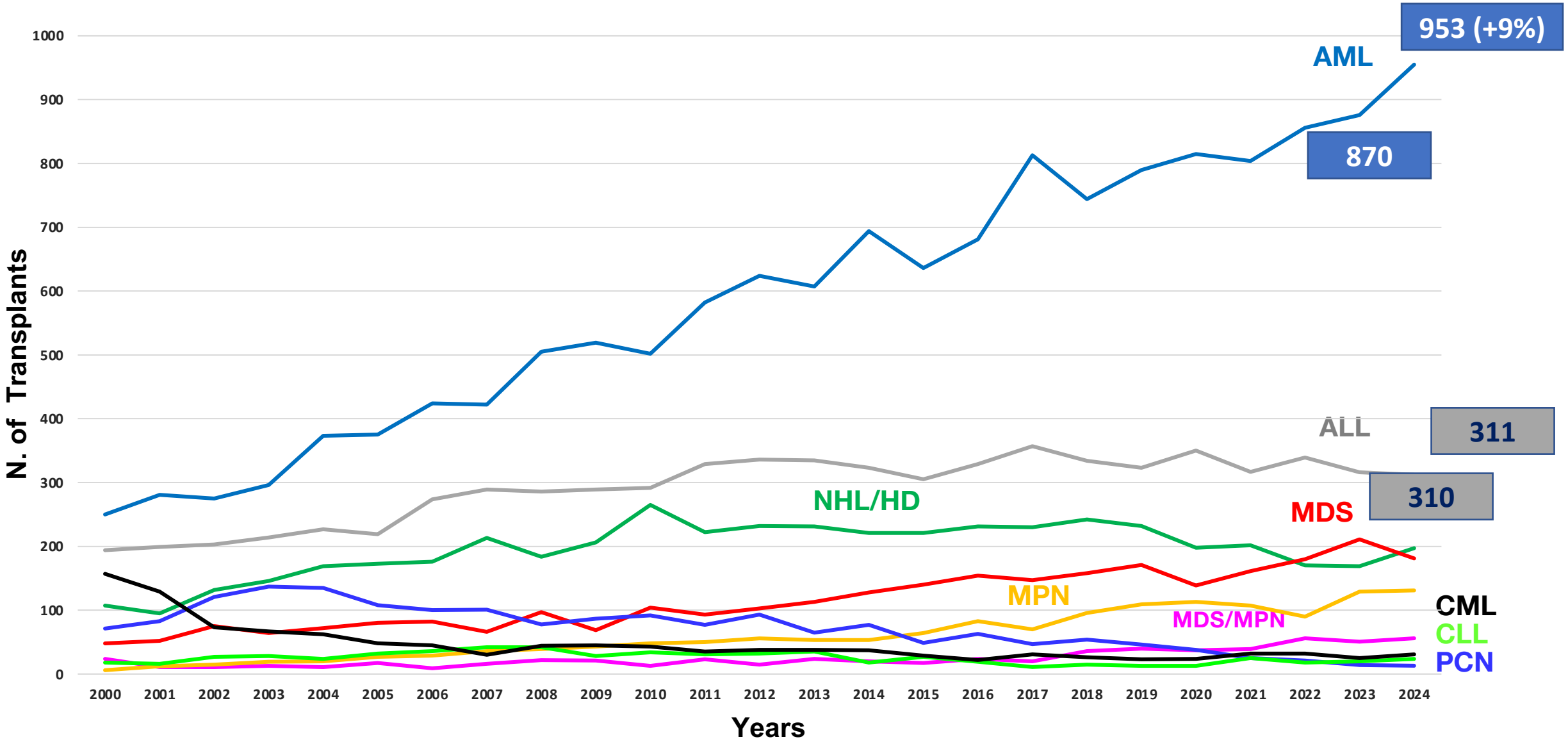
Allogeneic Transplants (n. 2076) - Indications 2024



Disease	%
AML	46
ALL	15
MDS	9
NHL	7
MPN	6
HD	3

Export date 14/04/2025

Number of Allogeneic HCTs in Italy by Selected Disease



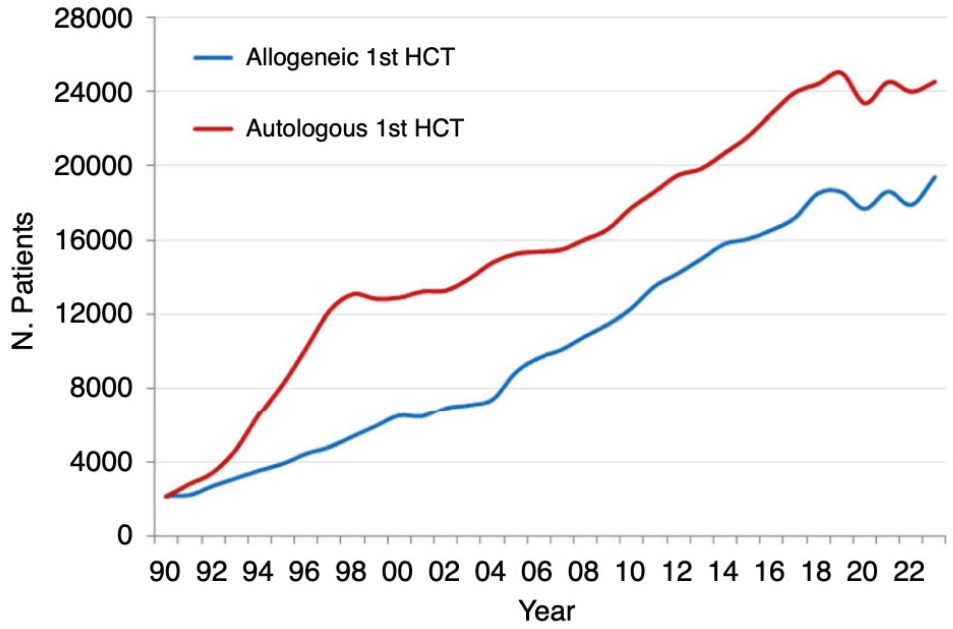
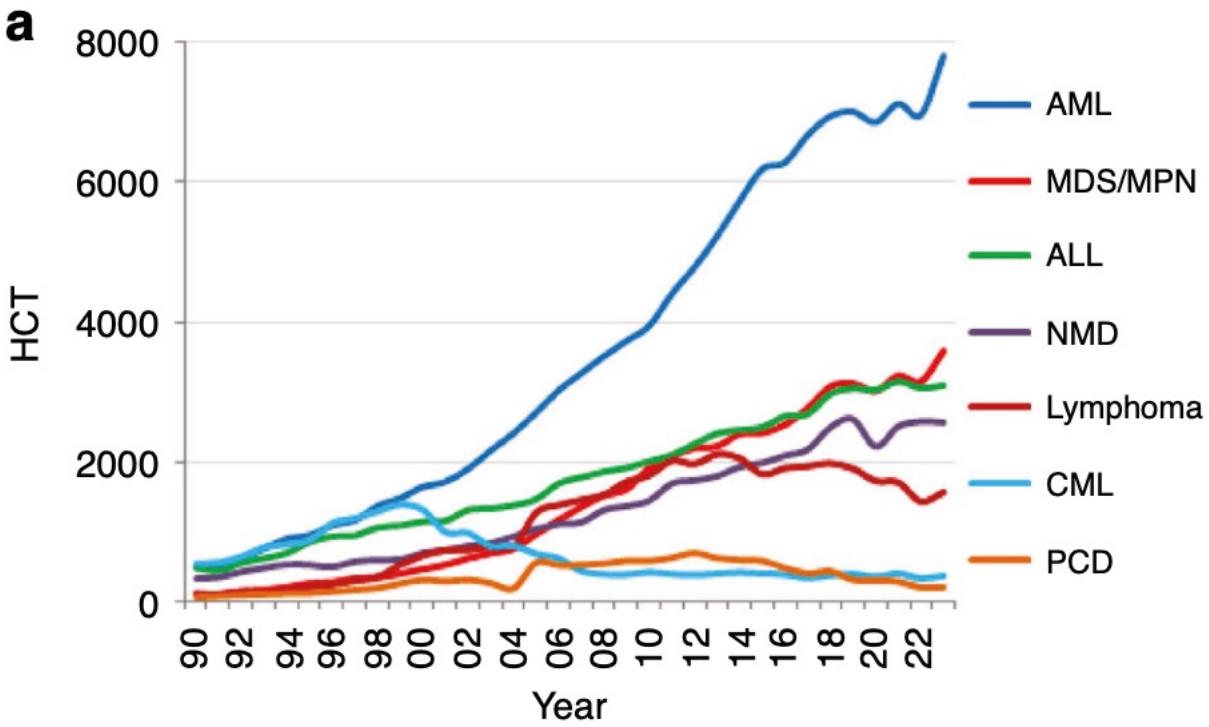
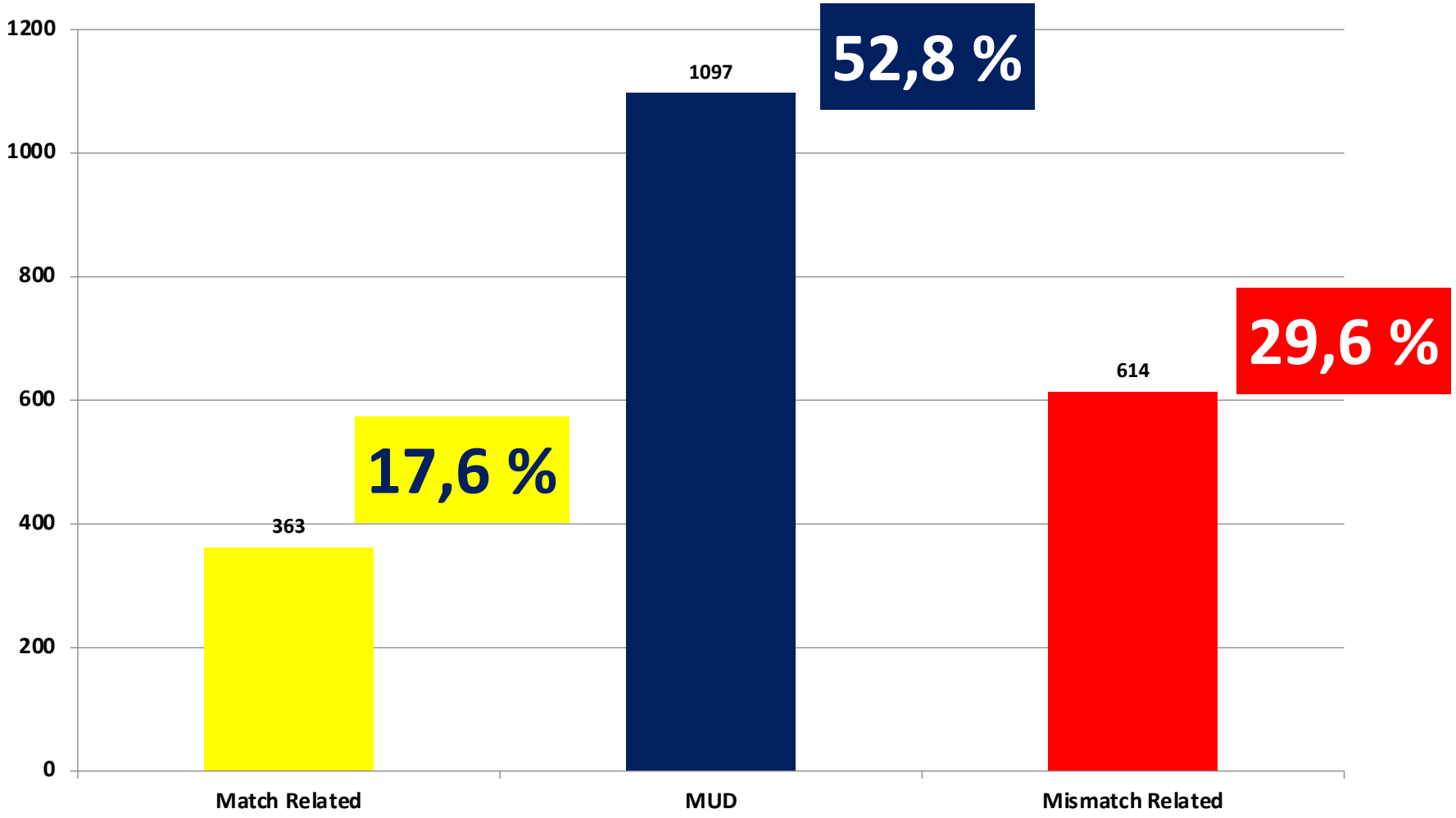


