

Current Uses and Outcomes of Cellular Therapies in the US

2025 Summary Slides

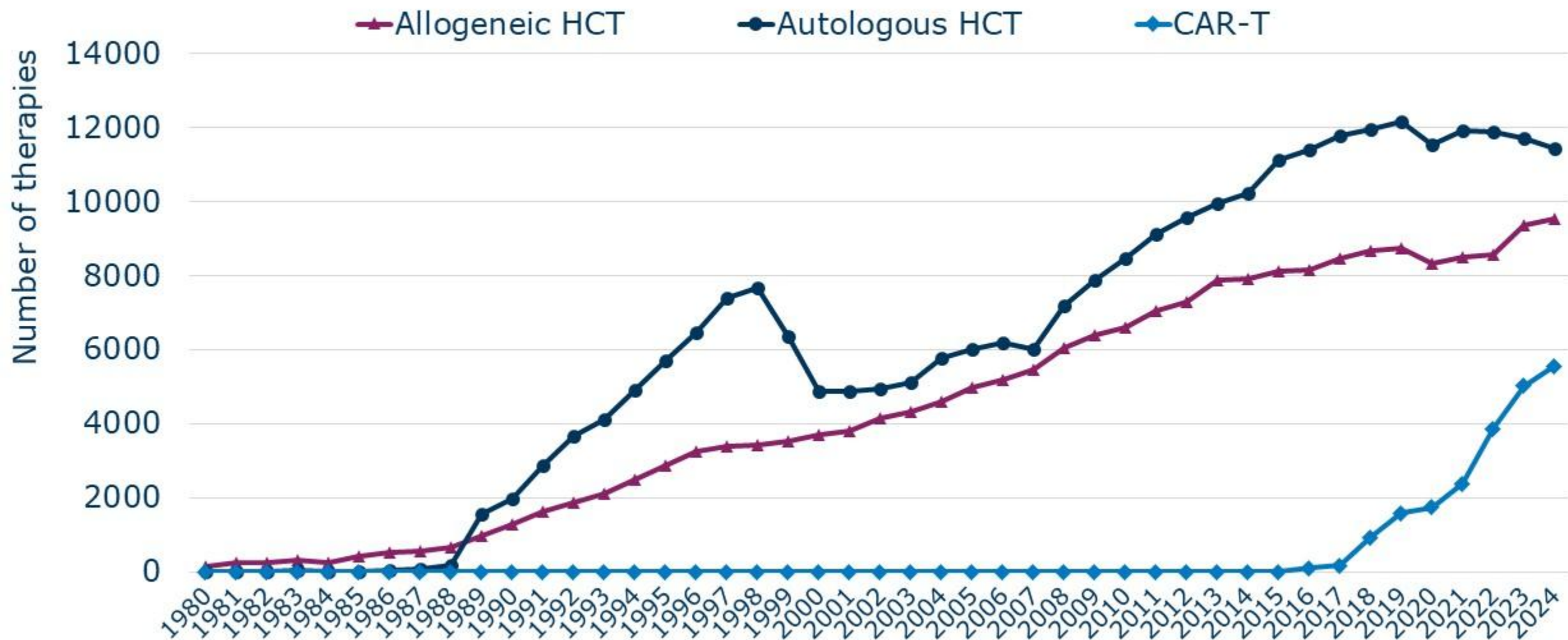
June 17, 2026

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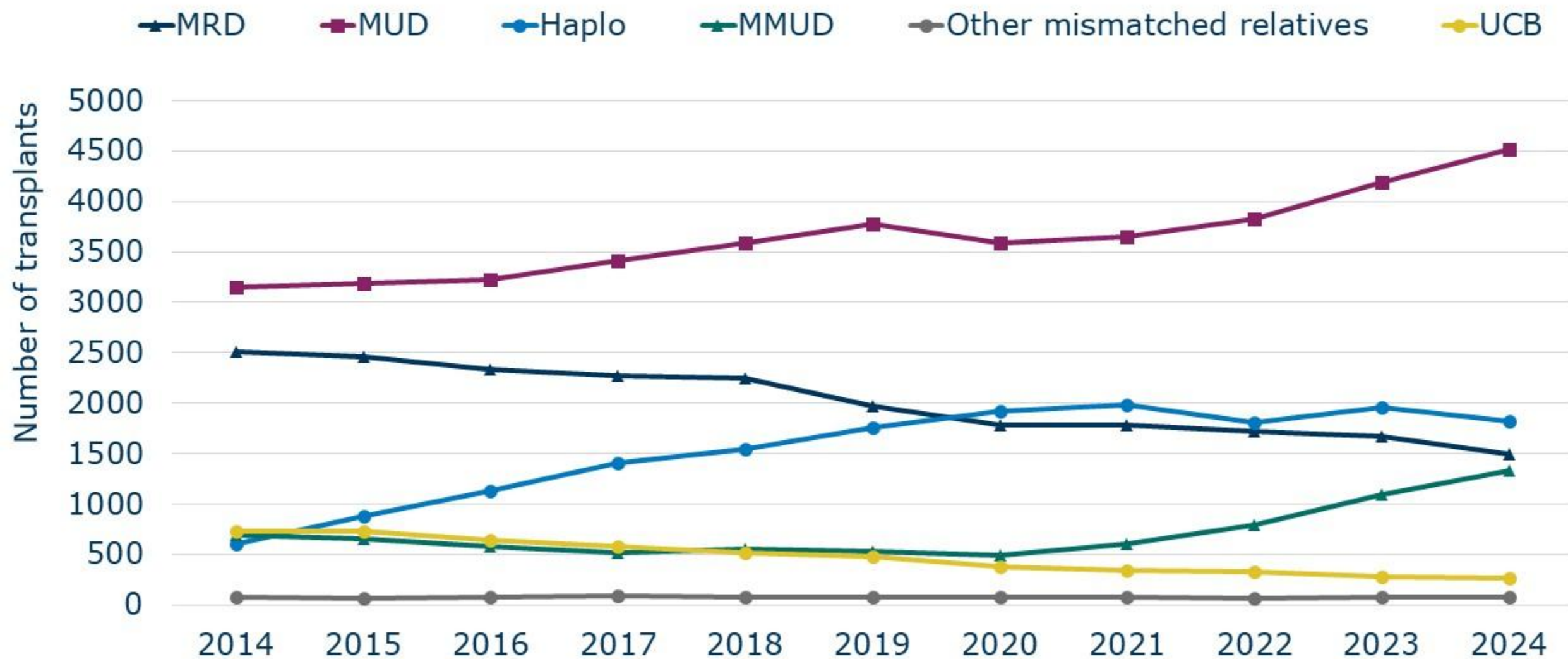
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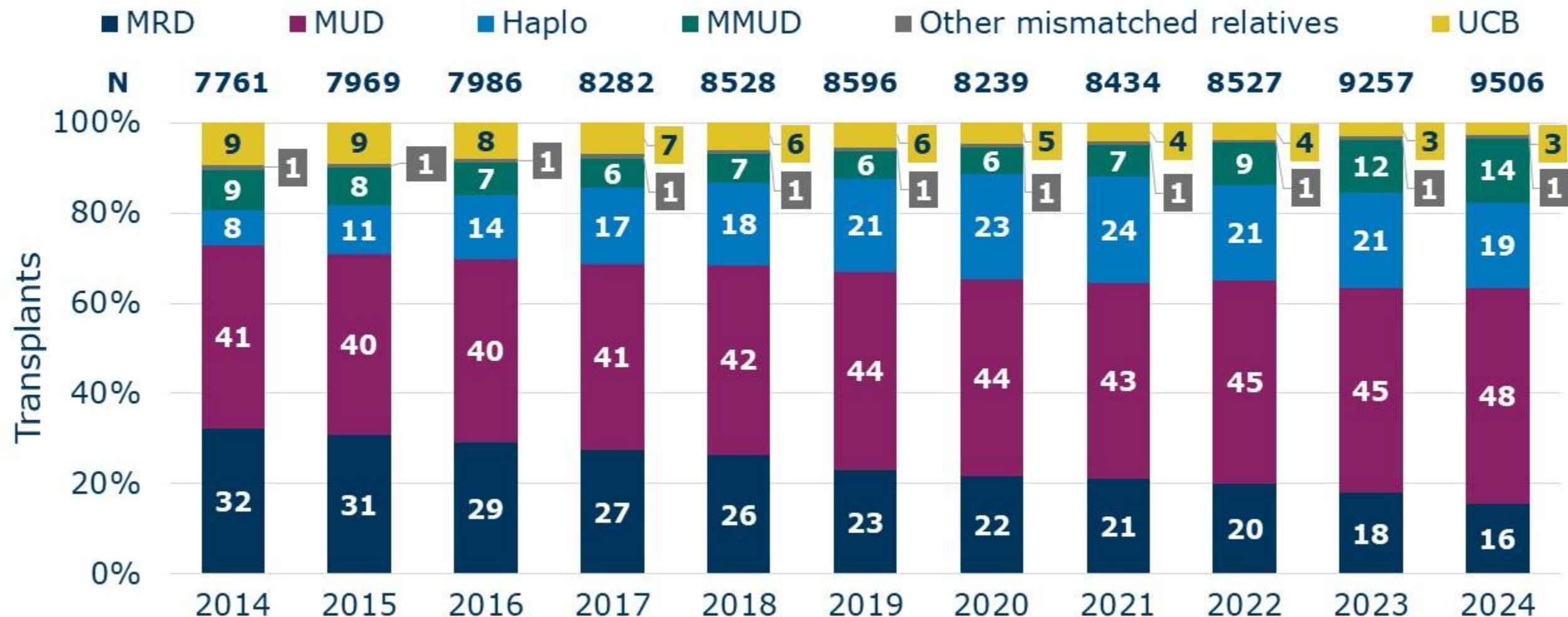
First cellular therapies in US, per year, 1980-2024



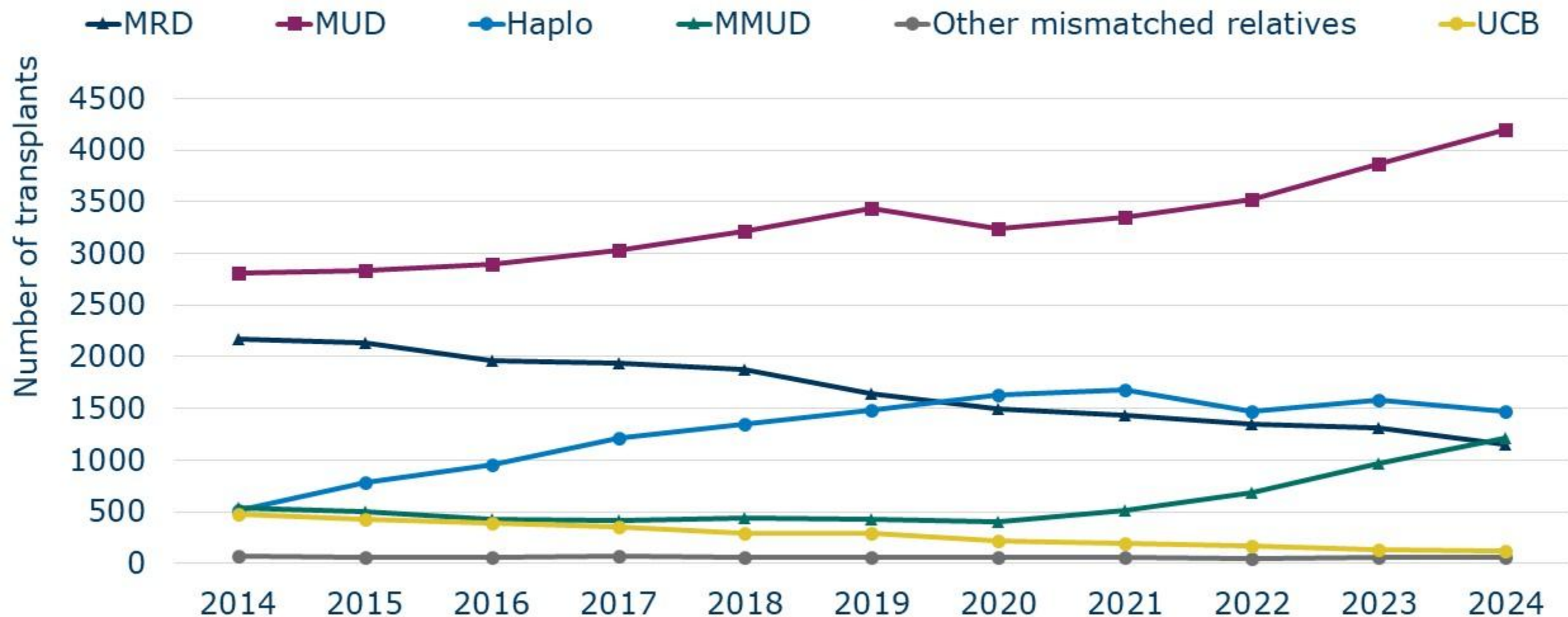
First alloHCTs in US by donor type, 2014-2024



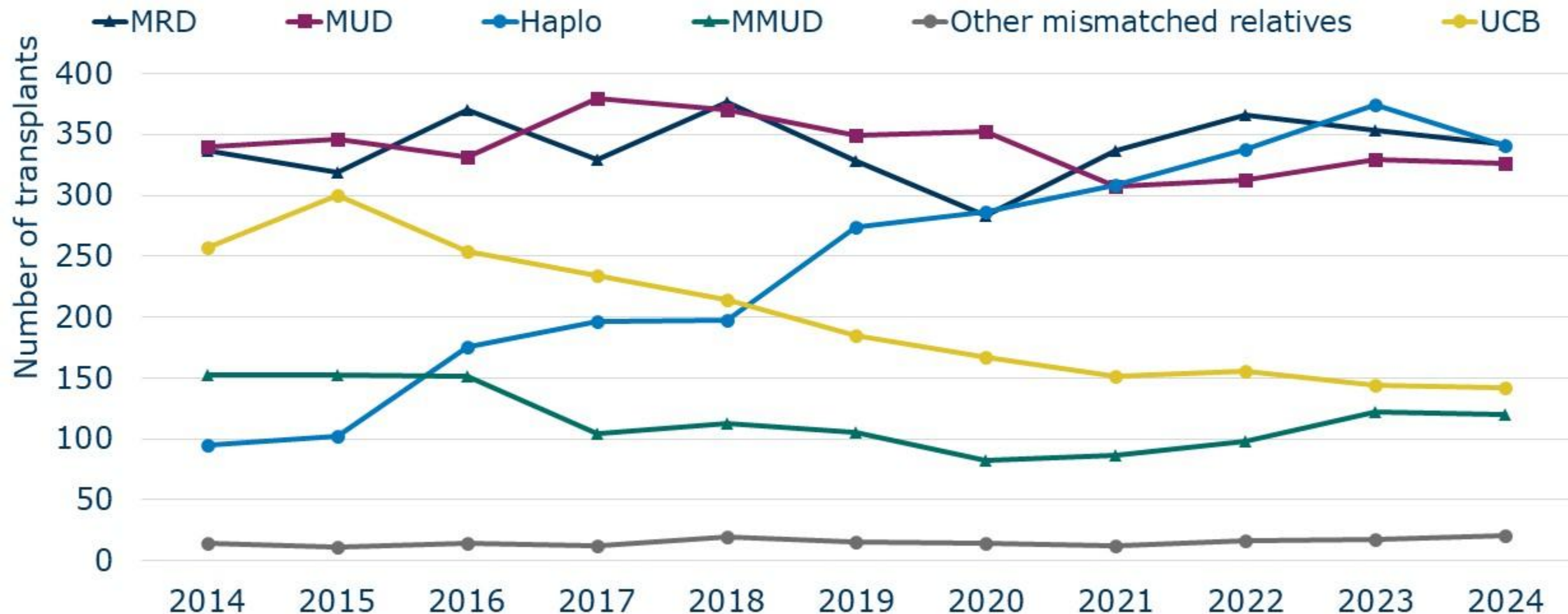
Relative proportion of alloHCTs in US by donor type, 2014-2024



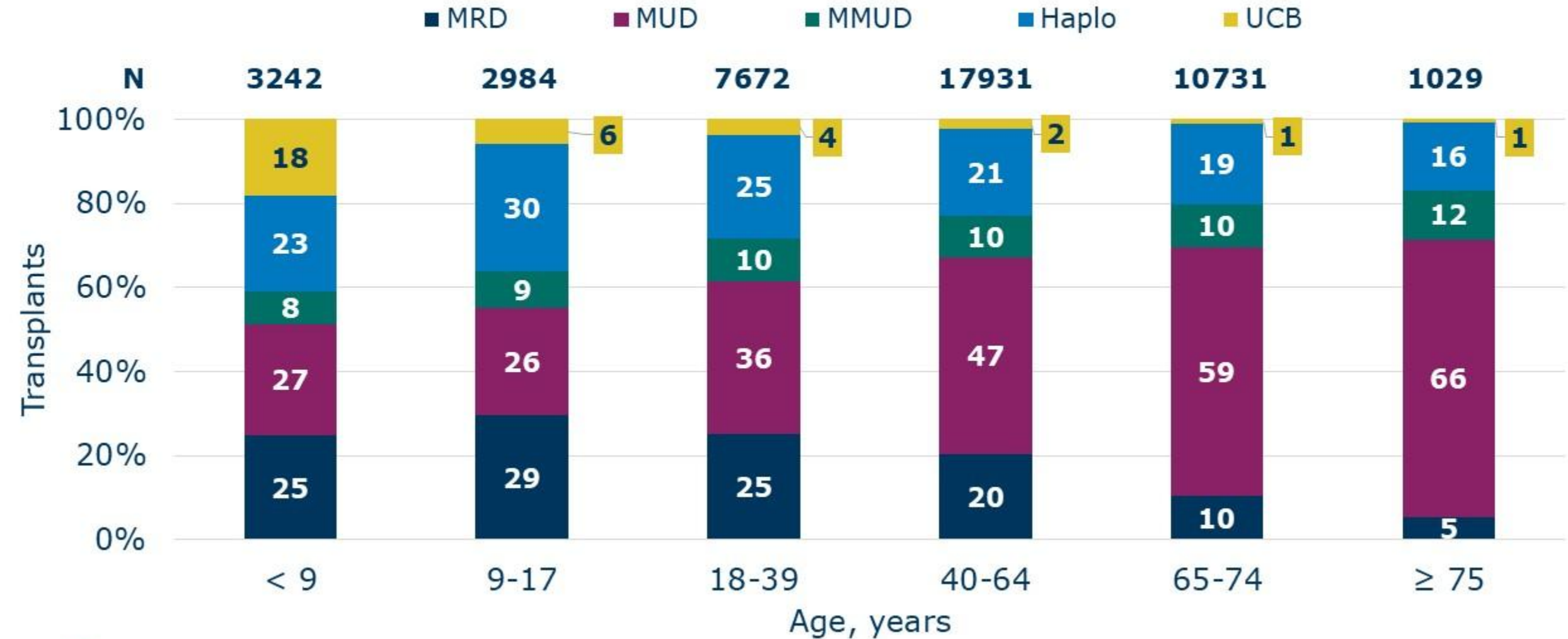
First alloHCTs in US, by donor type, 2014-2024, adults