Fig. 1 Number of patients receiving the first allogeneic or autologous HCT from 1990 to 2023.



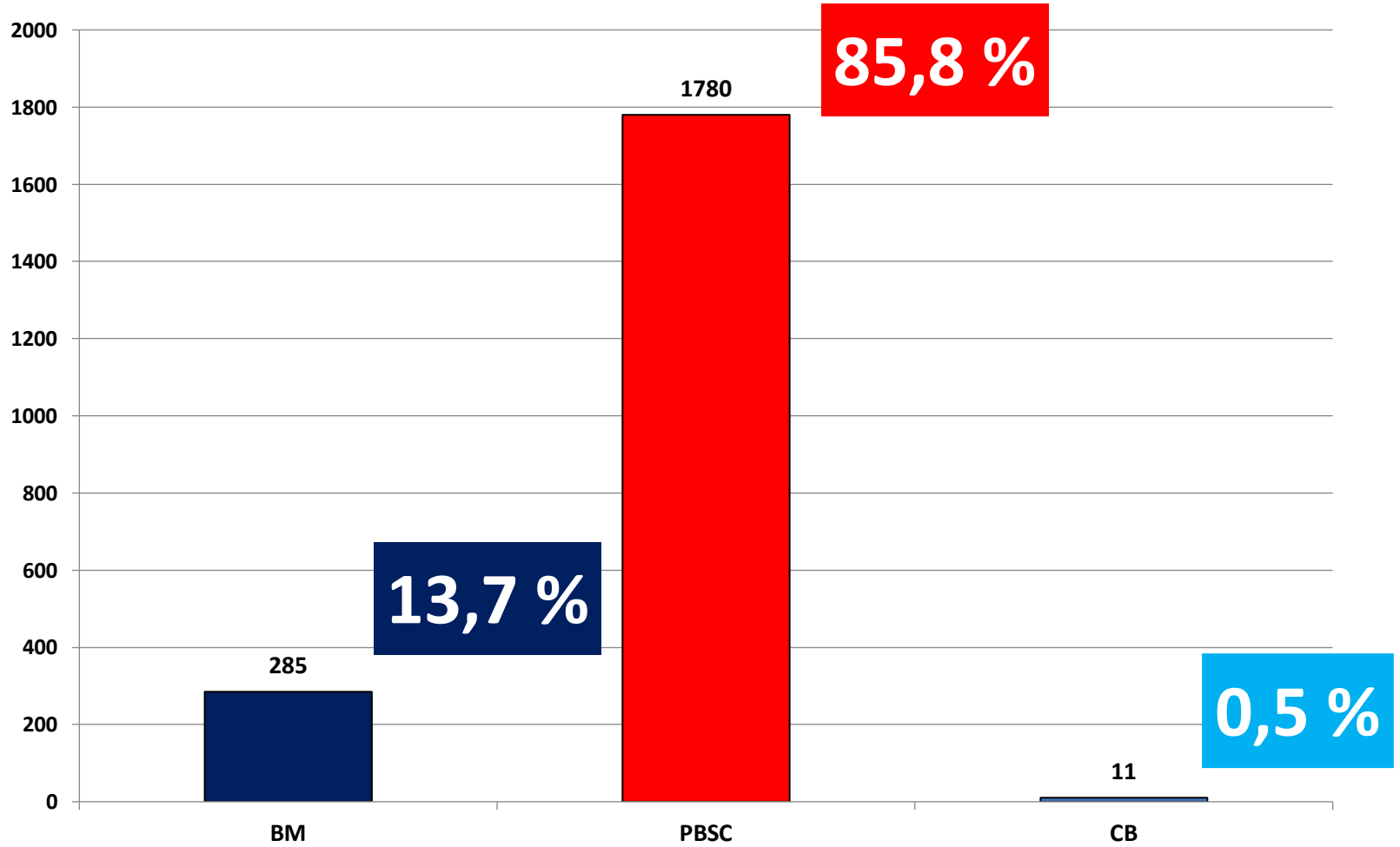
Passweg JR, et al. Bone Marrow Transplant. 2025 Feb 12. doi: 10.1038/s41409-025-02524-2.