First alloHCTs in US, by donor type, 2014-2024, pediatrics

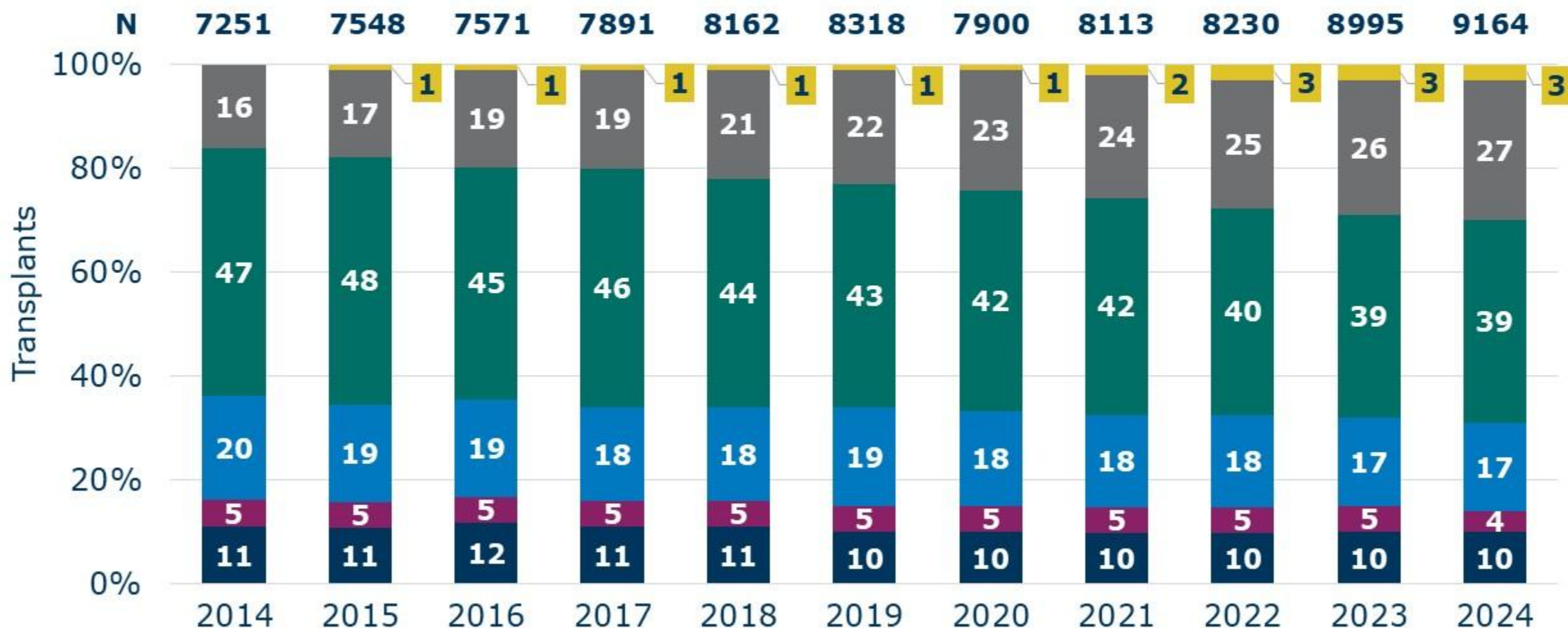


Relative proportion of alloHCTs, by donor type and recipient age, US, 2020-2024

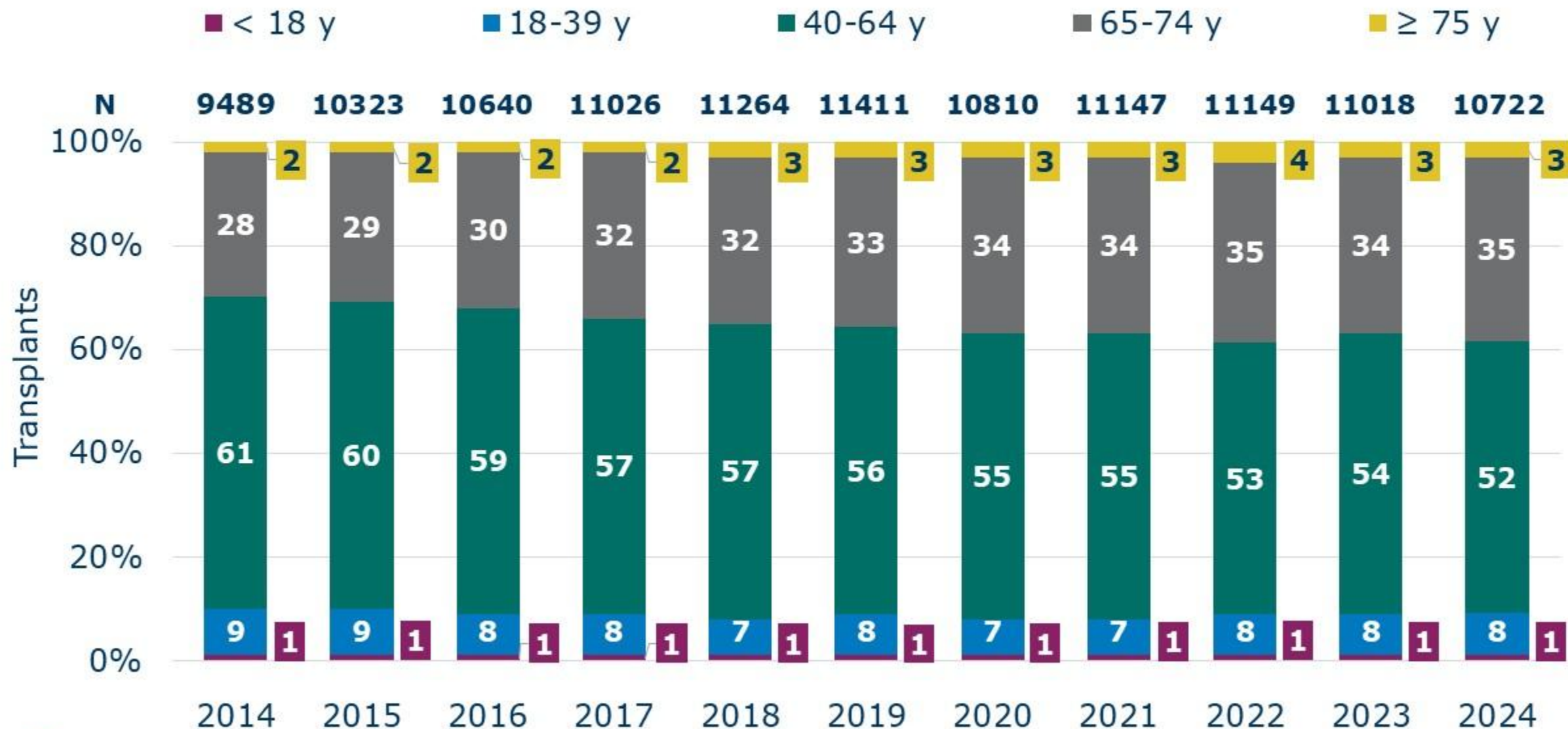


Recipient age, alloHCTs in the US

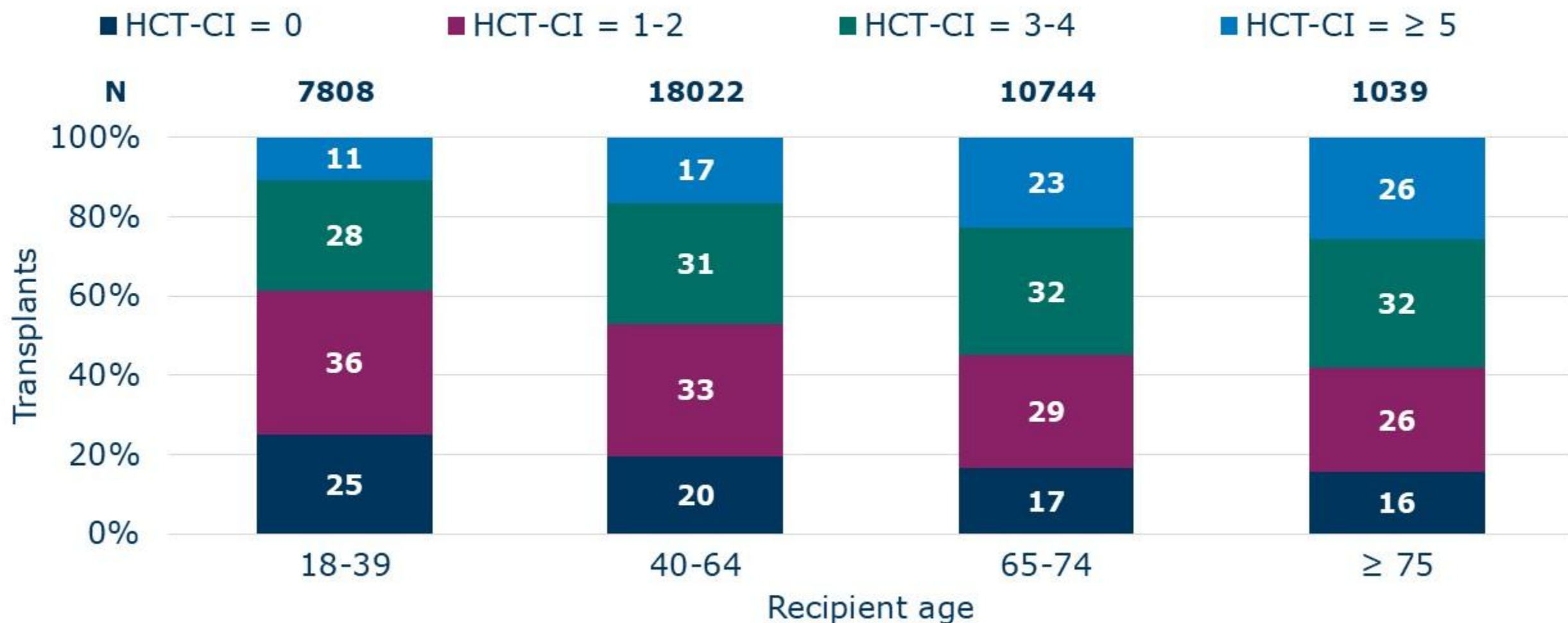
■ < 12 y ■ 12-17 y ■ 18-39 y ■ 40-64 y ■ 65-74 y ■ ≥ 75 y



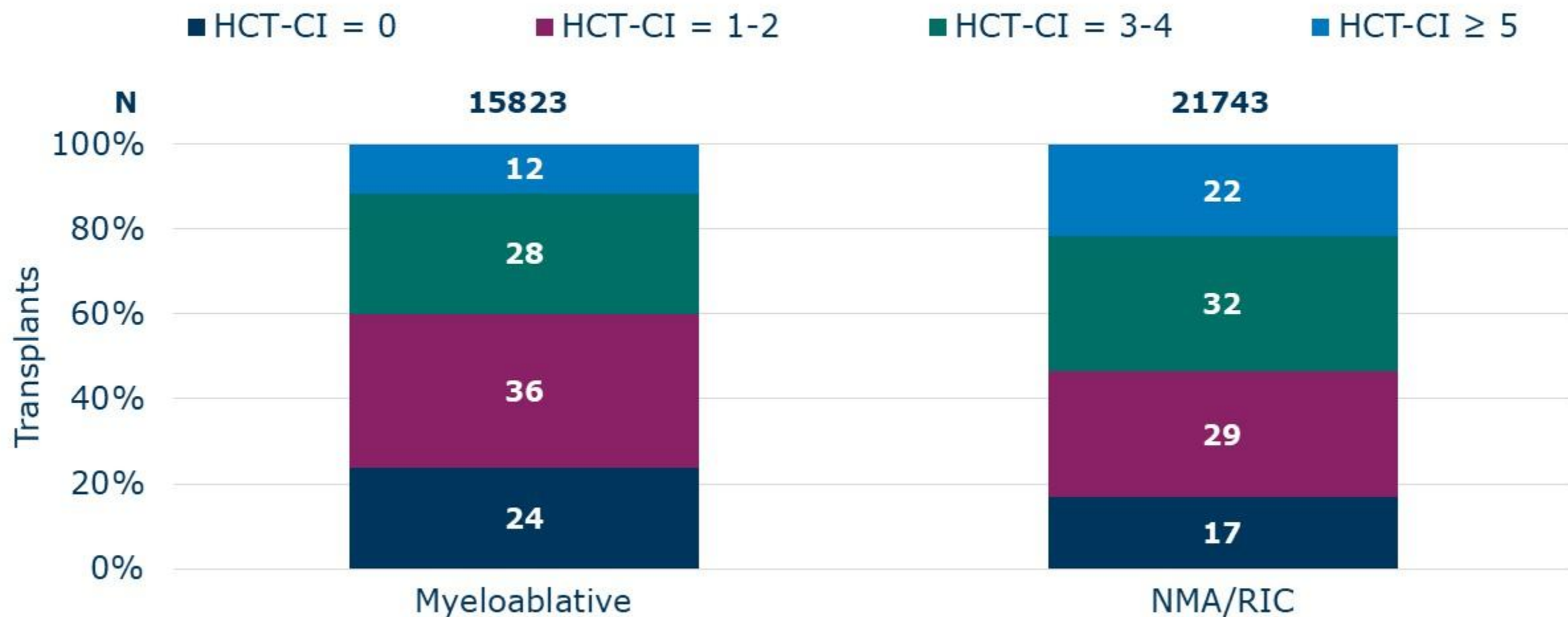
Recipient age, autologous HCTs in the US



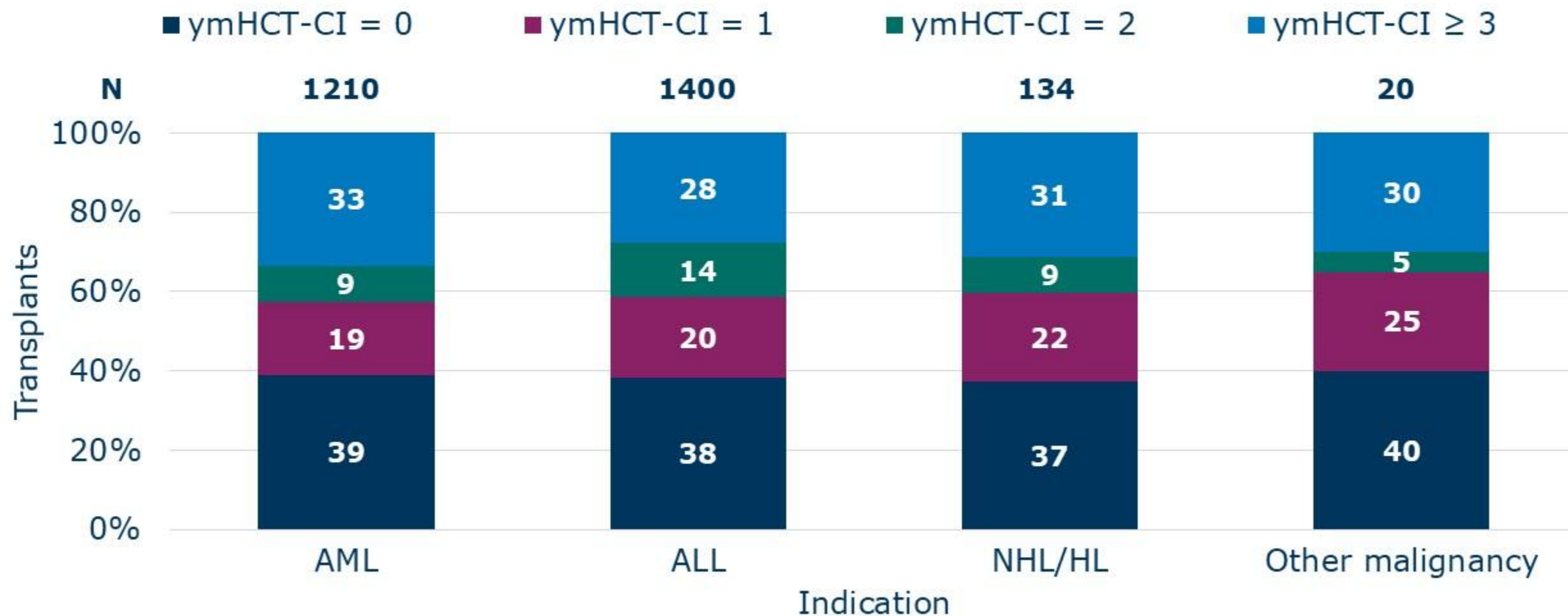
Comorbidity index in alloHCTs by recipient age, US, 2020-2024, adults



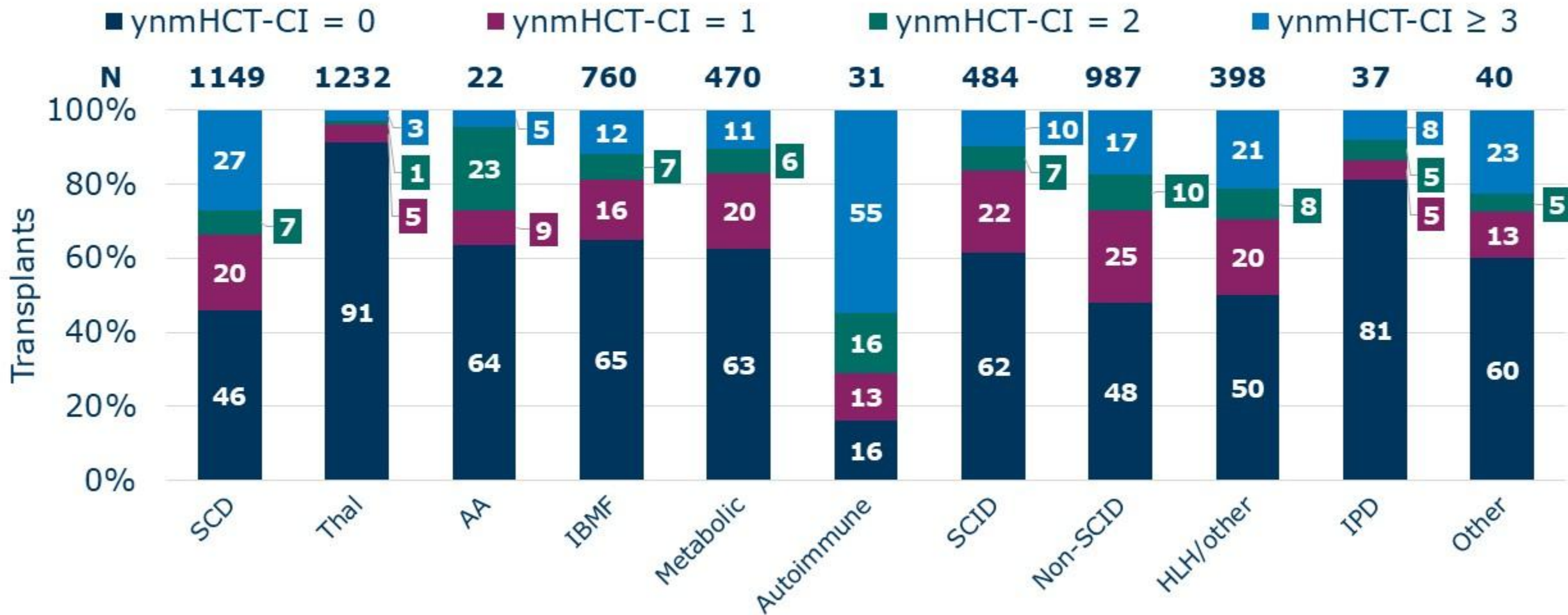
Comorbidity index in alloHCTs by conditioning intensity, US, 2020-2024, adults



Comorbidity index in alloHCTs by malignant indication, US, 2020-2024, pediatrics

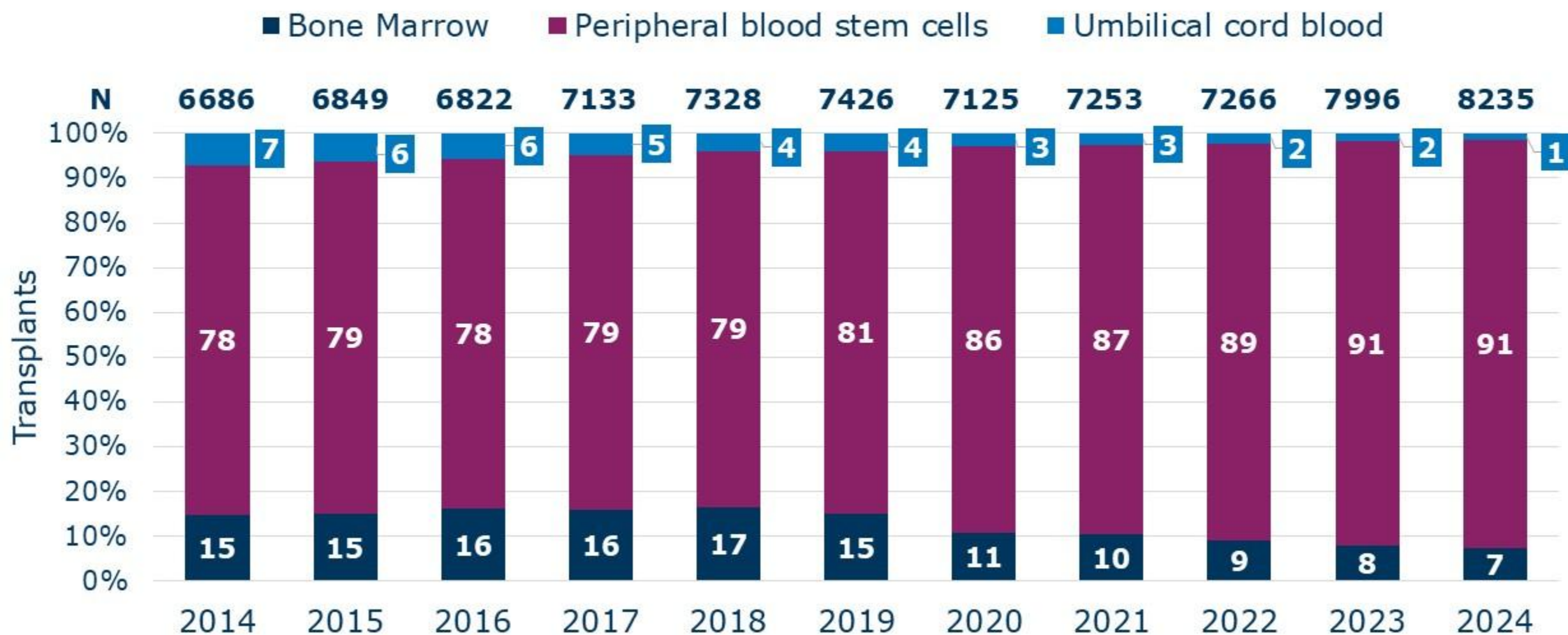


ynmHCT-CI, alloHCTs, by non-malignant indication, US, 2020-2024, pediatrics



Abbreviations: AA, aplastic anemia; autoimmune, autoimmune disease; alloHCT, allogeneic hematopoietic cell transplantation; HLH/other, hemophagocytic lymphohistiocytosis and other histiocytic disorders; IBMF, inherited bone marrow failure; IPD, inherited platelet disorder; metabolic, metabolic disease; non-SCID, non-SCID primary immune deficiency; Other, other non-malignant disease; SCD, sickle cell disease; SCID, severe combined immunodeficiency; Thal, thalassemia; ynmHCT-CI, Youth with non-malignant Disease Hematopoietic Cell Transplantation Comorbidity Index.

AlloHCTs in US by graft source, 2014-2024, adults

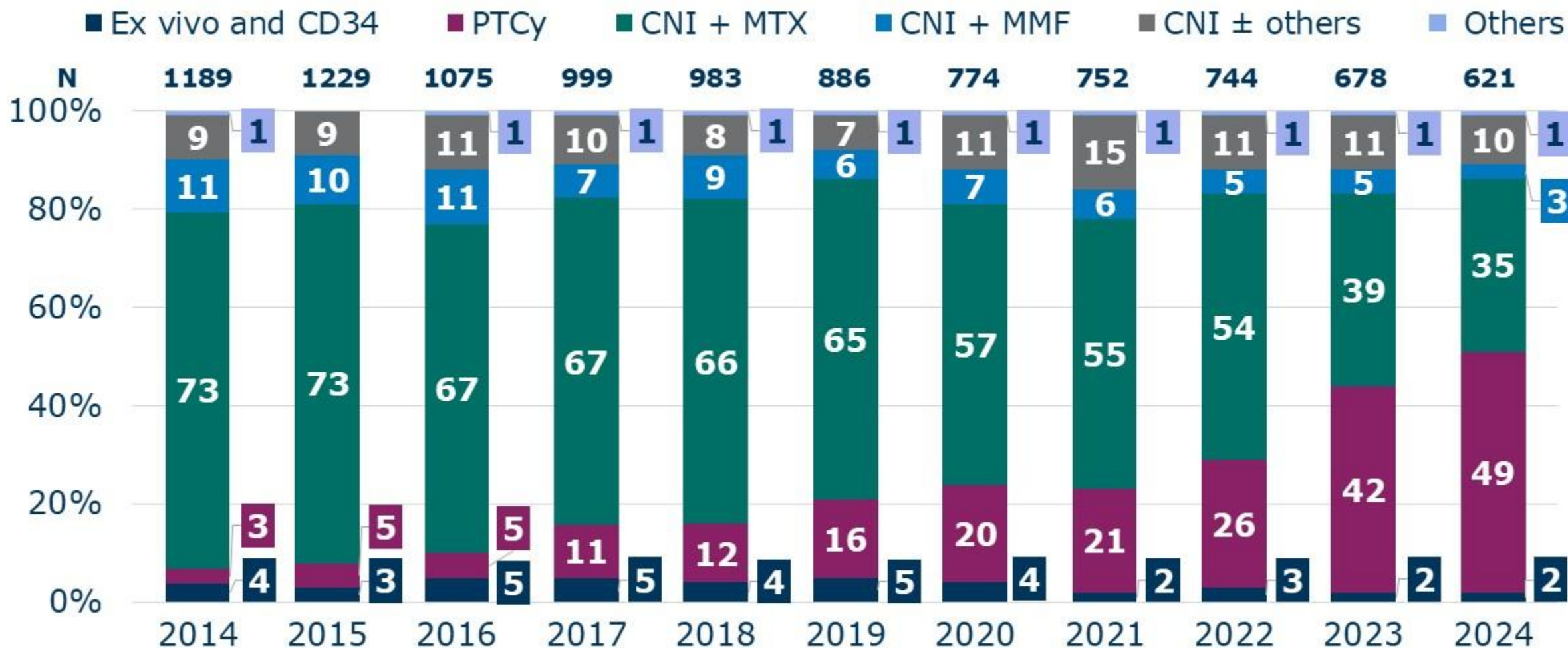


AlloHCTs in US by graft source, 2014-2024, pediatrics

■ Bone marrow ■ Peripheral blood stem cells ■ Umbilical cord blood



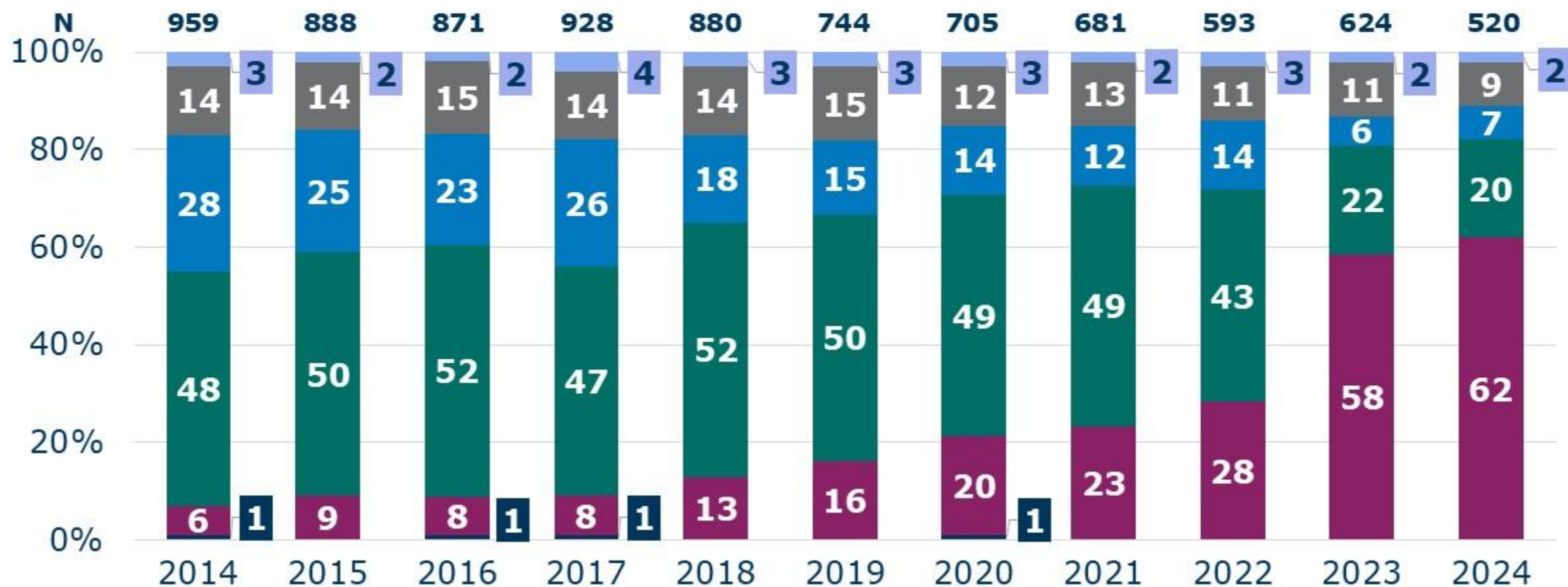
GVHD prophylaxis, MRD HCTs, US, 2014-2024, adults, MAC



Abbreviations: CNI, calcineurin inhibitor; ex vivo and CD34, ex vivo T cell depletion and CD34-selected grafts; GVHD, graft-versus-host disease; HCT, hematopoietic cell transplantation; MAC, myeloablative conditioning; MMF, mycophenolate mofetil; MRD, matched related donor; MTX, methotrexate, PTCy, post-transplant cyclophosphamide.

GVHD prophylaxis of MRD HCTs, US, 2014-2024, adults, RIC/NMA

■ Ex vivo and CD34 ■ PTCy ■ CNI + MTX ■ CNI + MMF ■ CNI ± others ■ Others



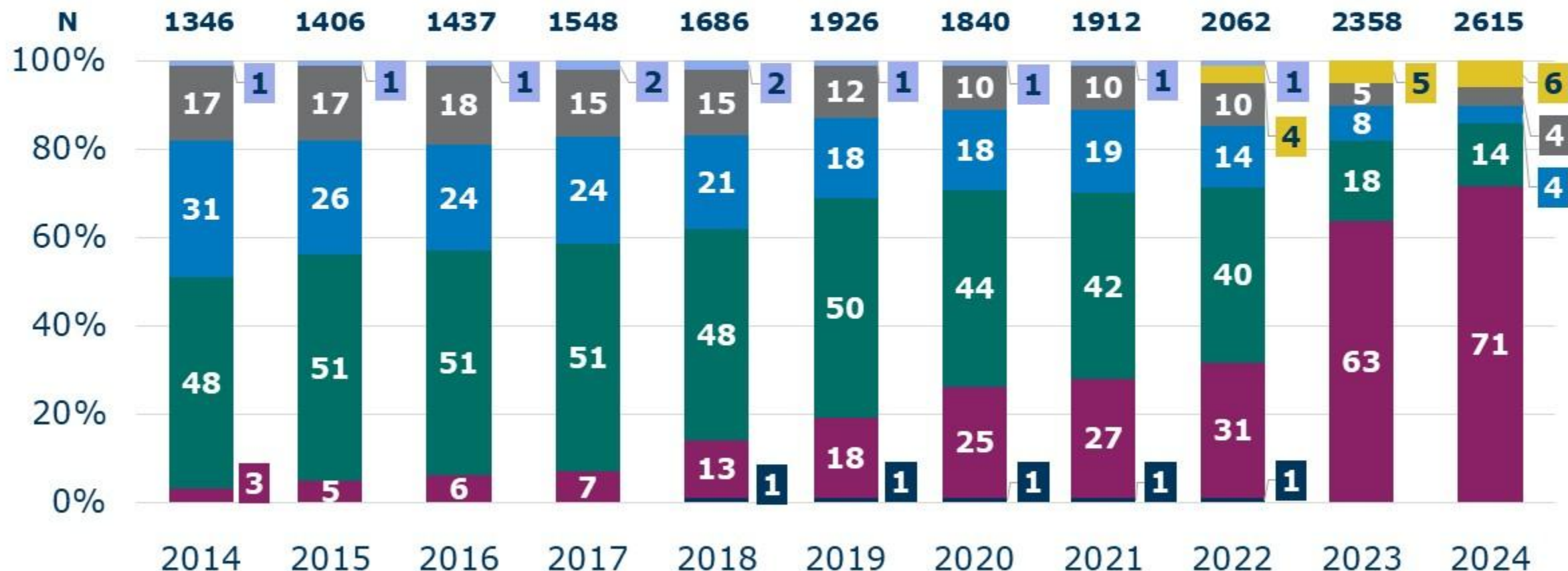
GVHD prophylaxis of MUD HCTs, US, 2014-2024, adults, MAC

■ Ex vivo and CD34 ■ PTCy ■ CNI + MTX ■ CNI + MMF ■ CNI ± others ■ Abatacept ■ Others

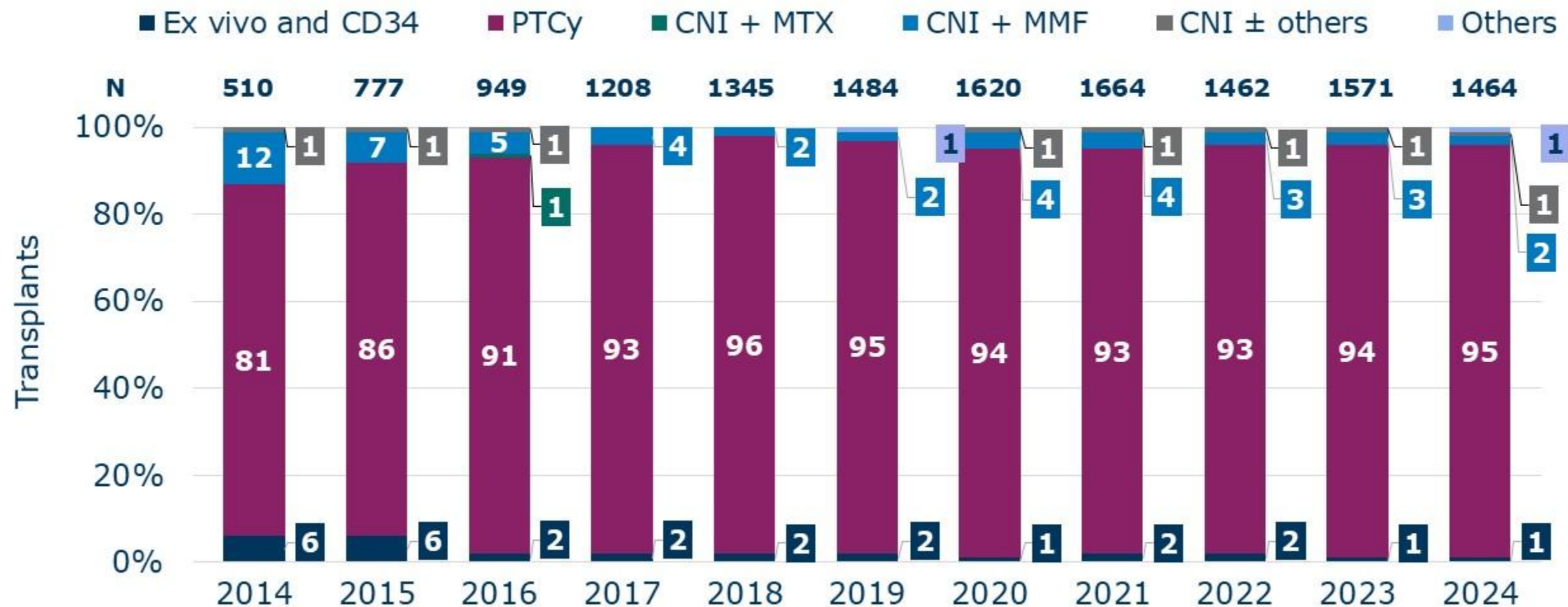


GVHD prophylaxis of MUD HCTs, US, 2014-2024, adults, RIC/NMA

■ Ex vivo and CD34 ■ PTCy ■ CNI + MTX ■ CNI + MMF ■ CNI ± others ■ Abatacept ■ Others



GVHD prophylaxis of haplo donor HCTs, US, 2014-2024, adults



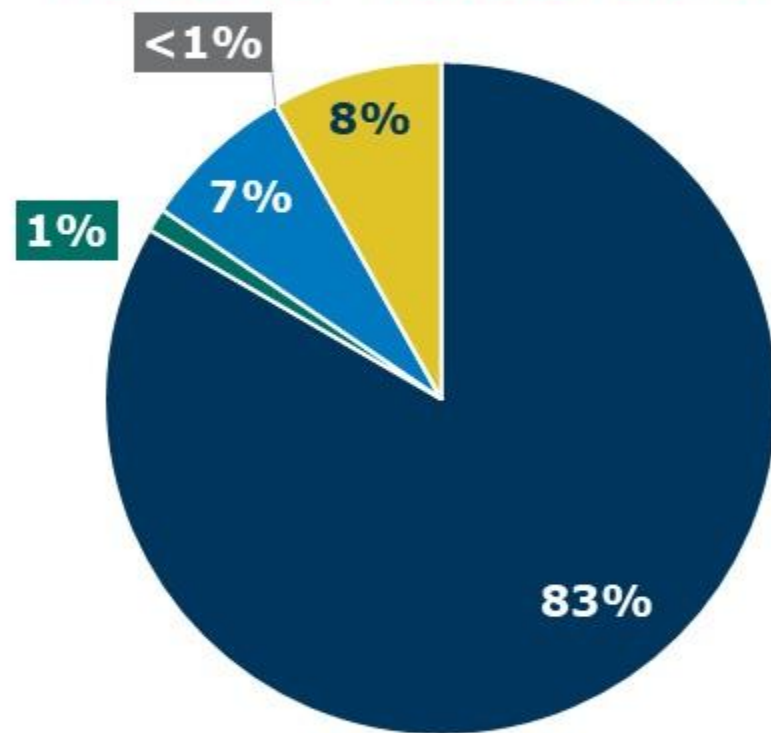
GVHD prophylaxis of MMUD HCTs, US, 2014-2024, adults

■ Ex vivo and CD34 ■ PTCy ■ CNI + MTX ■ CNI + MMF ■ CNI ± others ■ Abatacept ■ Others



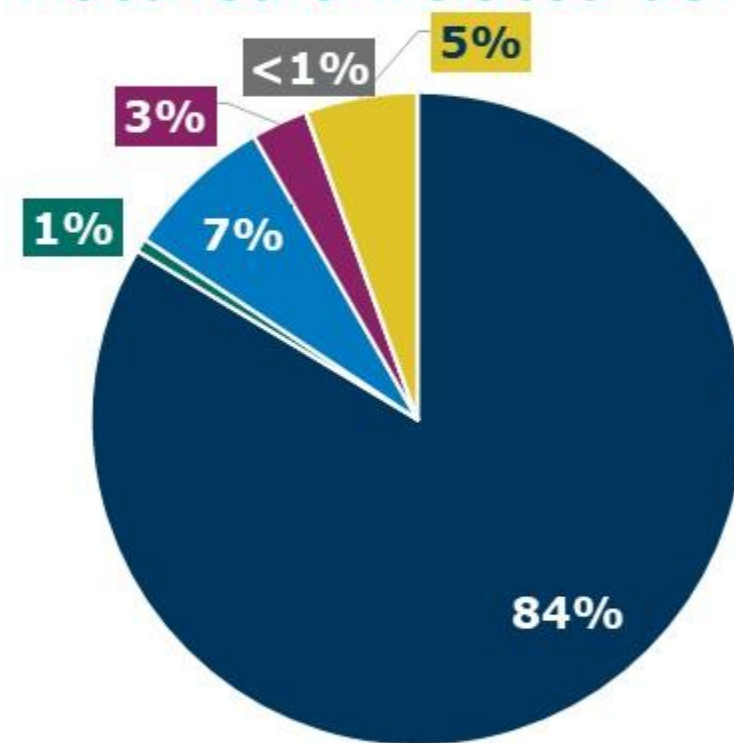
PTCy-based GVHD prophylaxis - PTCy partners, Matched Donors, 2024, adults

Matched related donor



n = 626

Matched unrelated donor

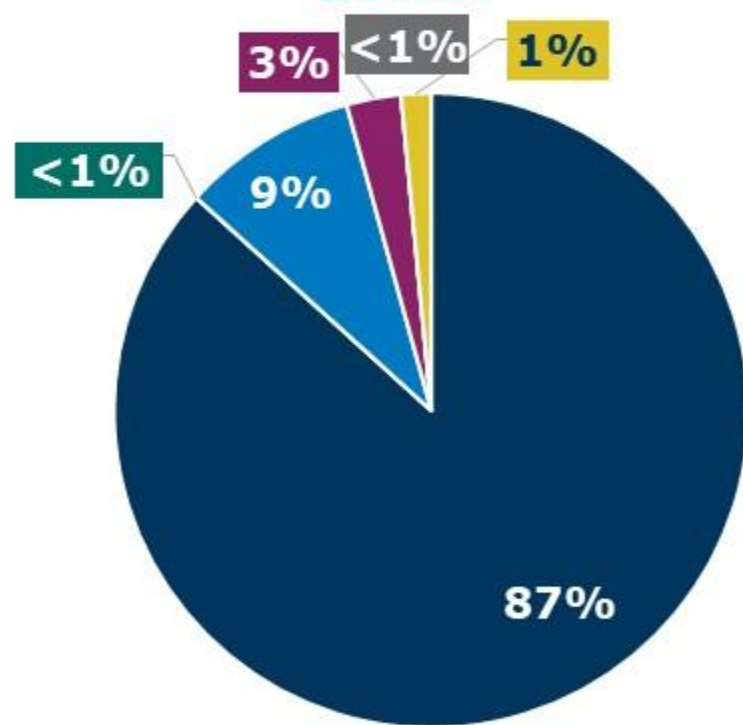


n = 2829

■ CNI + MMF ■ CNI + MTX ■ Siro ■ Abatacept ■ PTCy alone ■ PTCy + other(s)

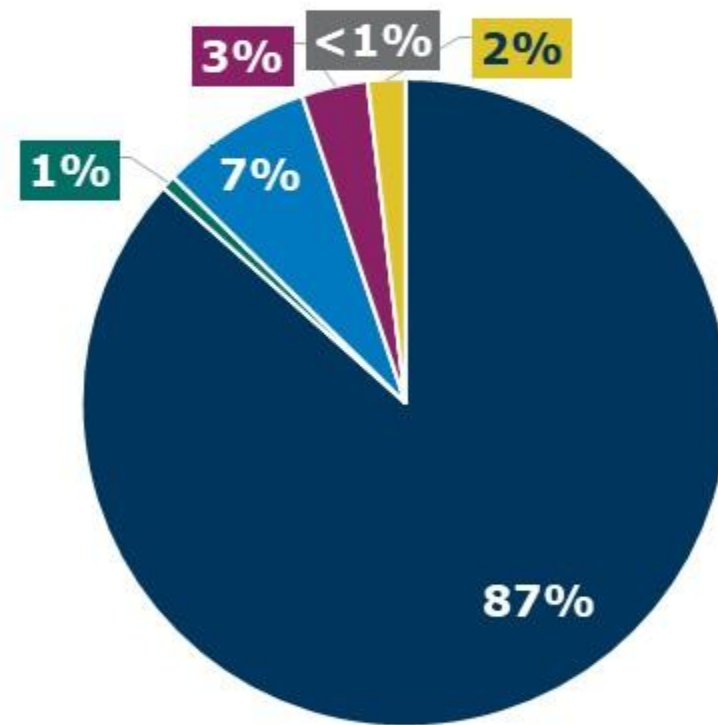
PTCy-based GVHD prophylaxis - PTCy partners, Mismatched Donors, 2024, adults