2024: Allogeneic Transplants (n. 2076) – Donor type

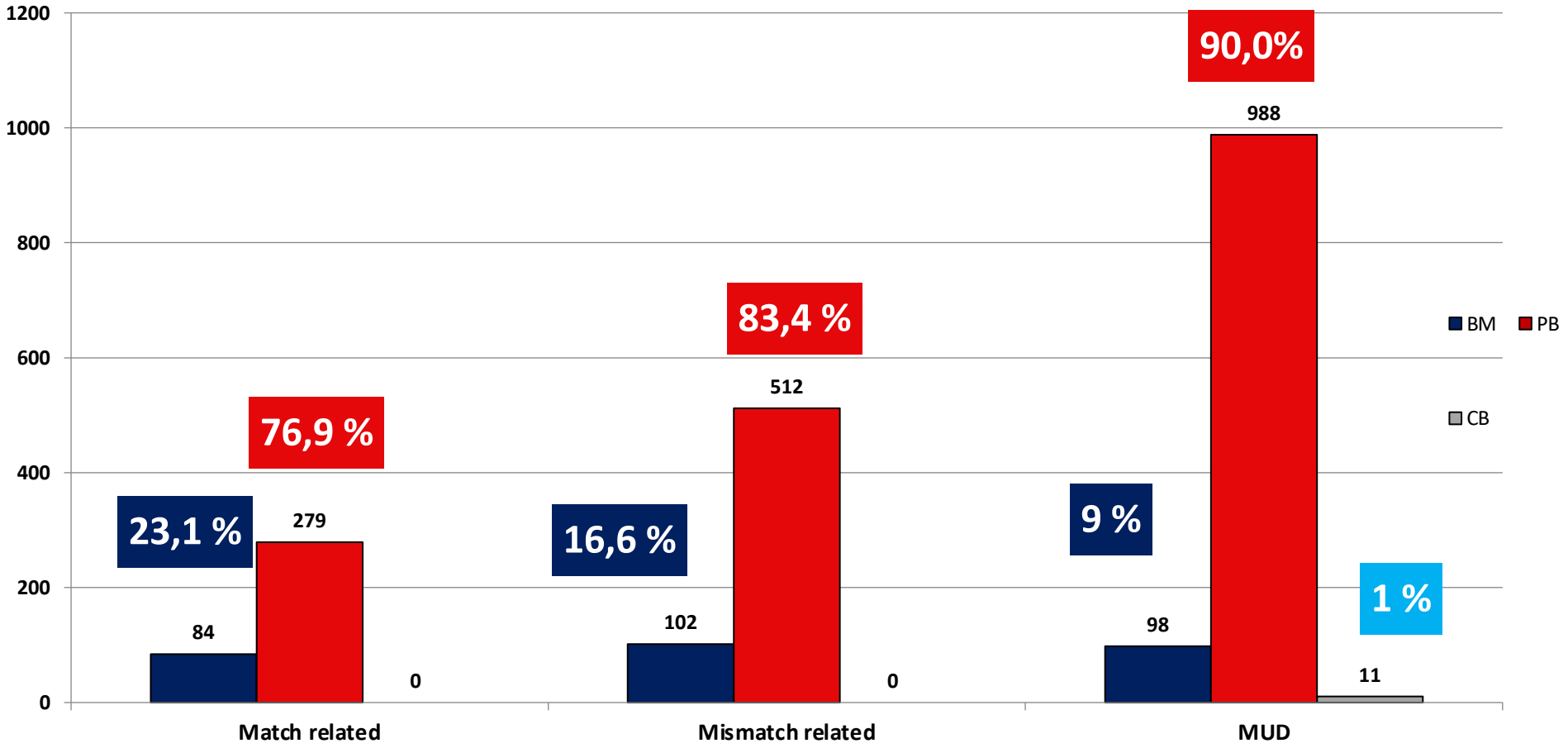


Export date 14/04/2025

2024: Allogeneic Transplants (n. 2076) – Source of HSC



2024: Allogeneic Transplants (n. 2076) – Donor and Source of HSC

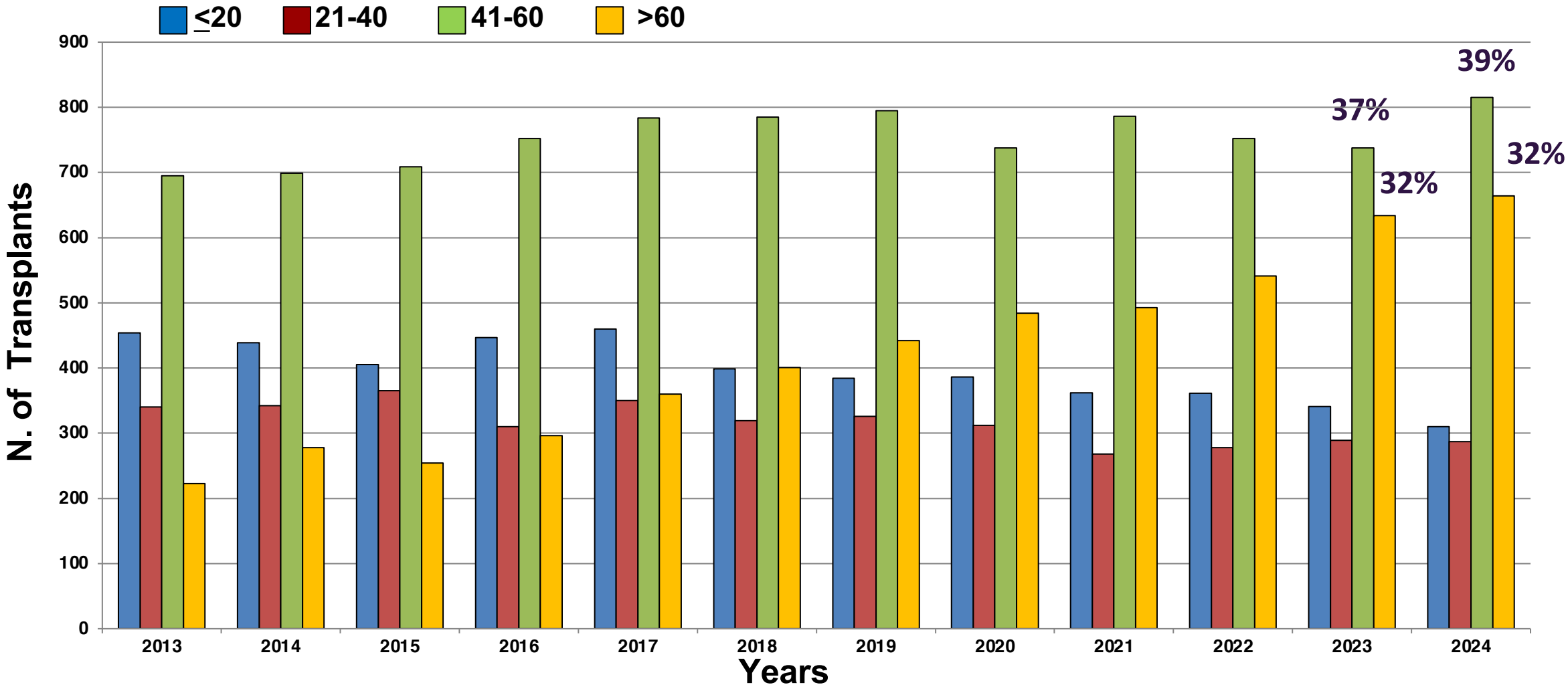


363

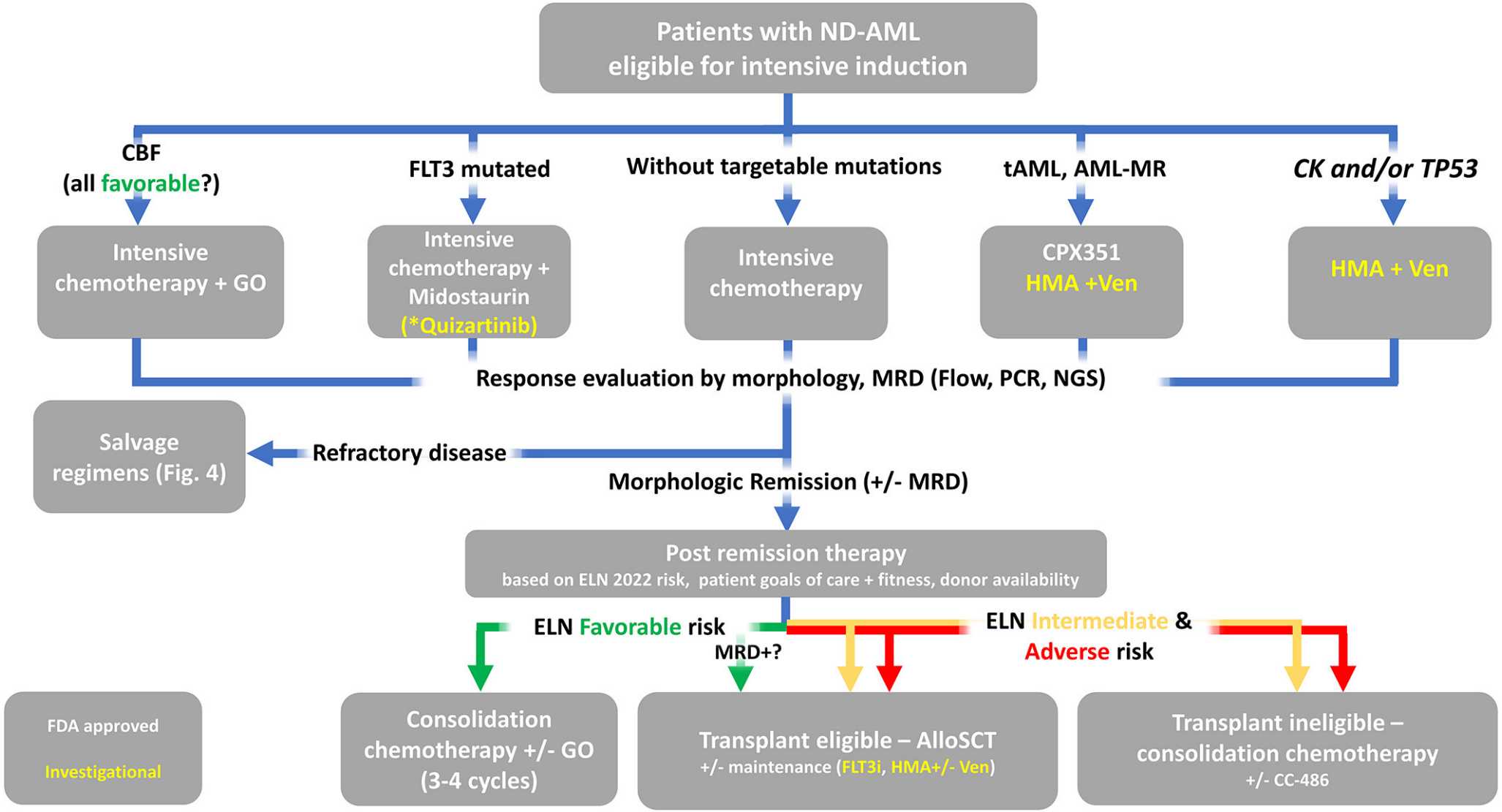
614

1.097

2024 - Allogeneic Transplants: Patient age at transplantation

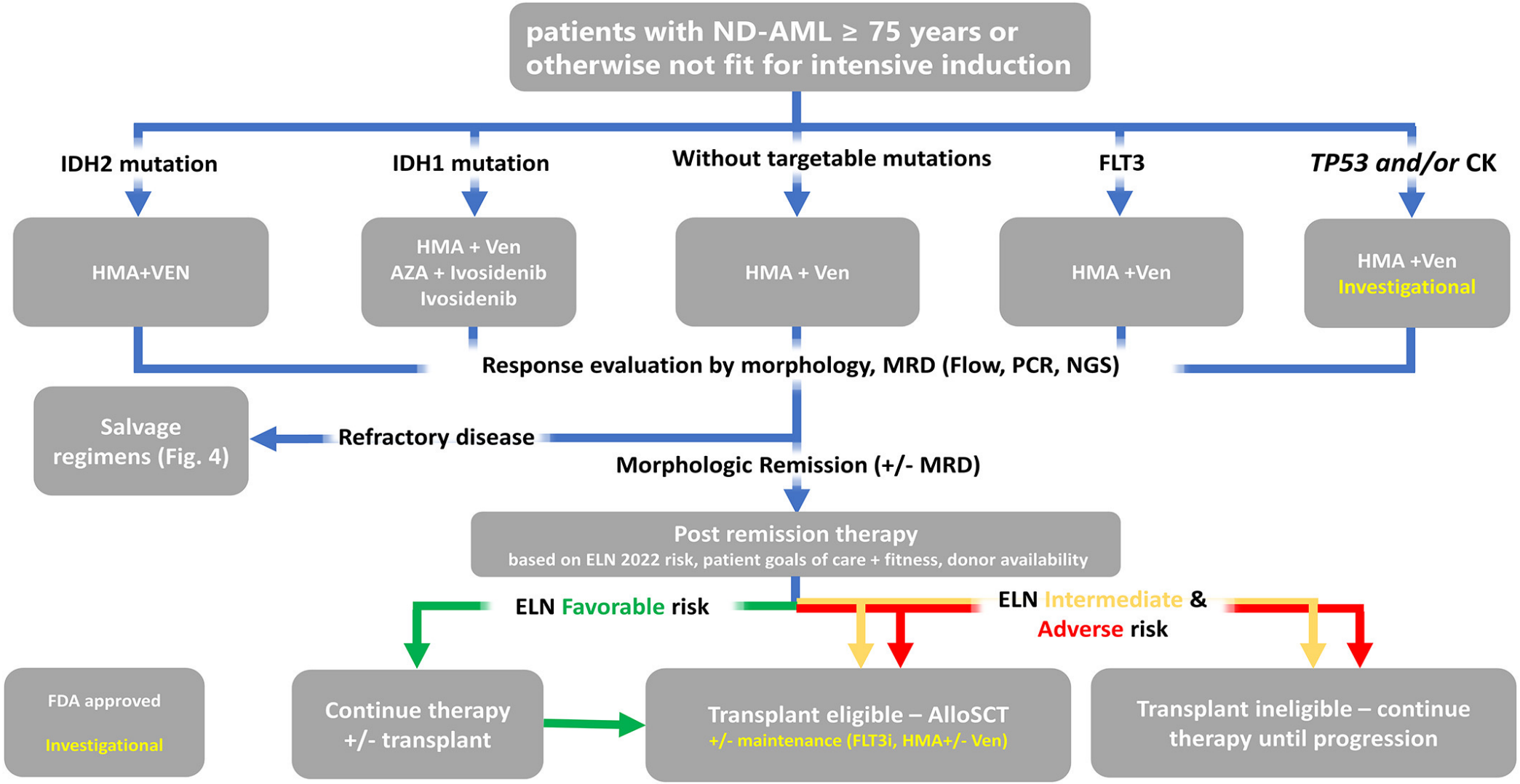


Acute myeloid leukemia: update on diagnosis, risk-stratification, and management



American J Hematol, Volume: 98, Issue: 3, Pages: 502-526, First published: 02 January 2023, DOI: (10.1002/ajh.26822)

Acute myeloid leukemia: update on diagnosis, risk-stratification, and management



American J Hematol, Volume: 98, Issue: 3, Pages: 502-526, First published: 02 January 2023, DOI: (10.1002/ajh.26822)

Transplant in ALL: who, when, and how?

Table 3. Summary of recommendations for transplant consolidation in adult ALL

Indication for transplant*	
**Early referral of high-risk patients for prompt donor search and personalized/collaborative decision-making is critical*	
Immunophenotype	Early T-cell precursor
Karyotype	Complex karyotype; low hypodiploid (32–39 chromosomes); near haploid (24–31 chromosomes)
Unfavorable molecular genetic profile	*IKZF1; BCR::ABL1-like* (Ph-like); *KMT2A* rearranged; *MEF2D* rearranged; *MYC* rearranged; *TP53*; *iAMP21*
Slow response to therapy	Time to morphologic CR >4 weeks
	Persistent MRD post-induction using flow or NGS
No added benefit to transplant consolidation	
BCR::ABL1 rearranged (Ph+) • With incorporation of TKI therapy, studies suggest no benefit to HCT in patients who develop prompt, deep response AND have no evidence for unfavorable molecular features.	
Absence of high-risk molecular genetic features AND prompt, deep response to induction therapy.	
Role of transplant consolidation not clear	
Consolidation post-CAR-T therapy • Patients with very high risk features and patients with evidence for MRD following CAR-T likely benefit from HCT consolidation; toxicity from extensive prior therapy may result in adverse survival in other patients.	