Mismatched unrelated
donor



n = 1051

Haploidentical



n = 1395

■ CNI + MMF ■ CNI + MTX ■ Siro ■ Abatacept ■ PTCy alone ■ PTCy + other(s)

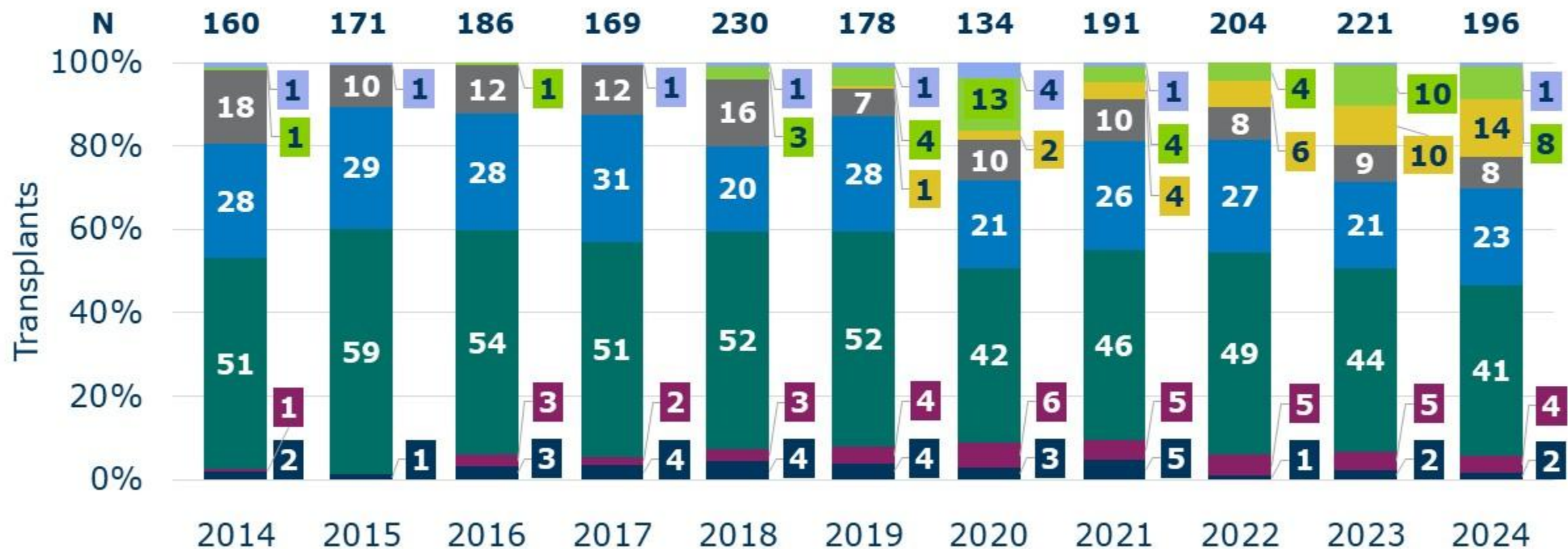
GVHD prophylaxis of MRD HCTs, US, 2014-2024, pediatrics, malignant diseases

■ Ex vivo and CD34 ■ PTCy ■ CNI + MTX ■ CNI + MMF ■ CNI ± others ■ Abatacept ■ Others



GVHD prophylaxis of MRD HCTs, US, 2014-2024, pediatrics, non-malignant diseases

■ Ex vivo and CD34 ■ PTCy ■ CNI + MTX ■ CNI + MMF ■ CNI ± others ■ Abatacept ■ Siro ■ Others

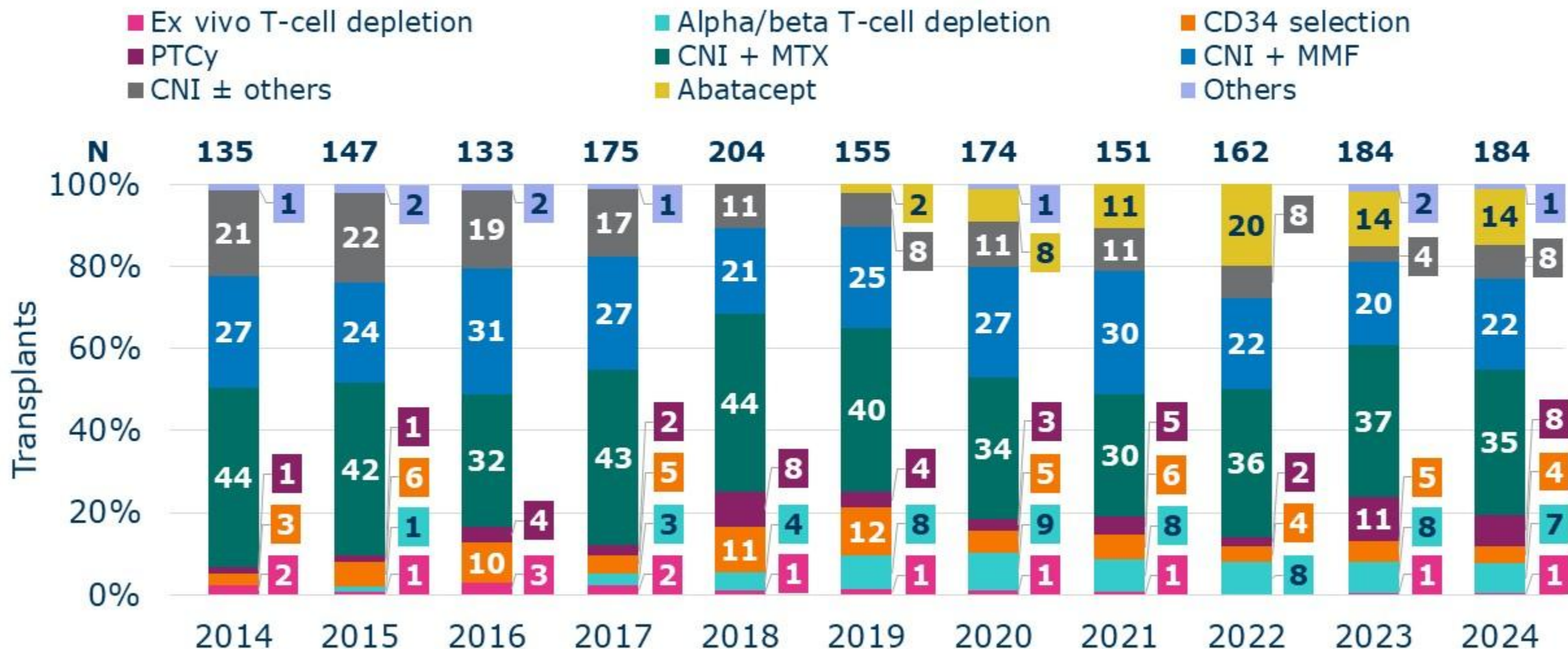


GVHD prophylaxis of MUD HCTs, US, 2014-2024, pediatrics, malignant diseases

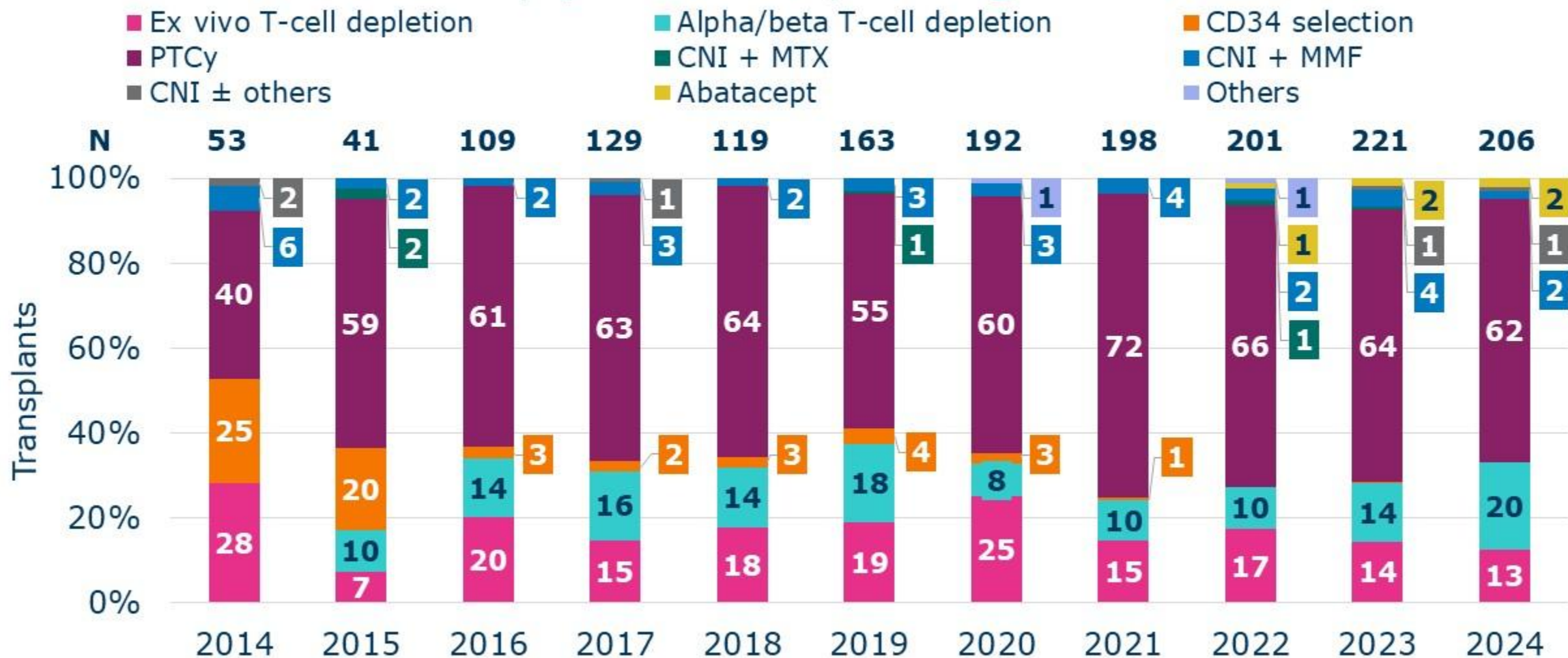
- Ex vivo T-cell depletion
- PTCy
- CNI ± others
- Alpha/beta T-cell depletion
- CNI + MTX
- Abatacept
- CD34 selection
- CNI + MMF
- Others



GVHD prophylaxis of MUD HCTs, US, 2014-2024, pediatrics, non-malignant diseases

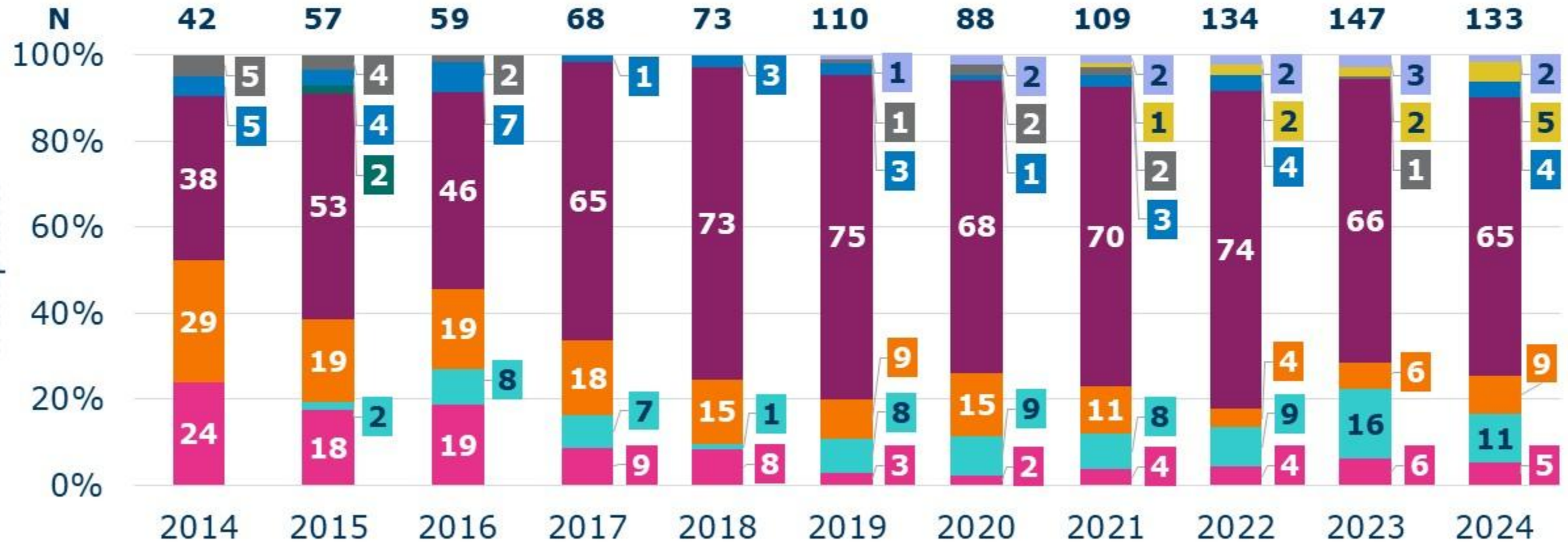


GVHD prophylaxis of haplo HCTs, US, 2014-2024, pediatrics, malignant diseases

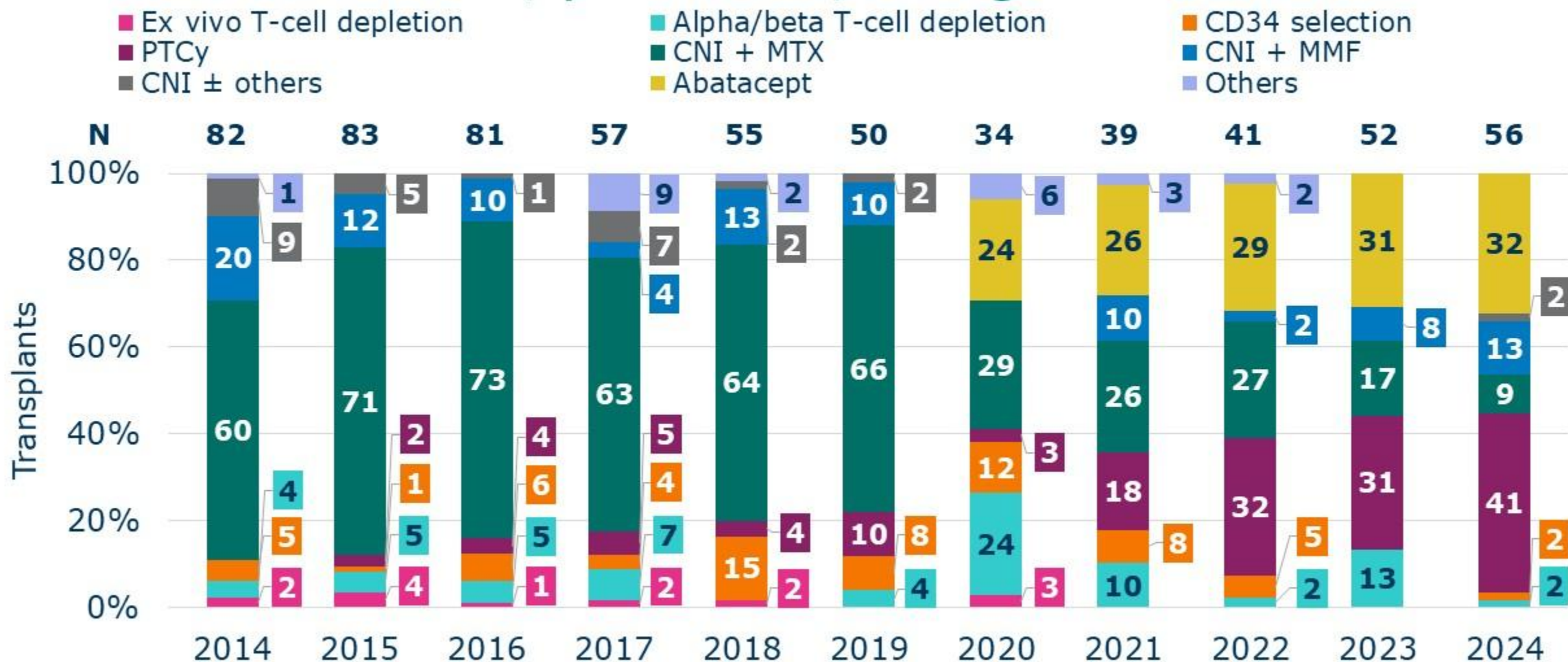


GVHD prophylaxis of haplo HCTs, US, 2014-2024, pediatrics, non-malignant diseases

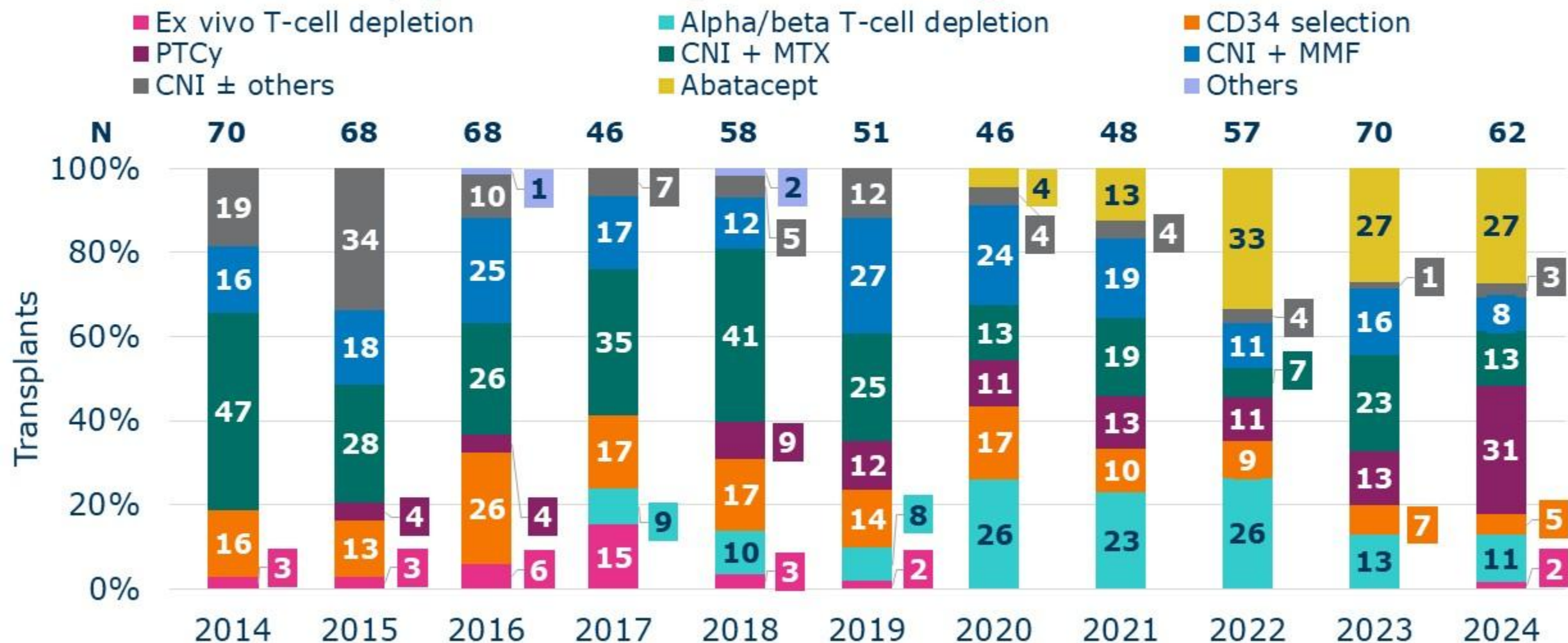
- Ex vivo T-cell depletion
- PTCy
- CNI ± others
- Alpha/beta T-cell depletion
- CNI + MTX
- Abatacept
- CD34 selection
- CNI + MMF
- Others