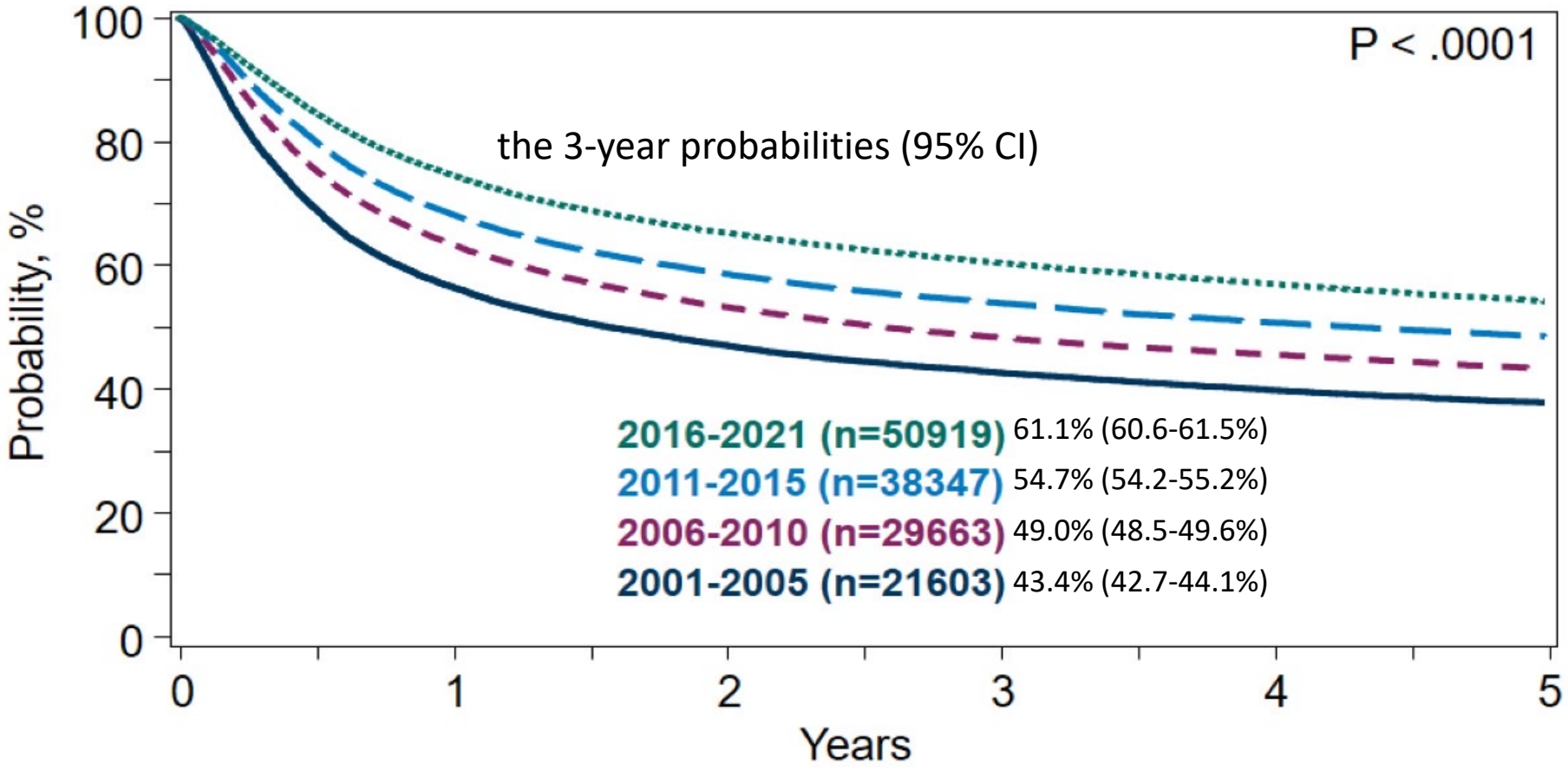
How I treat newly diagnosed Philadelphia chromosome-positive acute lymphoblastic leukemia

Diagnostics/evaluation	**Patient:** Age, fitness/frailty, cardiovascular risk factors, support **Disease:** *Genetic risk:* cytogenetic, molecular (*IKZF1*; *IKZF1* plus) *MRD monitoring:* RT-PCR p190 vs p210; NGS or PCR for clonal tracking
AlloHCT, in CR1	**Favoring yes** 1. High-risk genetic features (chromosomes: complex, "double" Ph; *IKZF1* plus) 2. No achievement of CMR by 3 months (with TKI+/− chemotherapy) 3. Fit, appropriate donor 4. No blinatumomab available or not tolerated **Favoring no** 1. No high-risk genetic features 2. Achievement of CMR by 3 months (with TKI+/− chemotherapy) 3. Blinatumomab **Unknown** 1. Poor response to TKI+/− chemo but CMR with blinatumomab 2. High-risk genetics but optimal MRD response

Marlise R. Luskin - Hematology 2024 | ASH Education Program

Trends in Survival after Allogeneic HCTs, in the US, 2001-2021

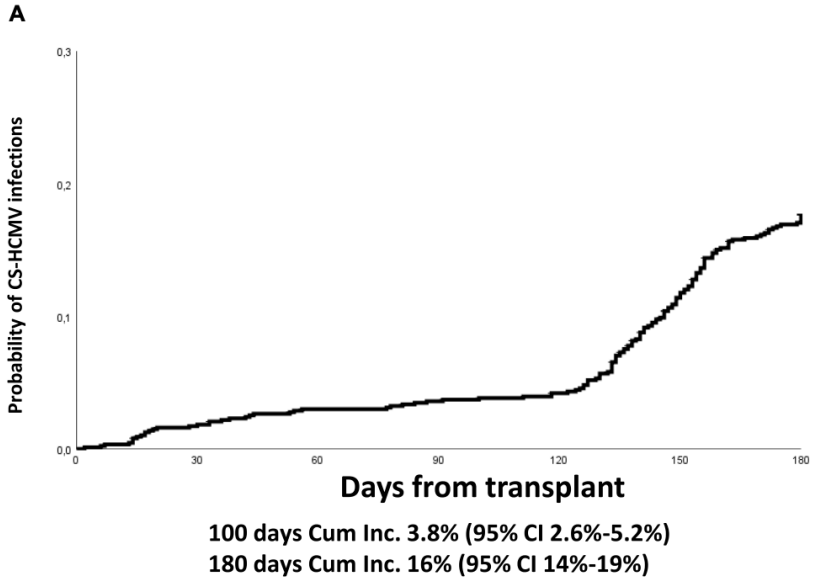
140,532 patients receiving **allogeneic** HCT



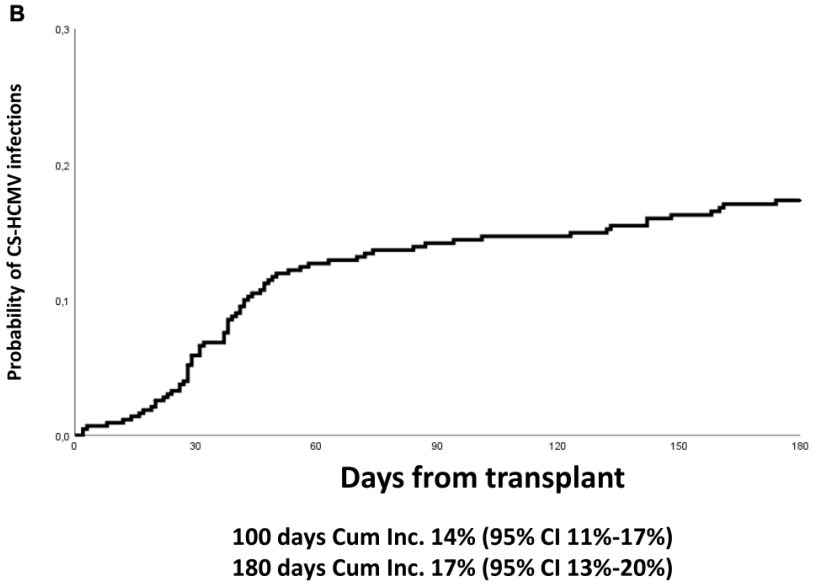
CIBMTR
A RESEARCH COLLABORATION BETWEEN THE MEDICAL COLLEGE OF WISCONSIN AND NMDP

Spellman S, et al. **Current Uses and Outcomes of Cellular Therapies in the US: CIBMTR Summary Slides, 2024.**

The GITMO CYTO-ALLO STUDY



cumulative incidence of clinically significant HCMV infections (CS-HCMV-i) at 100 days and 180 days from allo-HSCT in patients who received letermovir primary prophylaxis (LET-PP). The low rate of infections during the prophylaxis period was balanced by a rebound of infections in the late post-transplant phase, when prophylaxis was discontinued