GVHD prophylaxis of MMUD HCTs, US, 2014-2024, pediatrics, malignant diseases



GVHD prophylaxis of MMUD HCTs, US, 2014-2024, pediatrics, non-malignant diseases

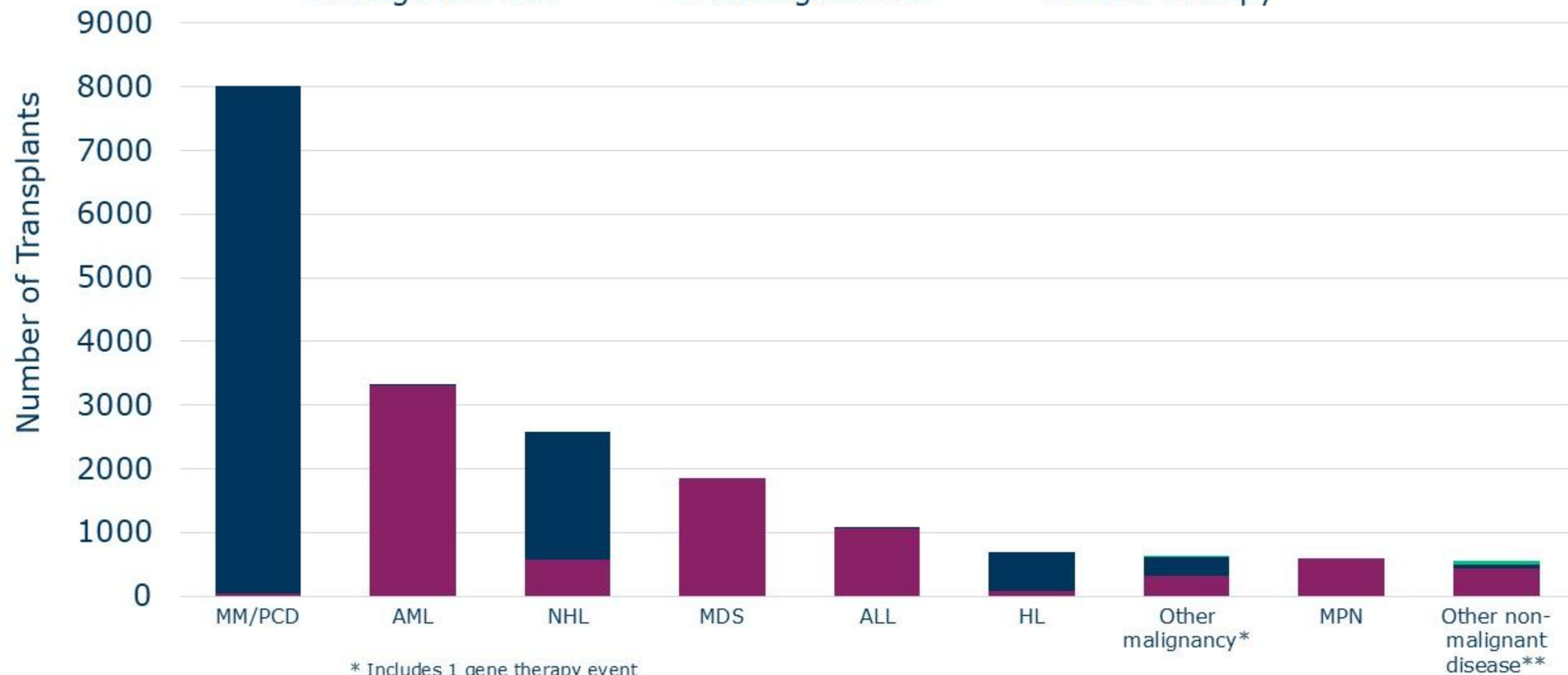


HCTs by indications, US, adults, 2024

■ Allogeneic HCT

■ Autologous HCT

■ Gene therapy

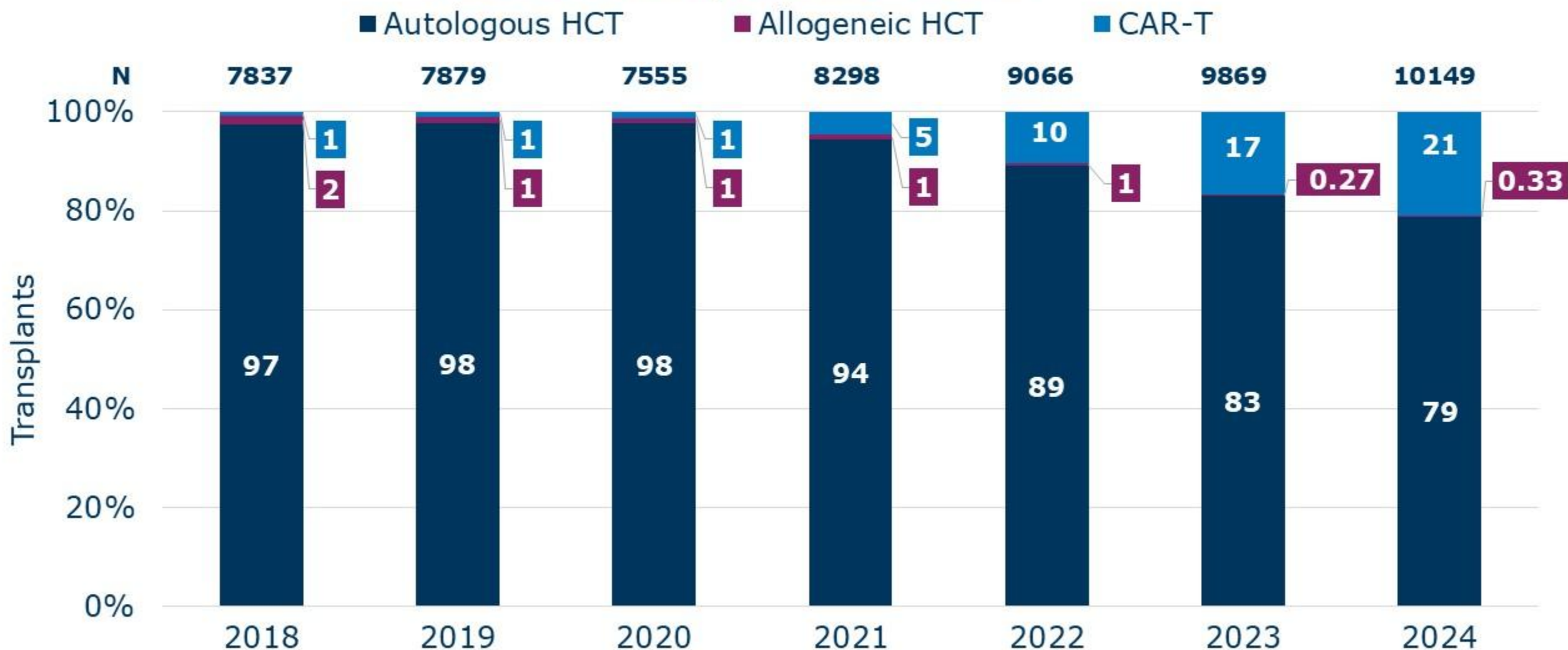


* Includes 1 gene therapy event

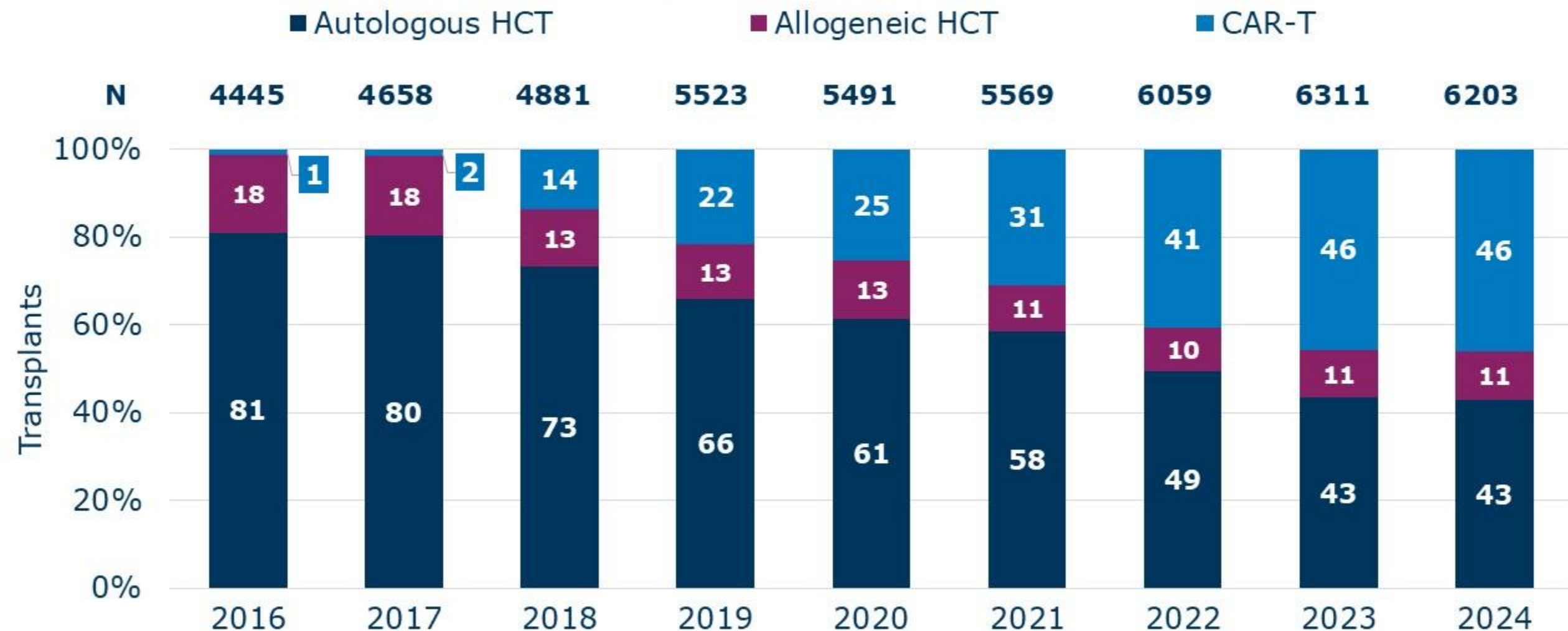
** Includes 46 gene therapy events

Abbreviations: ALL, acute lymphoblastic leukemia; AML, acute myeloid leukemia; HCT, hematopoietic cell transplantation; HL, Hodgkin lymphoma; MDS, myelodysplastic syndrome; MM/PCD, multiple myeloma/plasma cell disorder; MPN, myeloproliferative neoplasm. NHL, non-Hodgkin lymphoma.

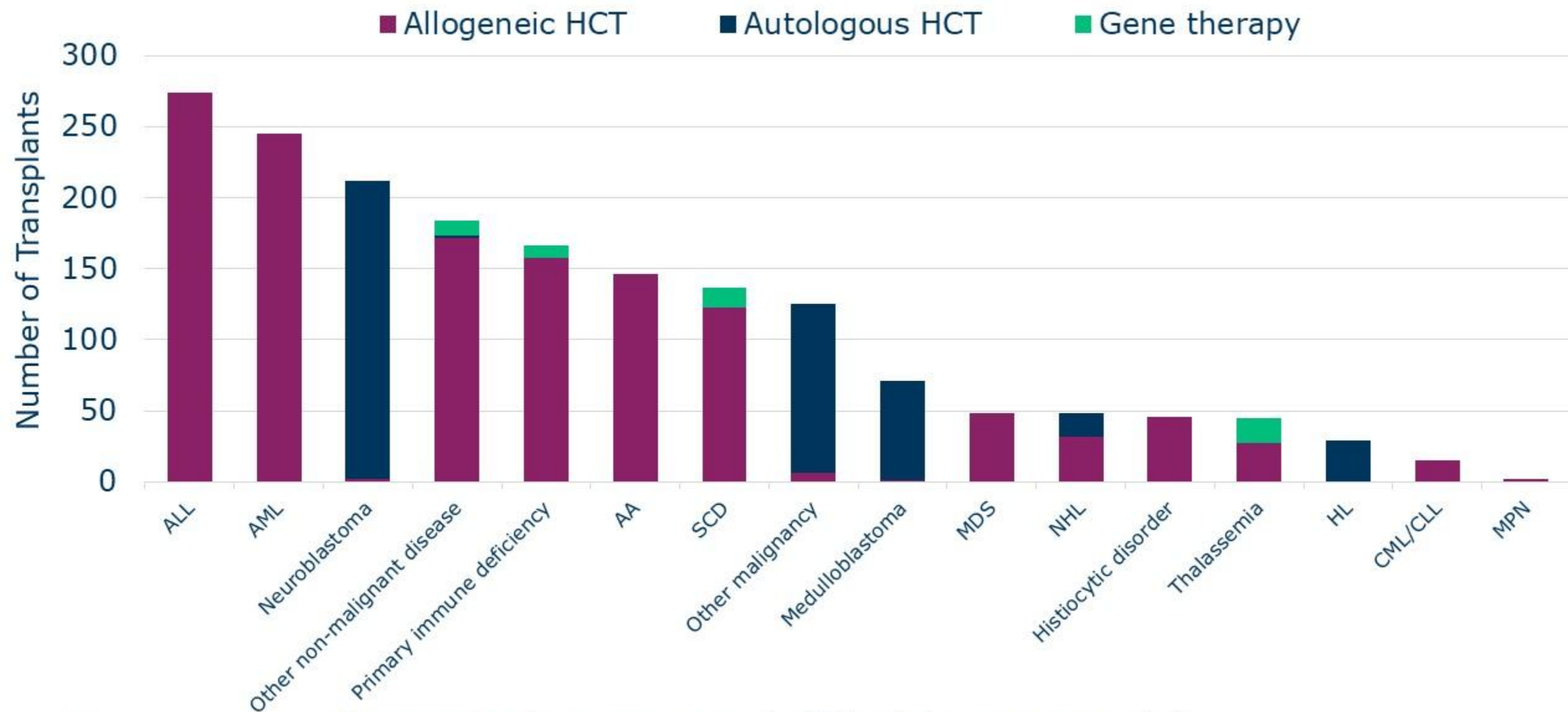
Relative proportion of multiple myeloma treatments, 2018-2024



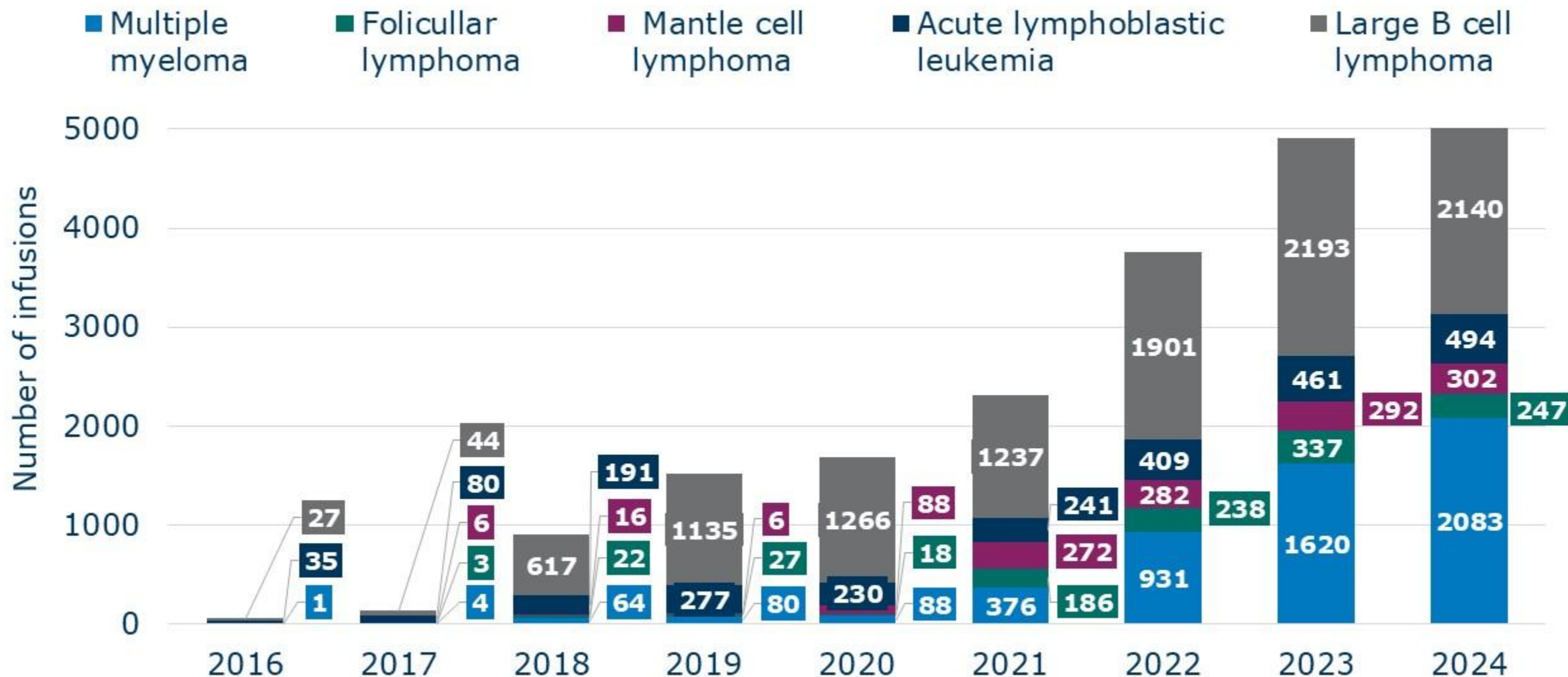
Relative proportion of lymphoma treatments, US, 2016-2024



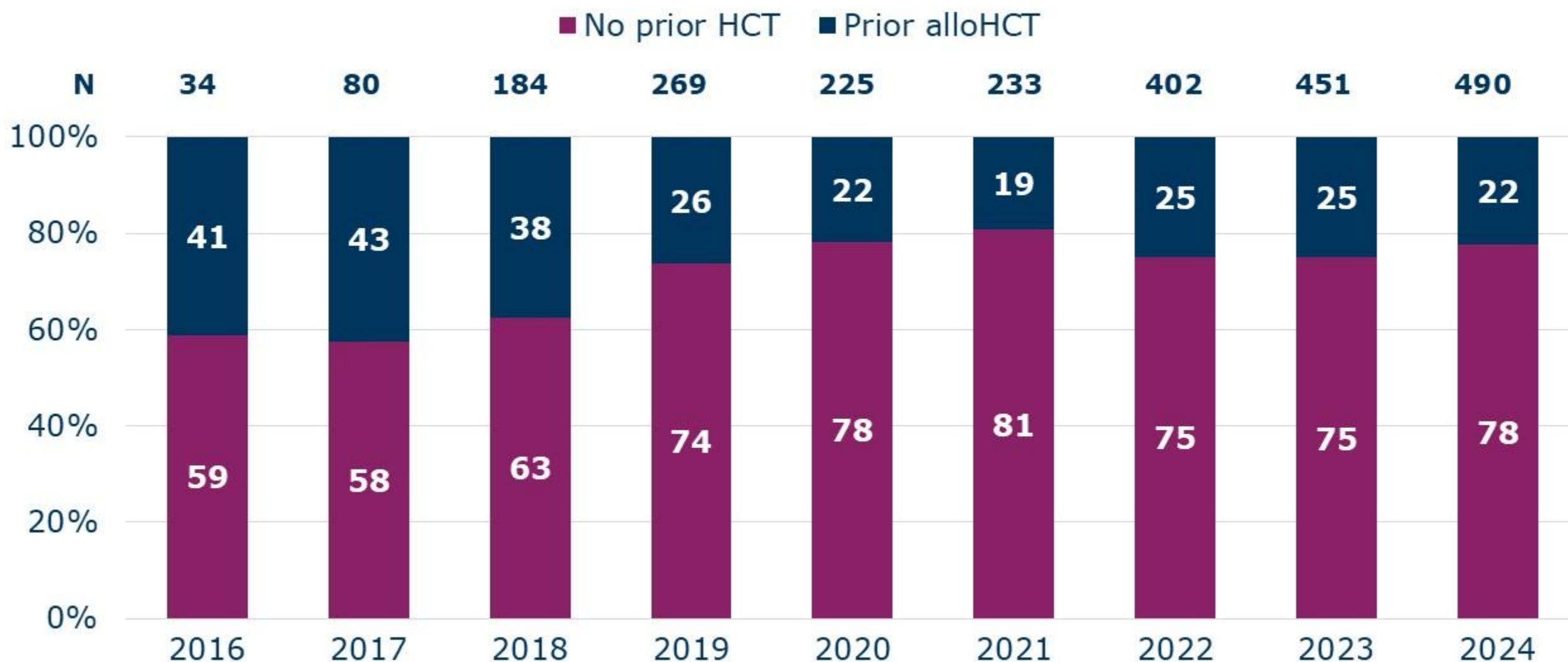
HCTs by indication, US, pediatrics, 2024



CAR-T infusions by indication, US, 2016-2024

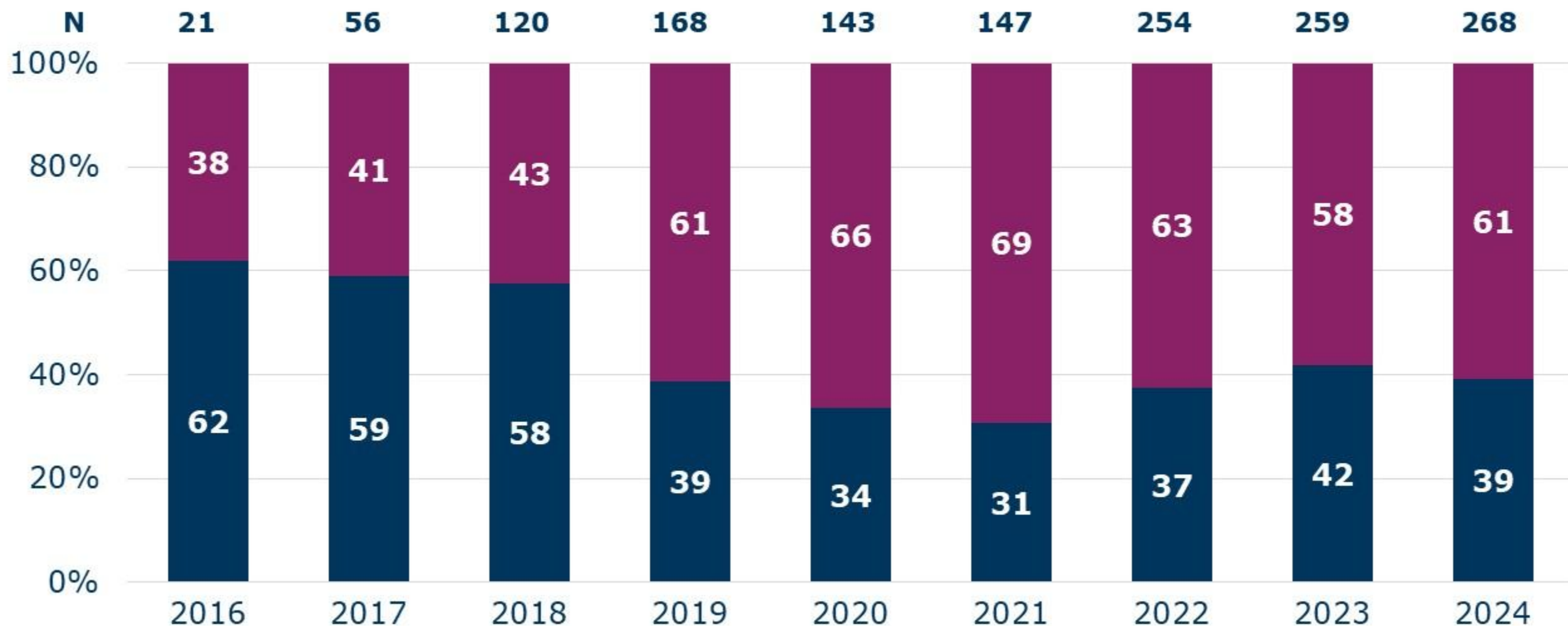


Trends in the use of CAR-T after alloHCT for ALL

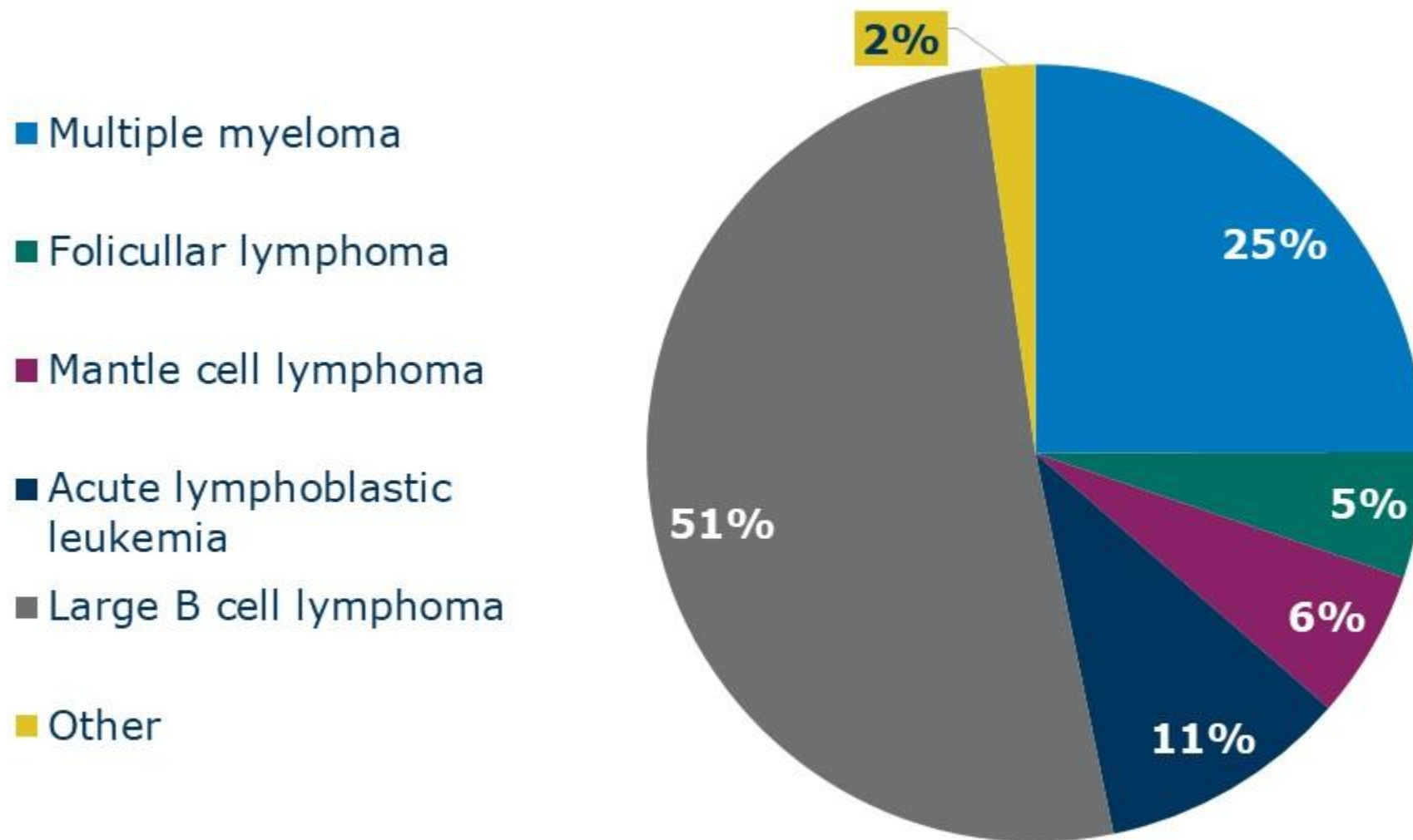


Trends in alloHCT for ALL patients with prior CAR-T

■ No prior CAR-T ■ Prior CAR-T

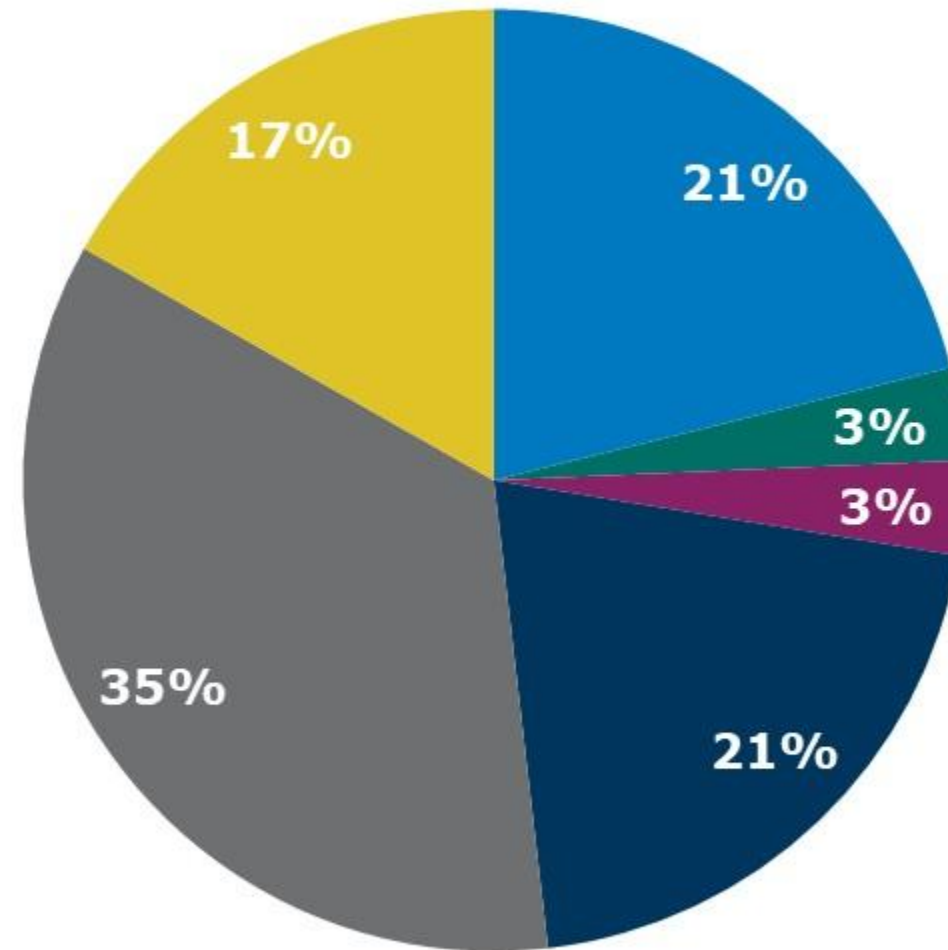


Commercial CAR-T cells by indication, 2016-2024

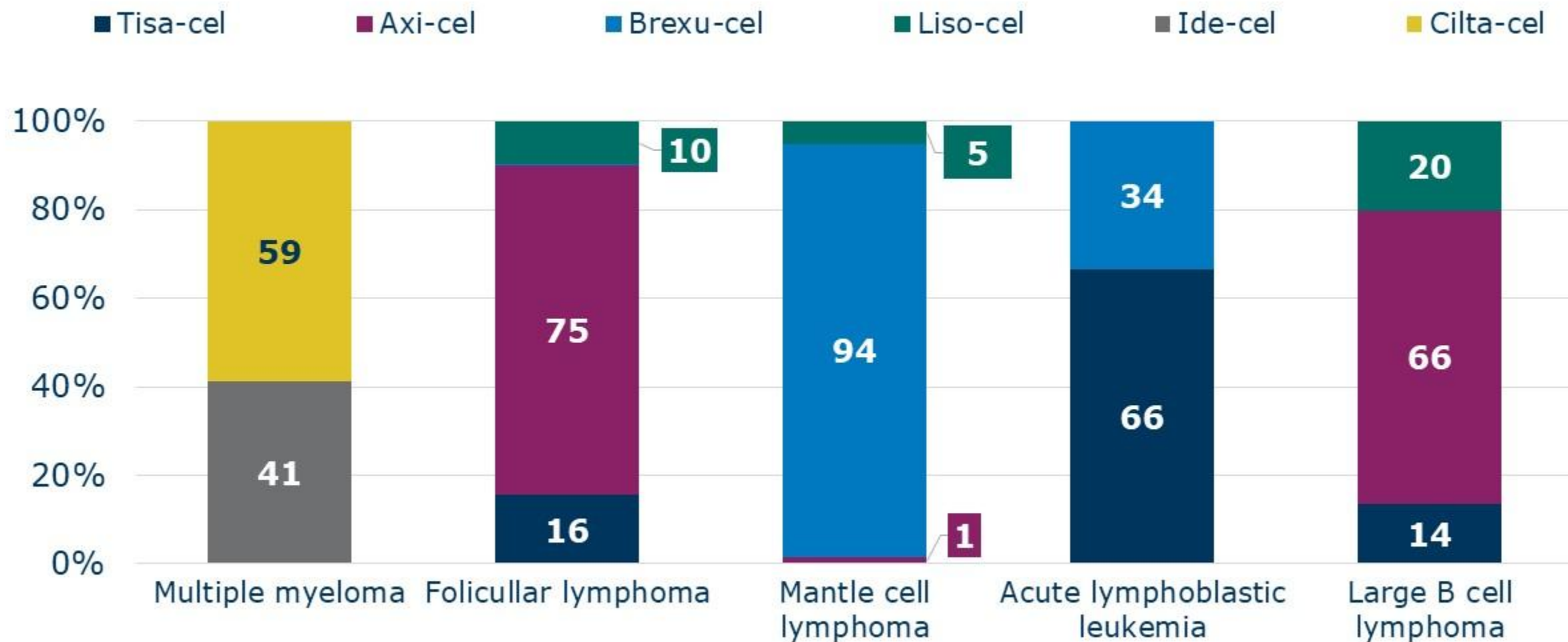


Non-commercial CAR-T cells by indication, 2016-2024

- Multiple myeloma
- Follicular lymphoma
- Mantle cell lymphoma
- Acute lymphoblastic leukemia
- Large B cell lymphoma
- Other



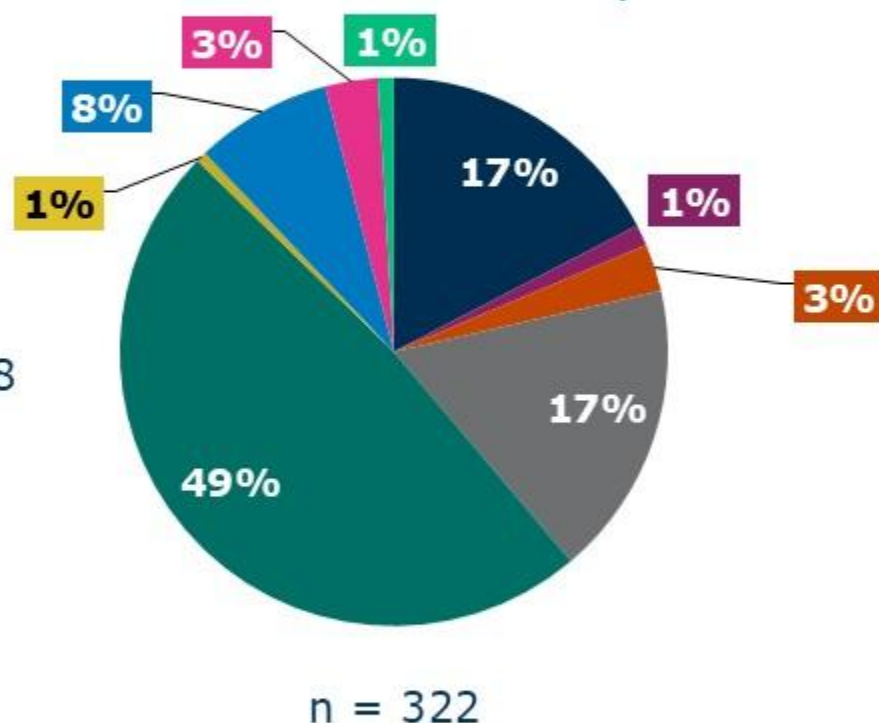
Infusions of commercial CAR-T cell products, US, 2016-2024



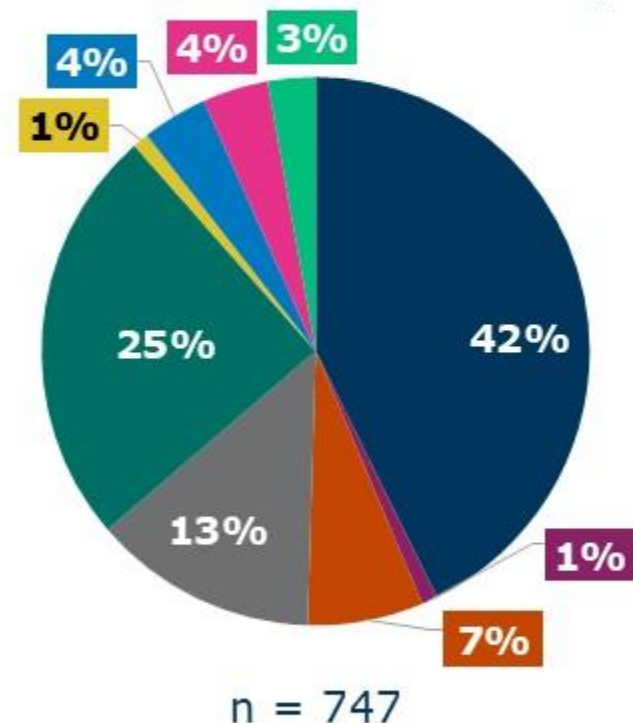
Causes of death after alloHCT, pediatrics, US, 2020-2024, all donor sources

Age < 18 years
Total transplants = 6308

Died within 100 days



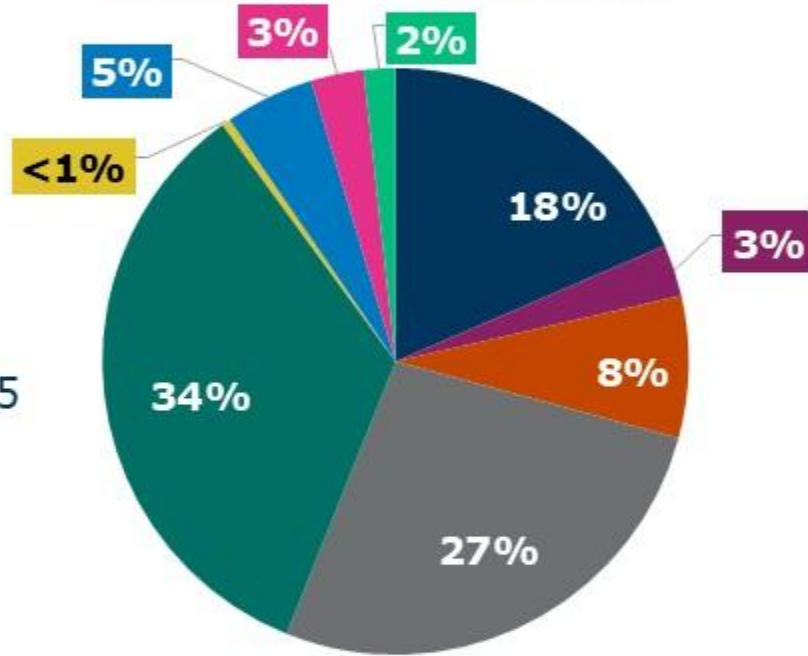
Died at or after 100 days



- Primary disease
- Graft rejection
- GVHD
- Hemorrhage
- Infection
- Secondary malignancy
- Organ failure
- Other
- Not reported

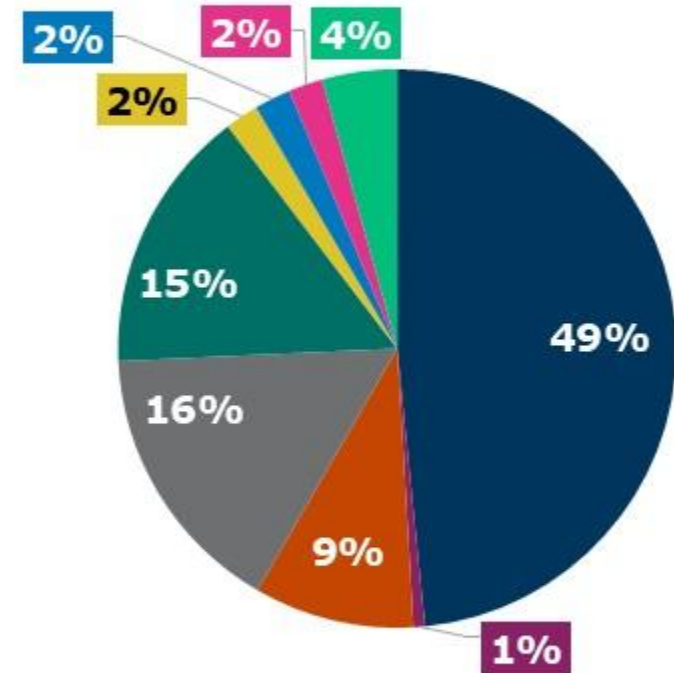
Causes of death after alloHCT, adults, US, 2020-2024, all donor sources

Died within 100 days



n = 2963

Died at or after 100 days



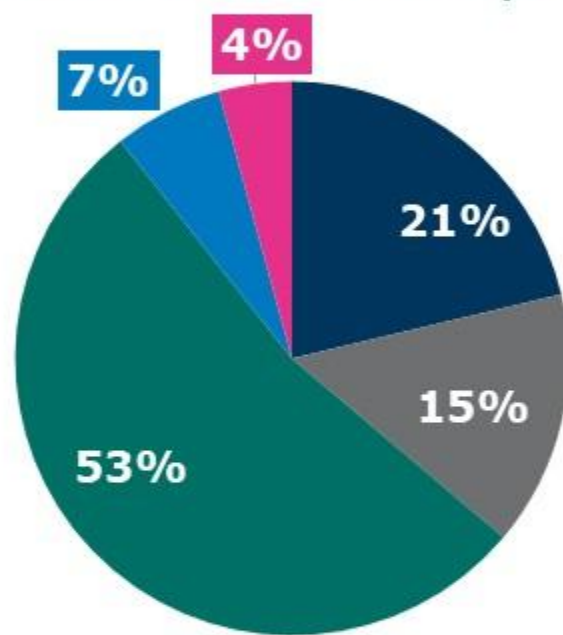
n = 9230

- Primary disease
- Graft rejection
- GVHD
- Hemorrhage
- Infection
- Secondary malignancy
- Organ failure
- Other
- Not reported