The cumulative incidence of CS-HCMV-i at 100 days and 180 days from allo-HSCT in patients who did not receive LET-PP

Girmenia et al. Open Forum Infectious Diseases 2025

GVHD: consensus recommendations of the European Society for Blood and Marrow Transplantation

Key updates to the recommendations include:

(1) primary use of ruxolitinib in steroid-refractory acute GVHD and steroid-refractory chronic GVHD as the new standard of care,

(1) use of rabbit anti-T-cell (thymocyte) globulin or post-transplantation cyclophosphamide as standard GVHD prophylaxis in peripheral blood stem-cell transplantations from unrelated donors, and

(2) the addition of belumosudil to the available treatment options for steroid-refractory chronic GVHD

Penack O, et al.. Lancet Haematol. 2024

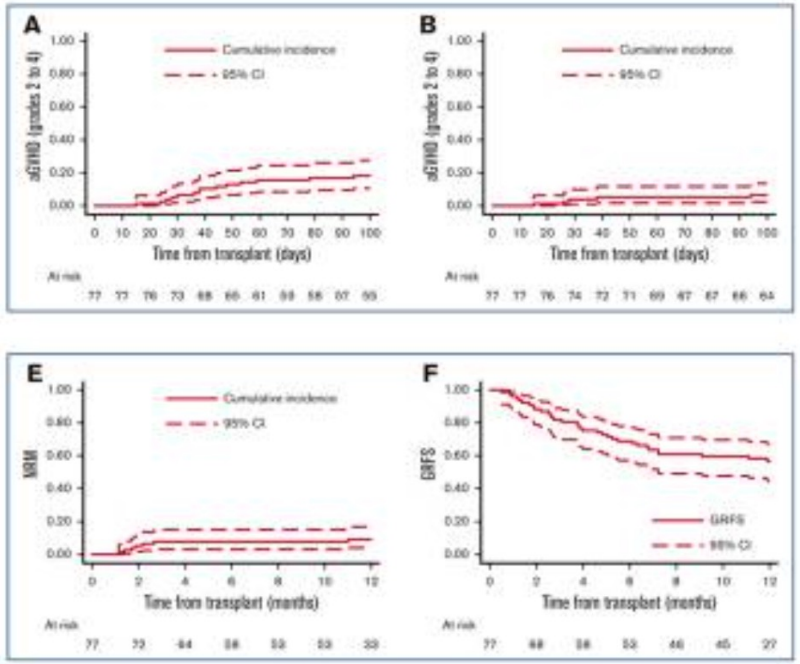
Post Transplant Cyclophosphamide as GVHD Prophylaxis in Patients Receiving Mismatched Unrelated HCT: the PHYLOS trial.

GITMO

Prospective, phase 2, multicentre study. The primary endpoint: the CI of aGVHD grades 2 to 4 after MMUD HCT with PTCy in patients with AML or MDS

Clinical study:
- 77 adults, median age 53 years.
- 64 AML and 13 MDS in CR at HCT
- Same conditioning and GVHD prophylaxis for all patients.
- Follow up: 1 year

Results



PTCy-based GVHD prophylaxis in HCT from a MMUD leads to a low rate of aGVHD, with a low incidence of NRM and acceptable relapse rate.

*Raiola et al. DOI: 10.1182/**bloodadvances**.2024015173*

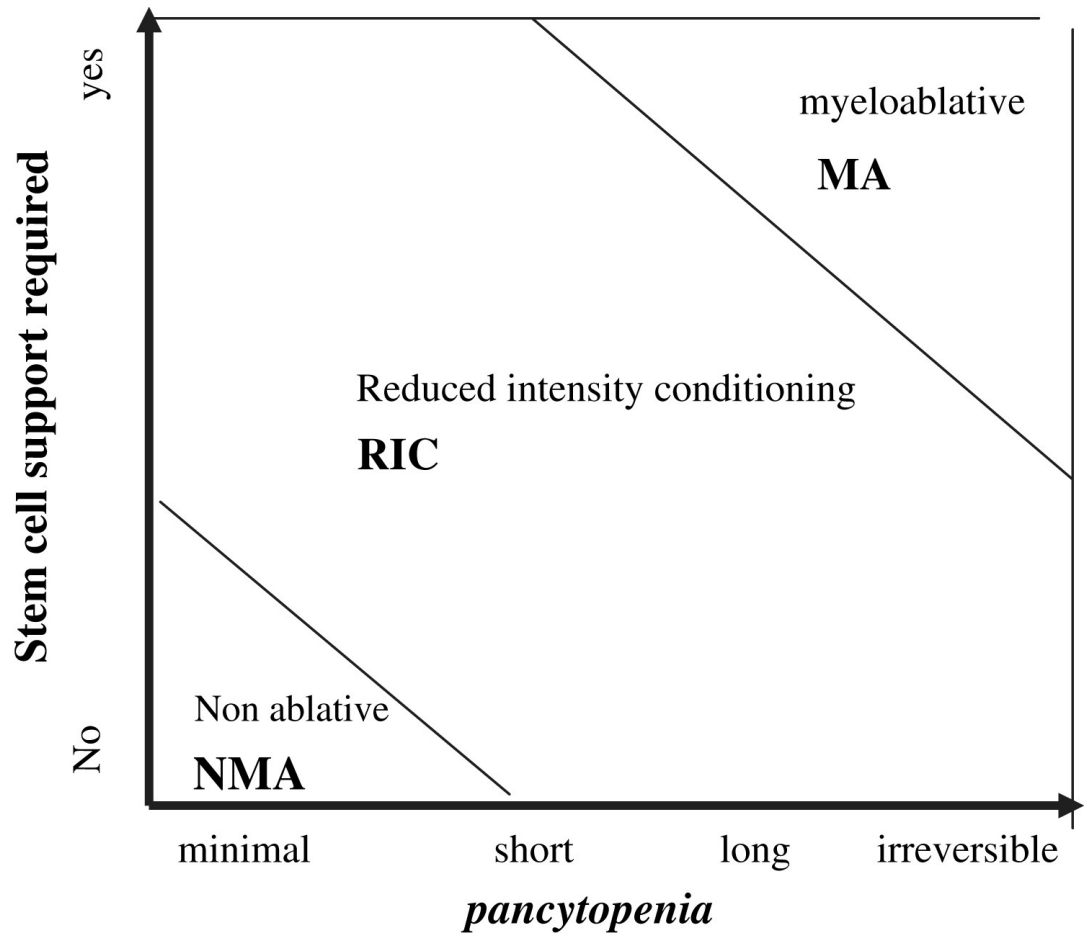
blood advances Visual Abstract

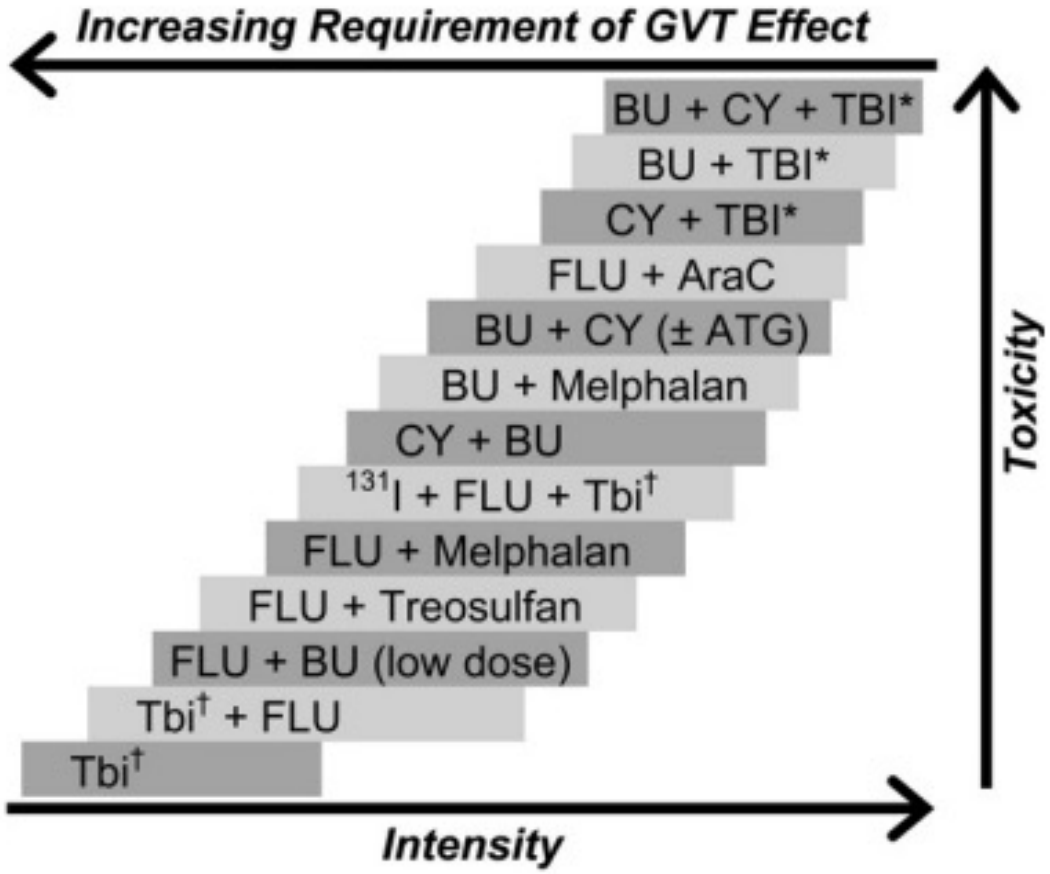
The 100-day cumulative incidence of grades 2 to 4 aGVHD was 18.2% (95% CI, 10.6-27.6) and of grades 3 to 4 was 6.5% (95% CI, 3.1-15.1)