Age ≥ 18 years
Total transplants = 37655

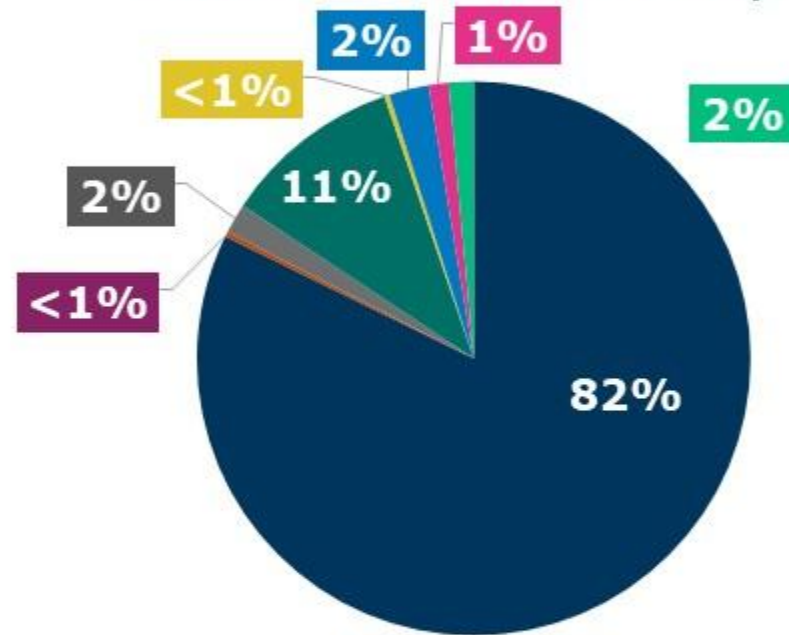
Causes of death after autoHCT, pediatrics, US, 2020-2024, all donor sources

Died within 100 days



n = 47

Died at or after 100 days



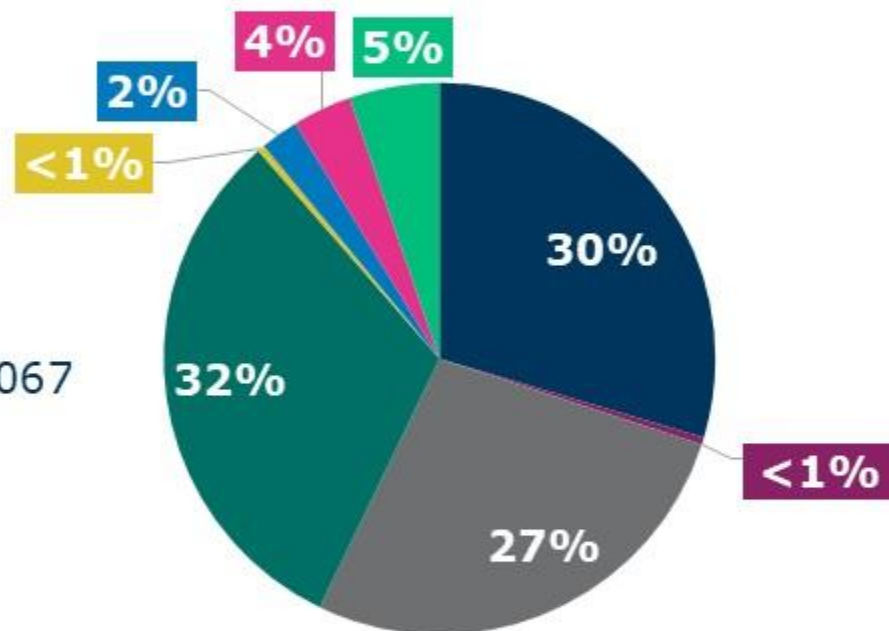
n = 344

- Primary disease
- Graft rejection
- GVHD
- Hemorrhage
- Infection
- Secondary malignancy
- Organ failure
- Other
- Not reported

Age < 18 years
Total transplants = 2374

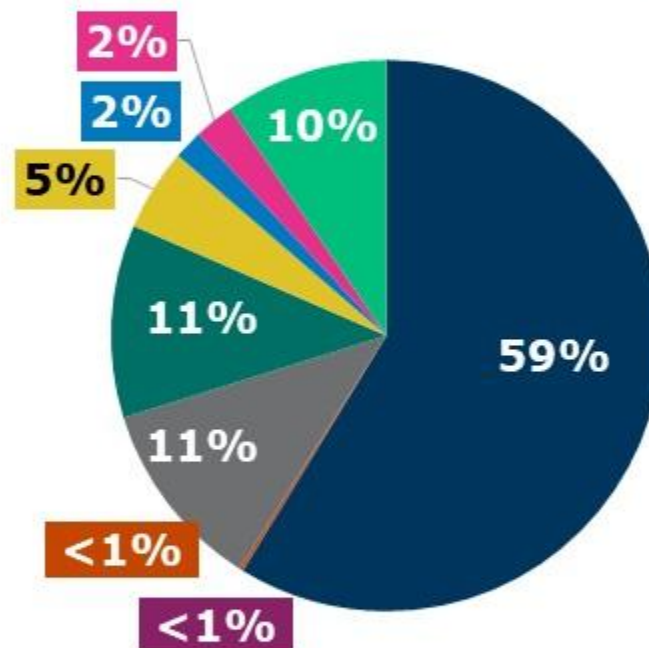
Causes of death after autoHCT, adults, US, 2020-2024, all donor sources

Died within 100 days



n = 719

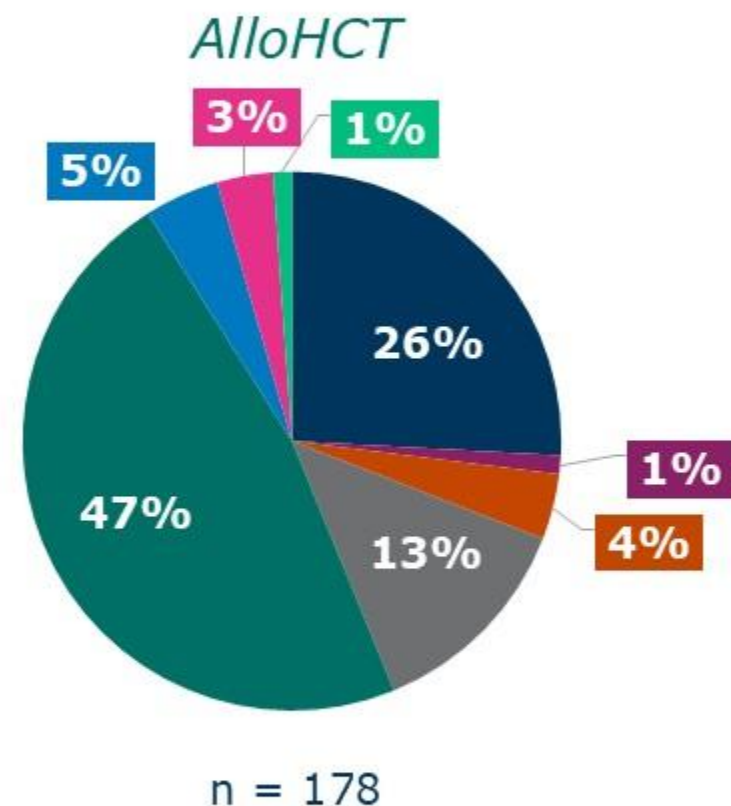
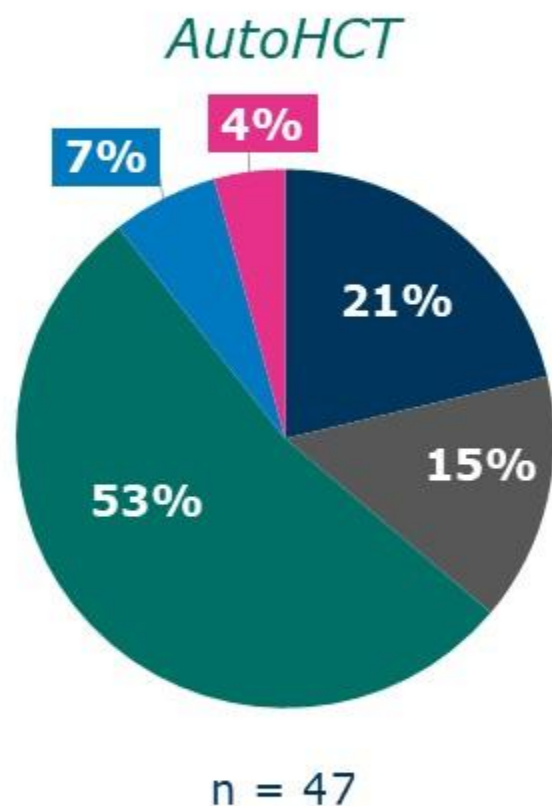
Died at or after 100 days



n = 5251

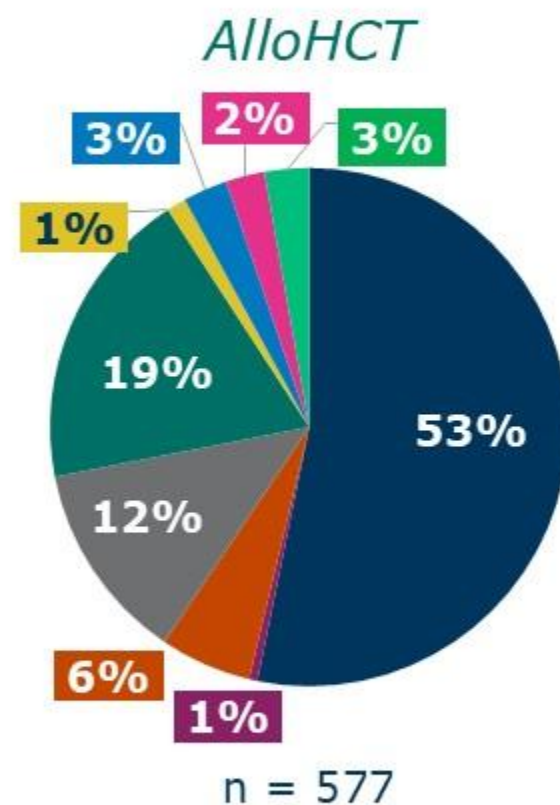
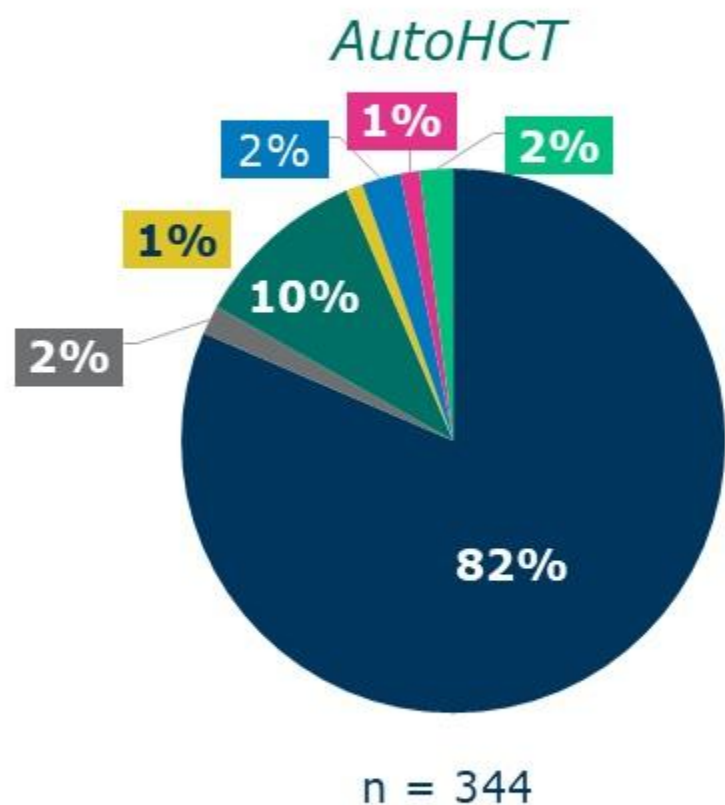
- Primary disease
- Graft rejection
- GVHD
- Hemorrhage
- Infection
- Secondary malignancy
- Organ failure
- Other
- Not reported

Causes of death before 100 days after HCT for malignant indication, US, 2020-2024, pediatrics



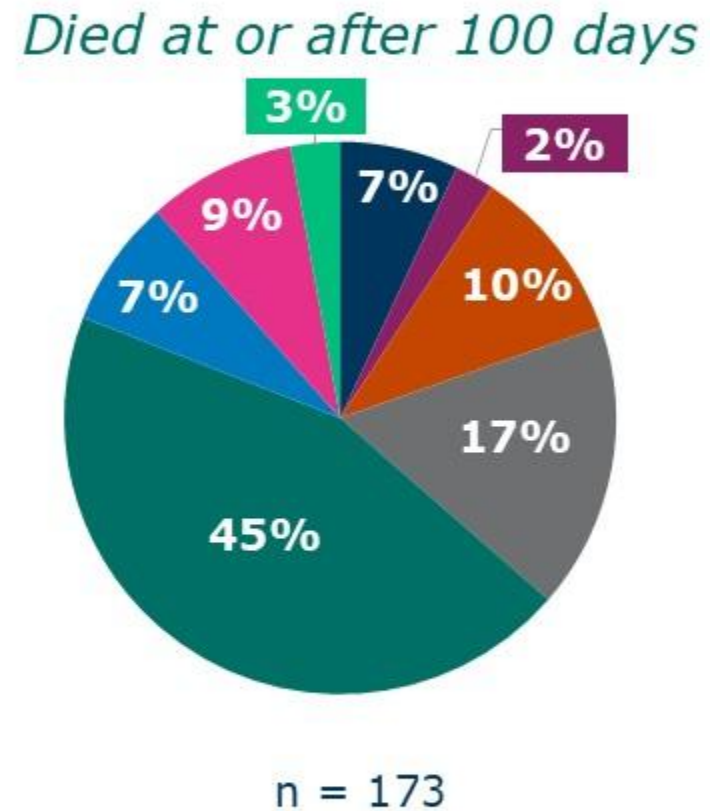
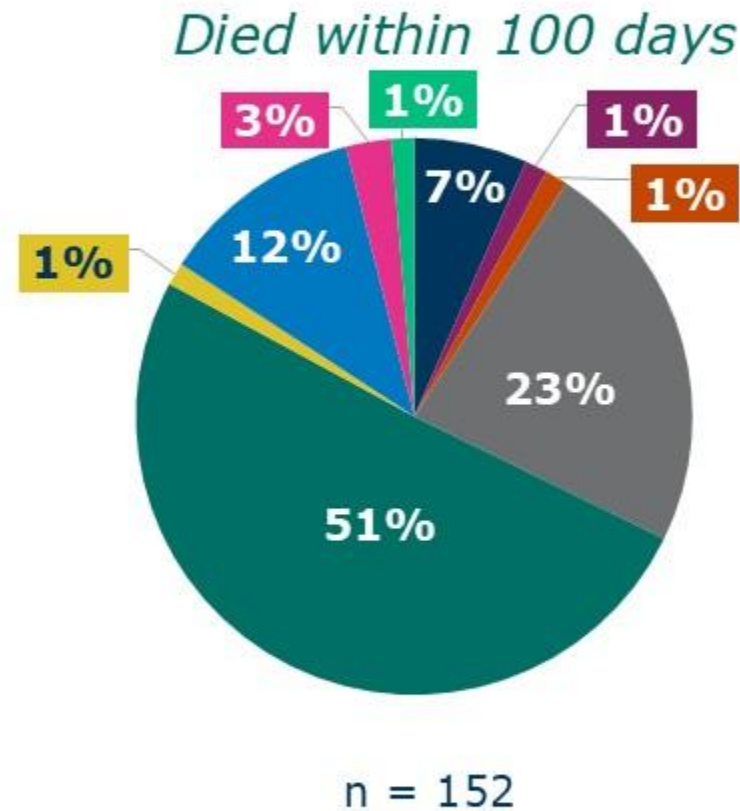
- Primary disease
- Graft rejection
- GVHD
- Hemorrhage
- Infection
- Secondary malignancy
- Organ failure
- Other
- Not reported

Causes of death on or after 100 days after HCT for malignant indication, US, 2020-2024, pediatrics



- Primary disease
- Secondary malignancy
- Graft rejection
- Organ failure
- GVHD
- Hemorrhage
- Infection
- Other
- Not reported

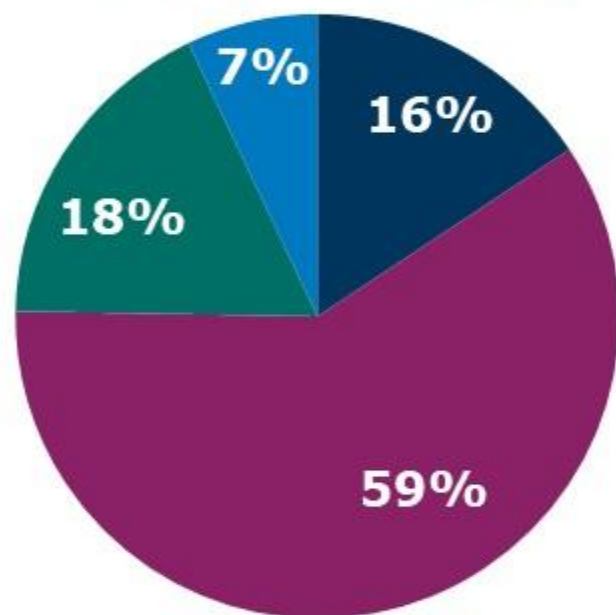
Causes of death after HCT for non-malignant indication, US, 2020-2024, pediatrics



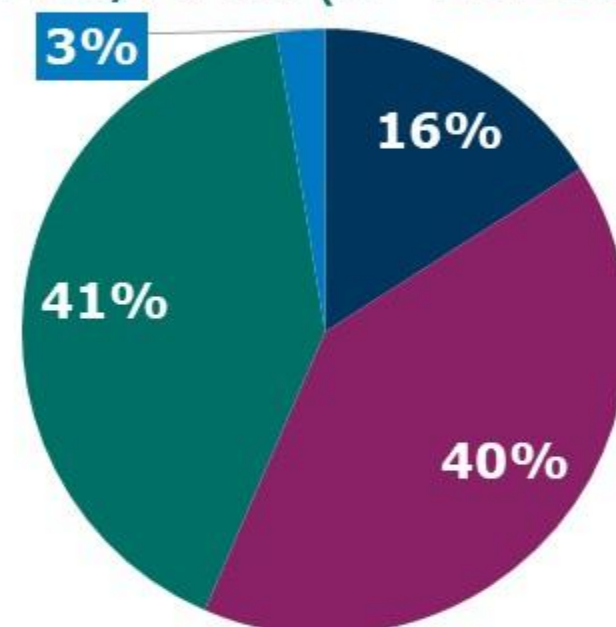
- Primary disease
- Graft rejection
- GVHD
- Hemorrhage
- Infection
- Secondary malignancy
- Organ failure
- Other
- Not reported

Common conditioning regimens for AML, MDS, and MPN alloHCTs, US, 2020-2024, adult

MAC (n=10639)