One-year cumulative incidence of chronic GVHD was 13.4% (95% CI, 6.9-22.1). One-year cumulative incidence of nonrelapse mortality was 9.1% (95% CI, 4.0-16.9), and the relapse rate was 23.8% (95% CI, 14.9-33.9). One-year overall survival and graft relapse-free survival were 78.6% (95% CI, 67.4-86.3) and 55.3% (95% CI, 43.4-65.7),

Raiola AM, et al. Blood Adv. 2025

Classification of Conditioning Regimens



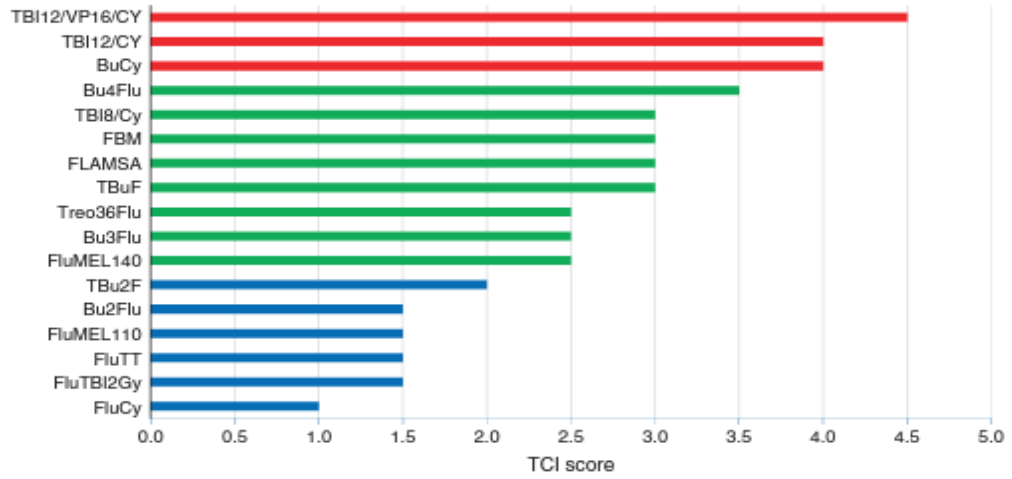


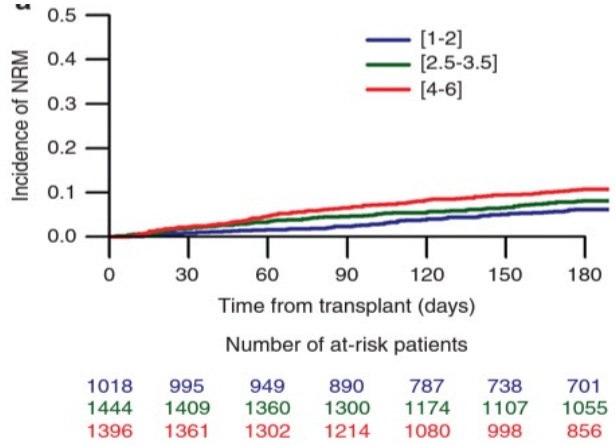
- AraC, cytarabine; ATG, anti-T-lymphocyte immunoglobulin; CY, cyclophosphamide; GVT, graft vs tumor; Tbi/TBI, total body irradiation.
- Bacigalupo A, et al. Biol Blood Marrow Transplant. 2009;15:1628-1633; Gyurkocza B, et al. Blood. 2014;124:344-353.

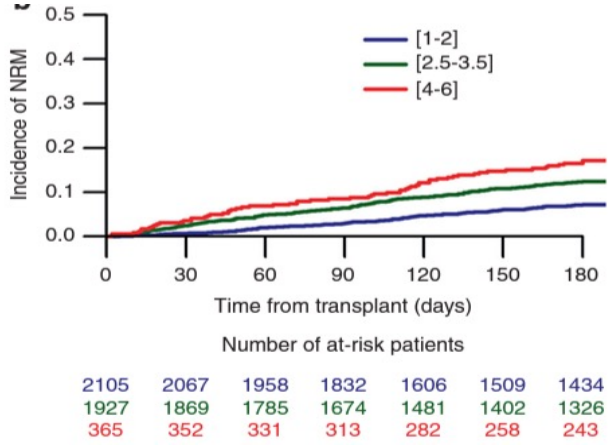
Transplant Conditioning Intensity Score
EBMT

The concept of MAC vs RIC has been expanded by recently developed Reduced Toxicity Conditioning (RTC) regimens including well-established agents

Component	Dose level			Added points for each dose level
	Low	Intermediate	High	
TBI fractionated (Gray)	≤5	6–8	≥9	1
Busulphan (mg/kg)	≤6.4 iv & ≤8 po	9.6 iv & 12 po	12.8 iv & 16 po	1
Treosulfan (g/m2)	30	36	42	1
Melphalan (mg/m2)	<140	≥140	≥200	1
Thiotepa (mg/kg)	<10	≥10	≥20	0.5
Fludarabine (mg/m2)	≤160	>160		0.5
Clofarabine (mg/m2)	≤150	>150		0.5
Cyclophosphamide (mg/kg)	<90	≥90		0.5
Carmustine (mg/m2)	≤250	280–310	≥350	0.5
Cytarabine (g/m2)	<6	≥6		0.5
Etoposide (mg/kg)	<50	≥50		0.5





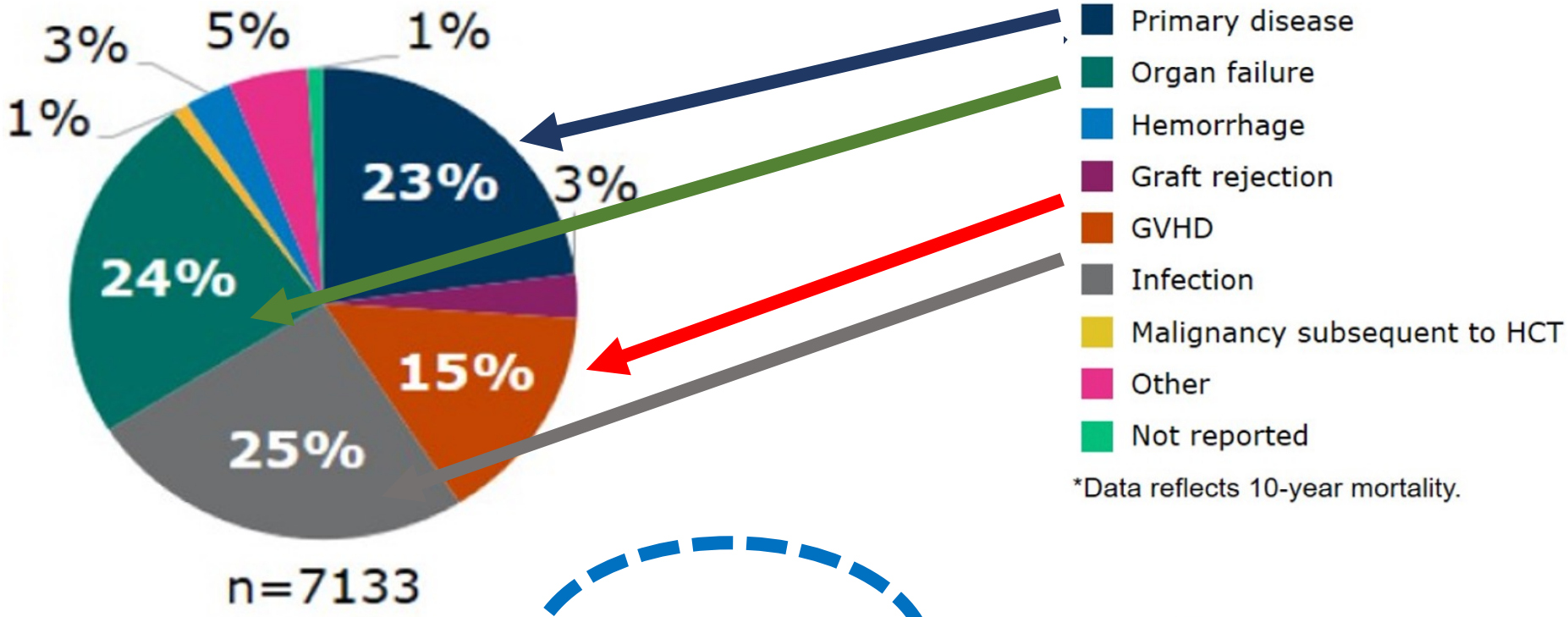


- TCI, transplant conditioning intensity.
- Spyridonidis A, et al. Bone Marrow Transplant. 2020;55:1114-1125.

Causes of Death after Allogeneic HCTs in the US, 2012-2022

Age ≥18 years
Total transplants = 75507

Data reflects 100-days mortality



9.6 %

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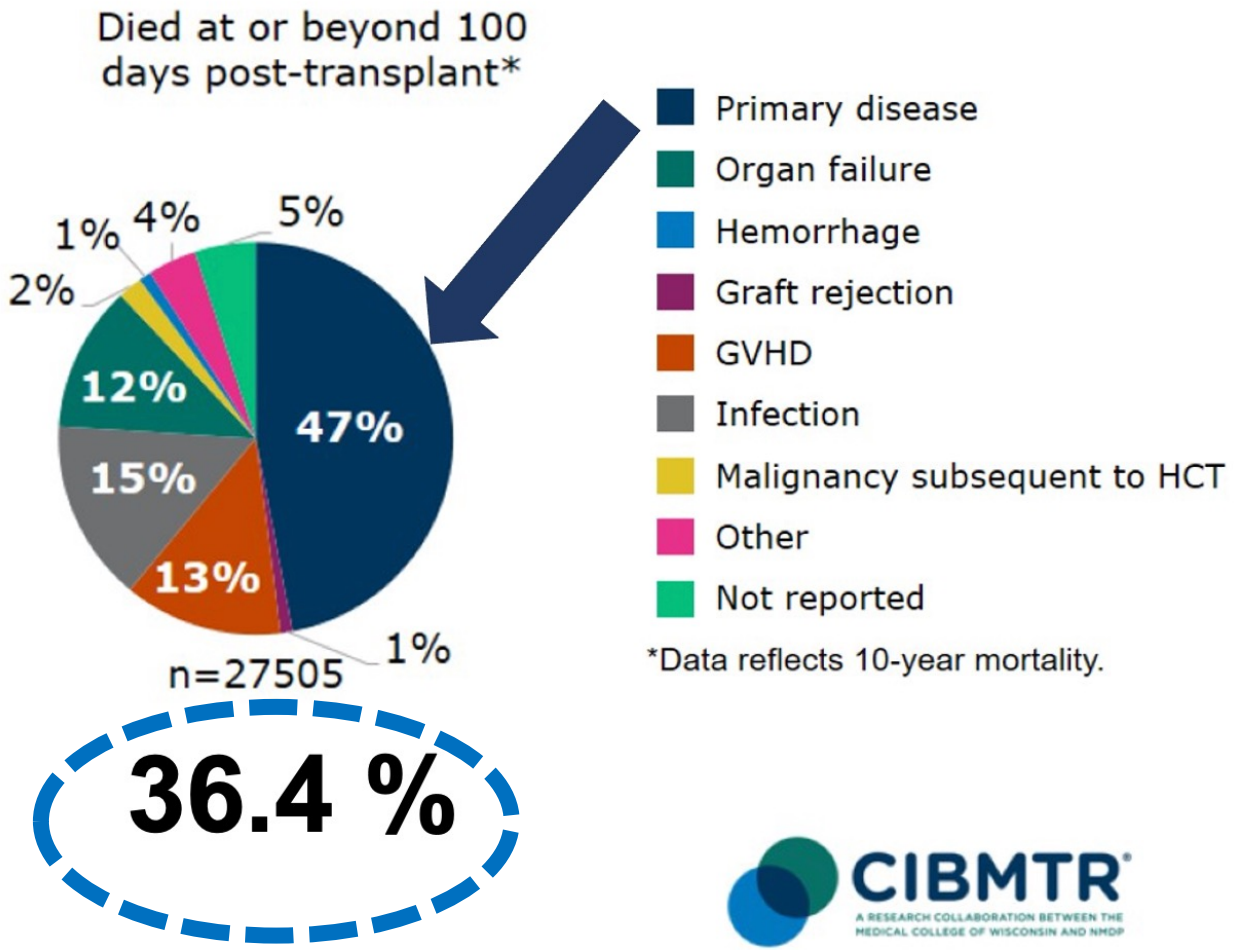

36.4 %

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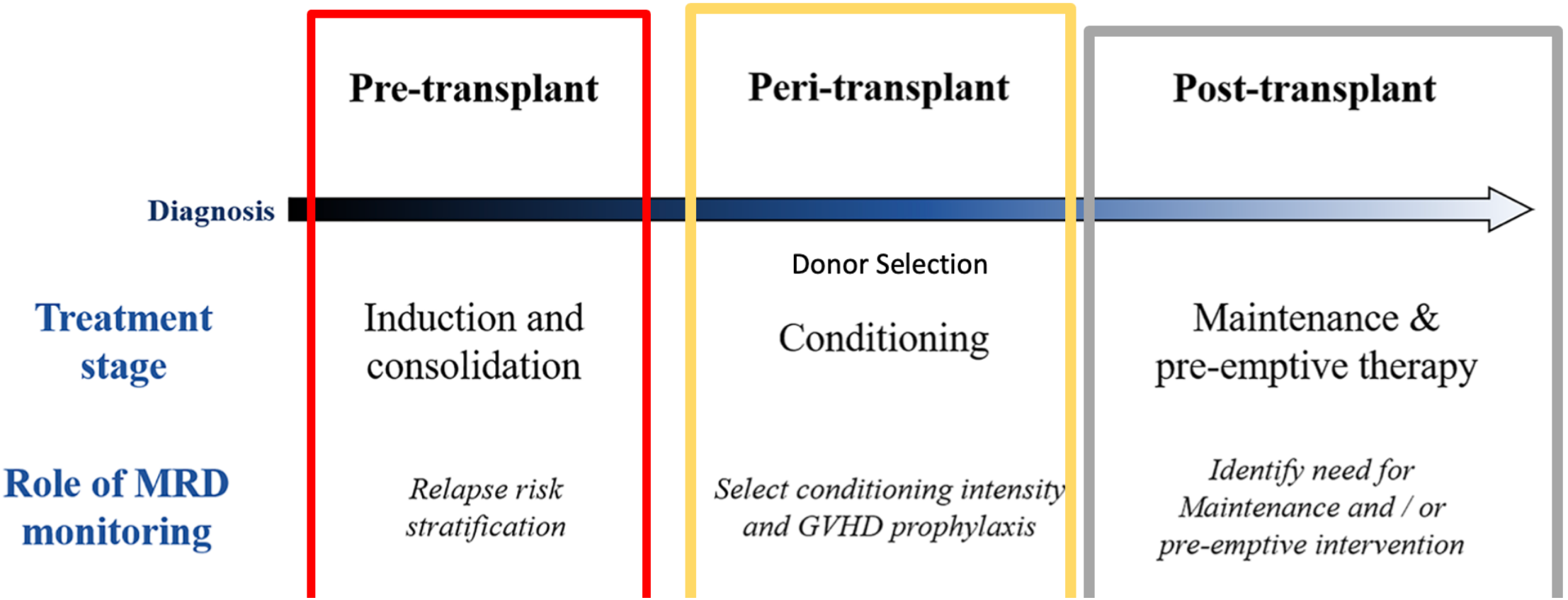

Loke J, Buka R and Craddock C (2021) Allogeneic Stem Cell Transplantation for Acute Myeloid Leukemia: Who, When, and How? Front. Immunol.