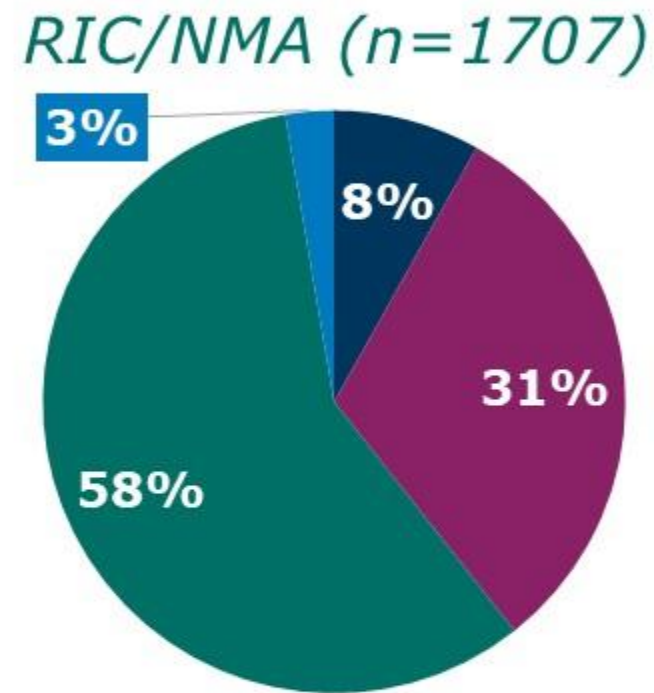
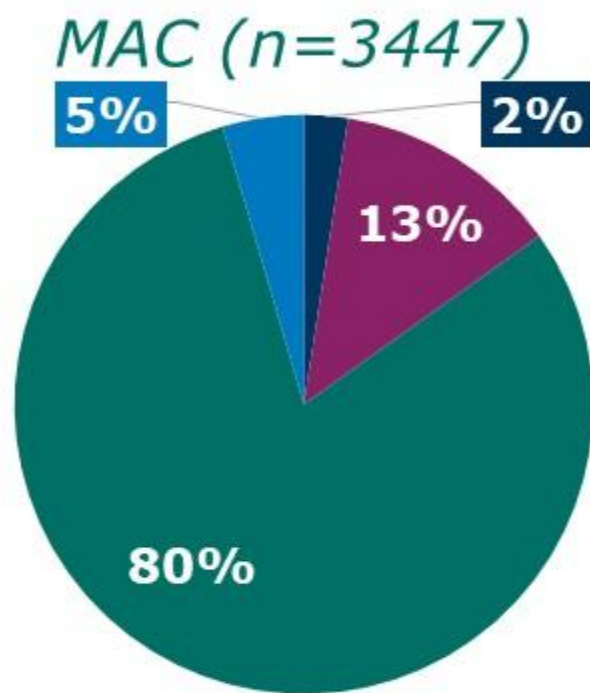
RIC/NMA (n=15339)



■ MAC Bu/Cy ± others ■ MAC Bu/Flu ± others ■ MAC TBI ± others ■ MAC others

■ RIC Bu/Flu ± others ■ RIC Flu/Mel ± others ■ RIC TBI ± others ■ RIC other

Common conditioning regimens for ALL alloHCTs, US, 2020-2024, adult

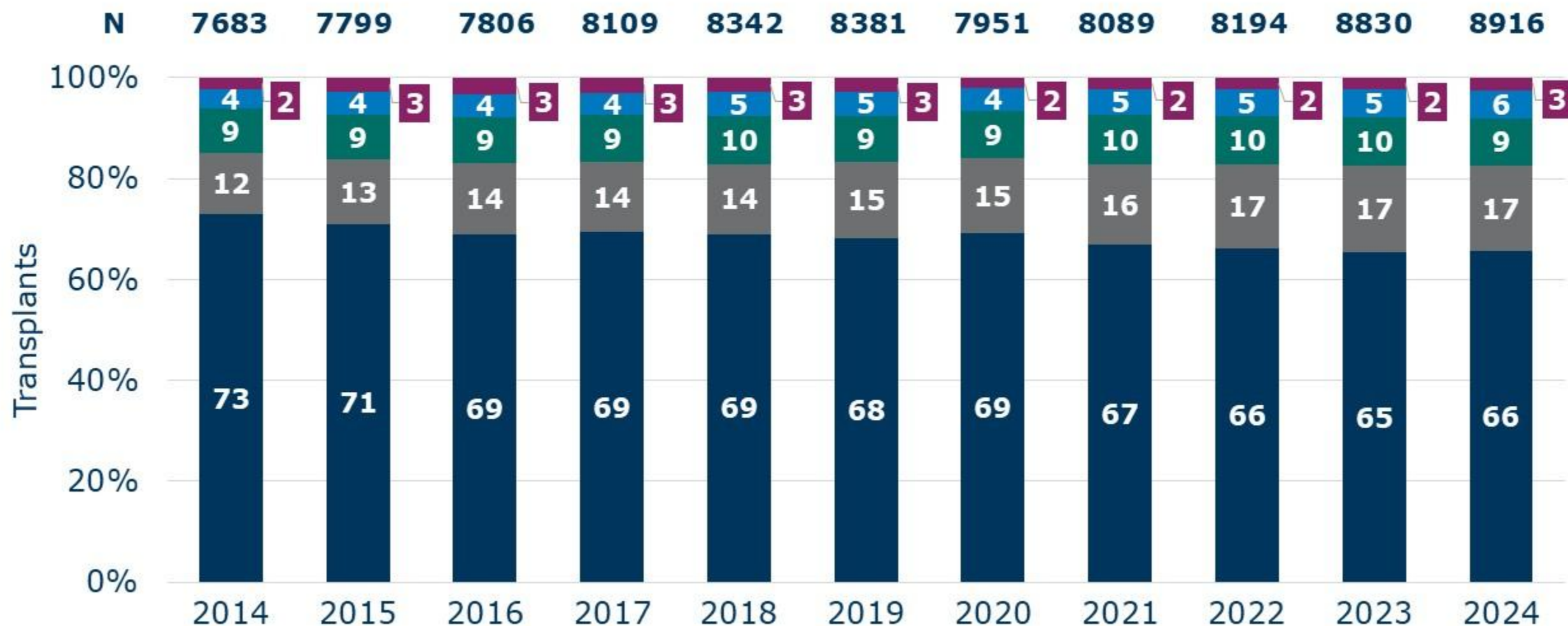


■ MAC Bu/Cy ± others ■ MAC Bu/Flu ± others ■ MAC TBI ± others ■ MAC others

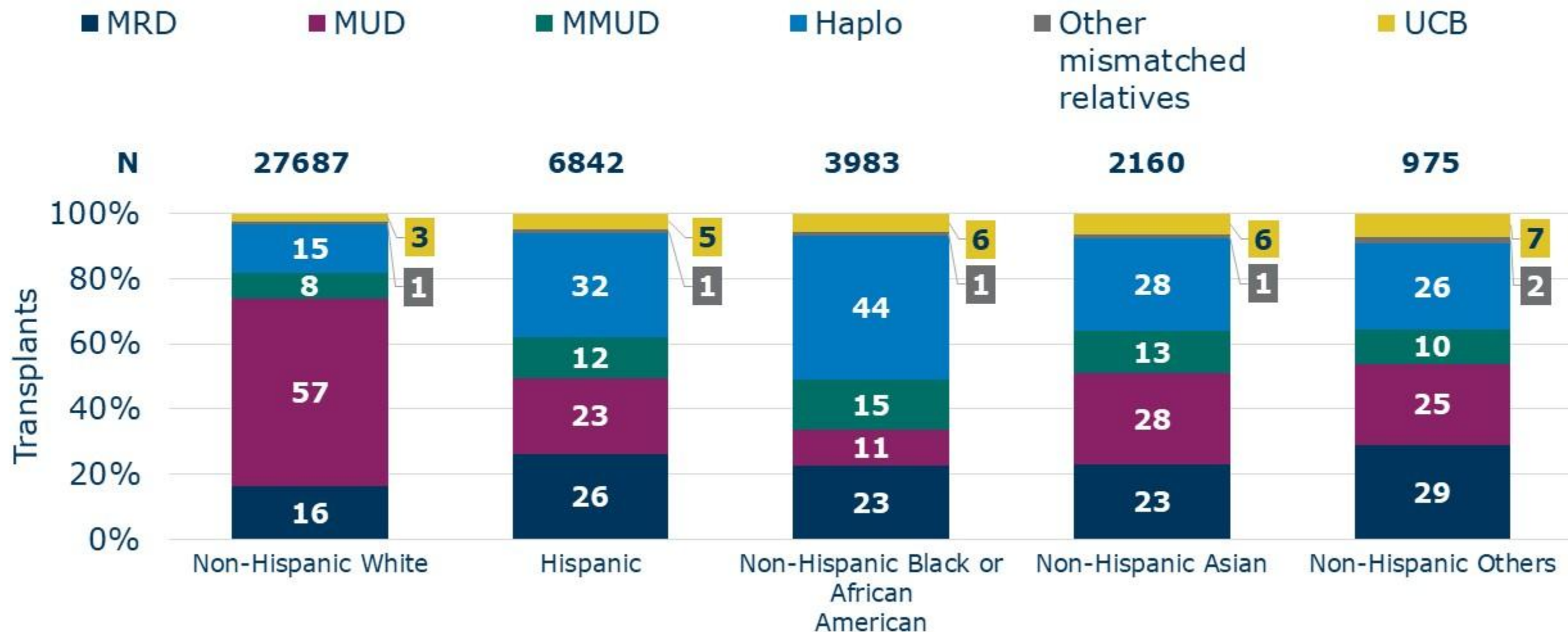
■ RIC Bu/Flu ± others ■ RIC Flu/Mel ± others ■ RIC TBI ± others ■ RIC other

AlloHCTs by race and ethnicity, US, 2014-2024

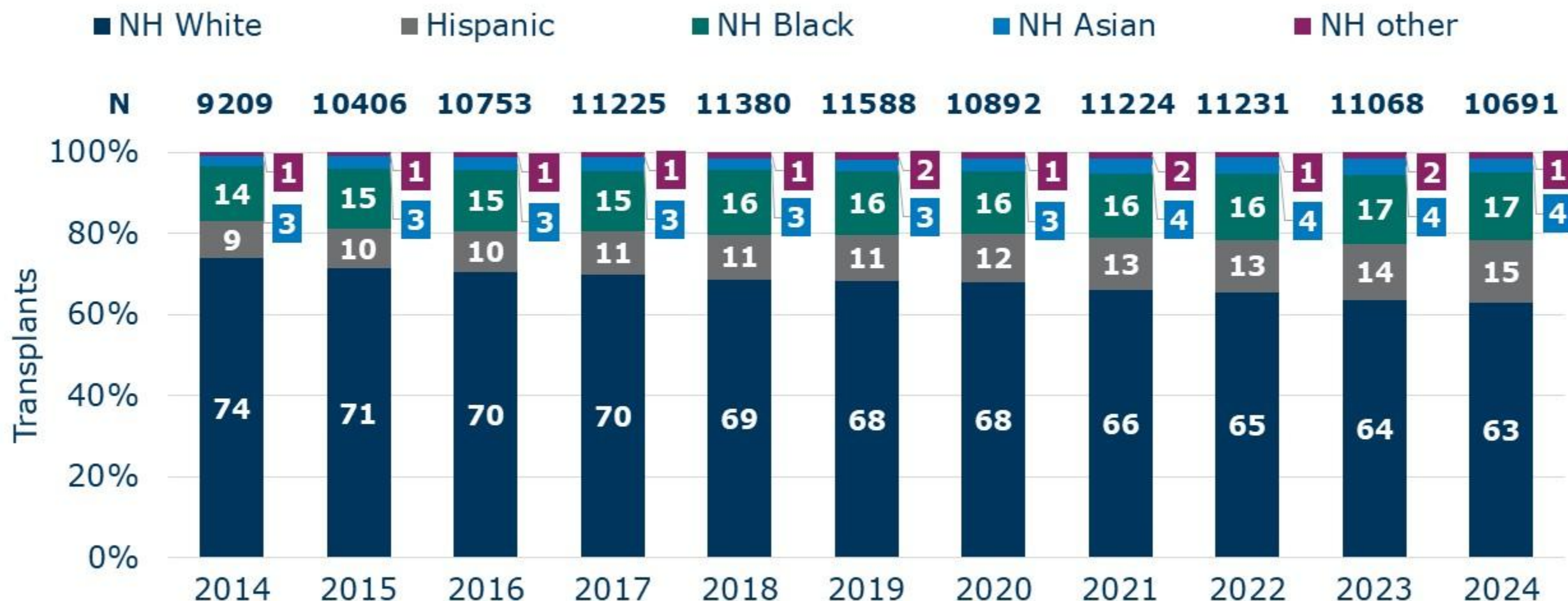
■ NH White ■ Hispanic ■ NH Black or African American ■ NH Asian ■ NH other



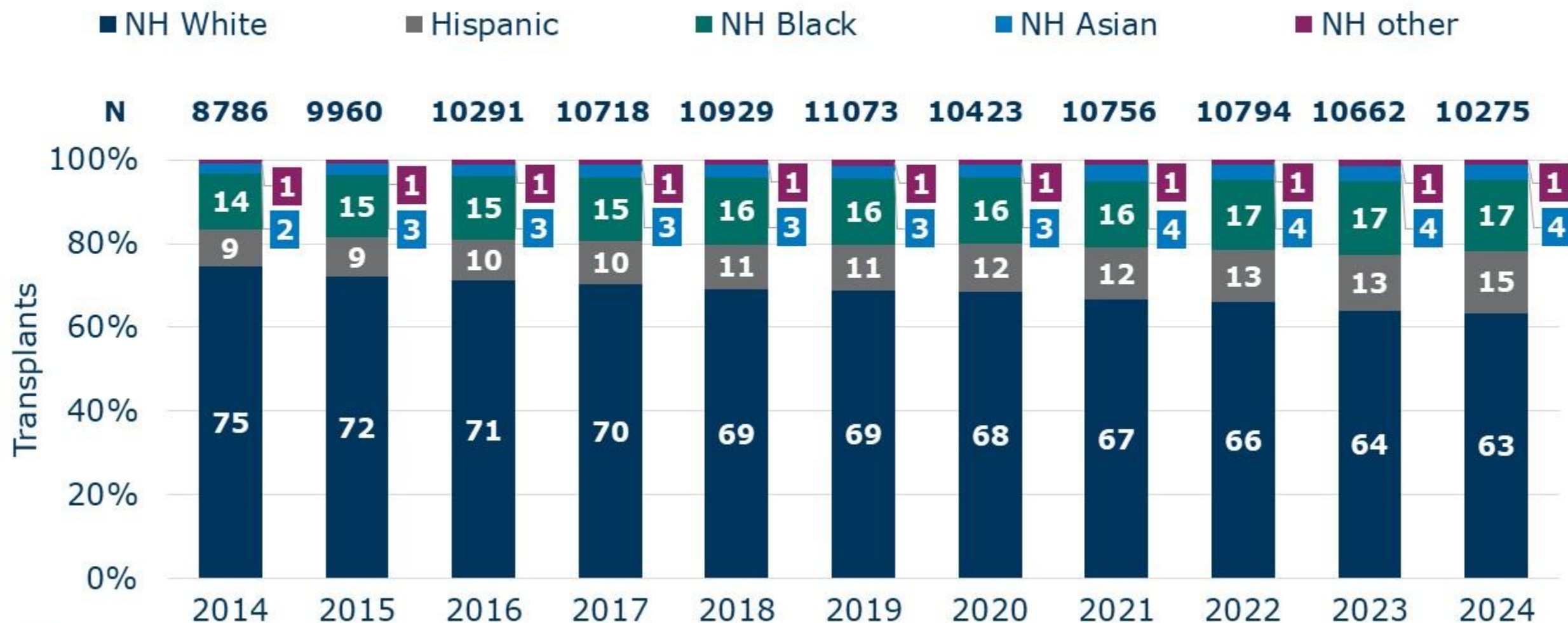
AlloHCTs by race, ethnicity, and donor type, US, 2020-2024



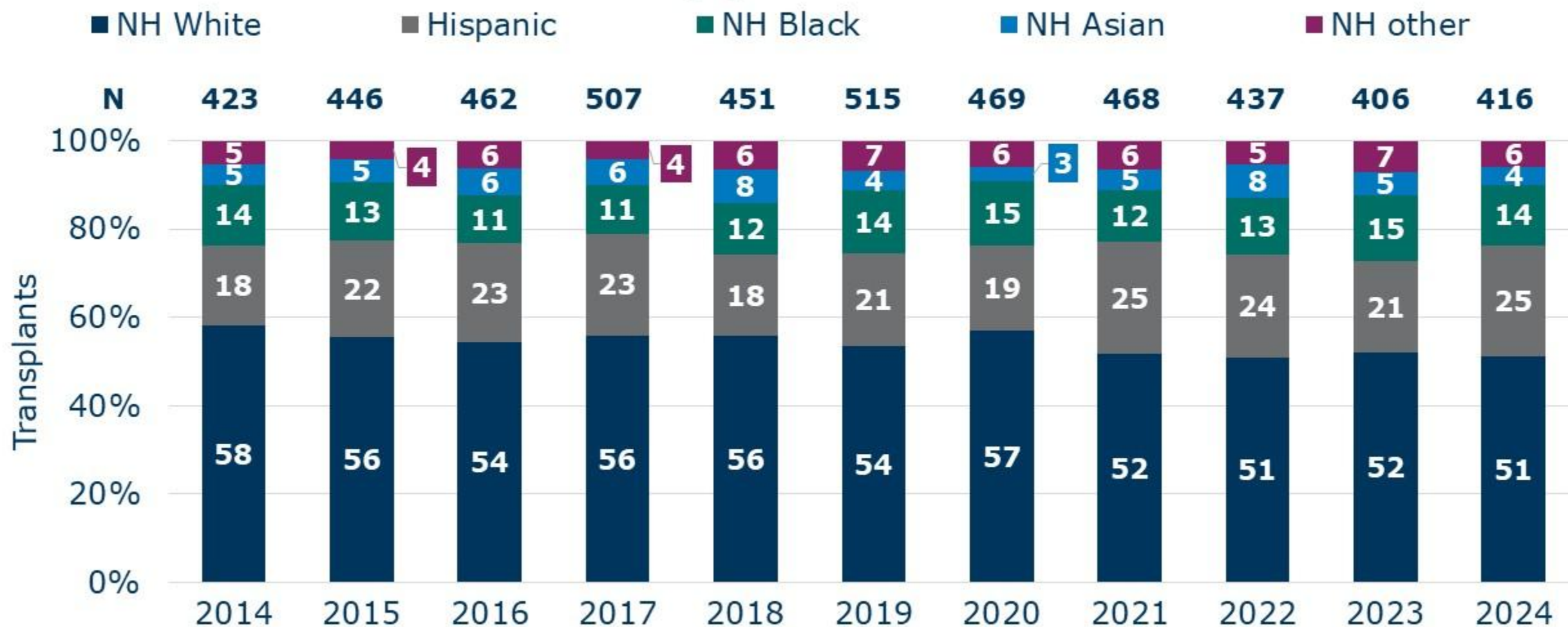
AutoHCTs by race and ethnicity, US, 2014-2024



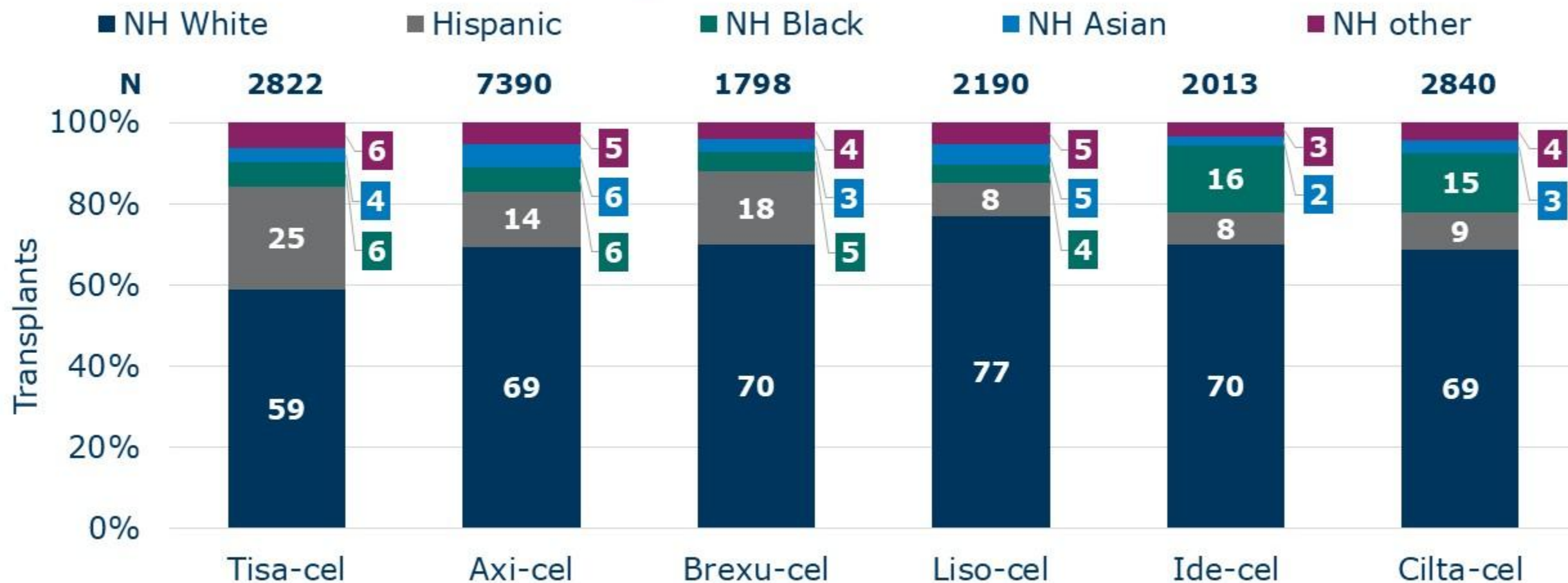
AutoHCTs by race and ethnicity, US, 2014-2024, adults



AutoHCTs by race and ethnicity, US, 2014-2024, pediatrics

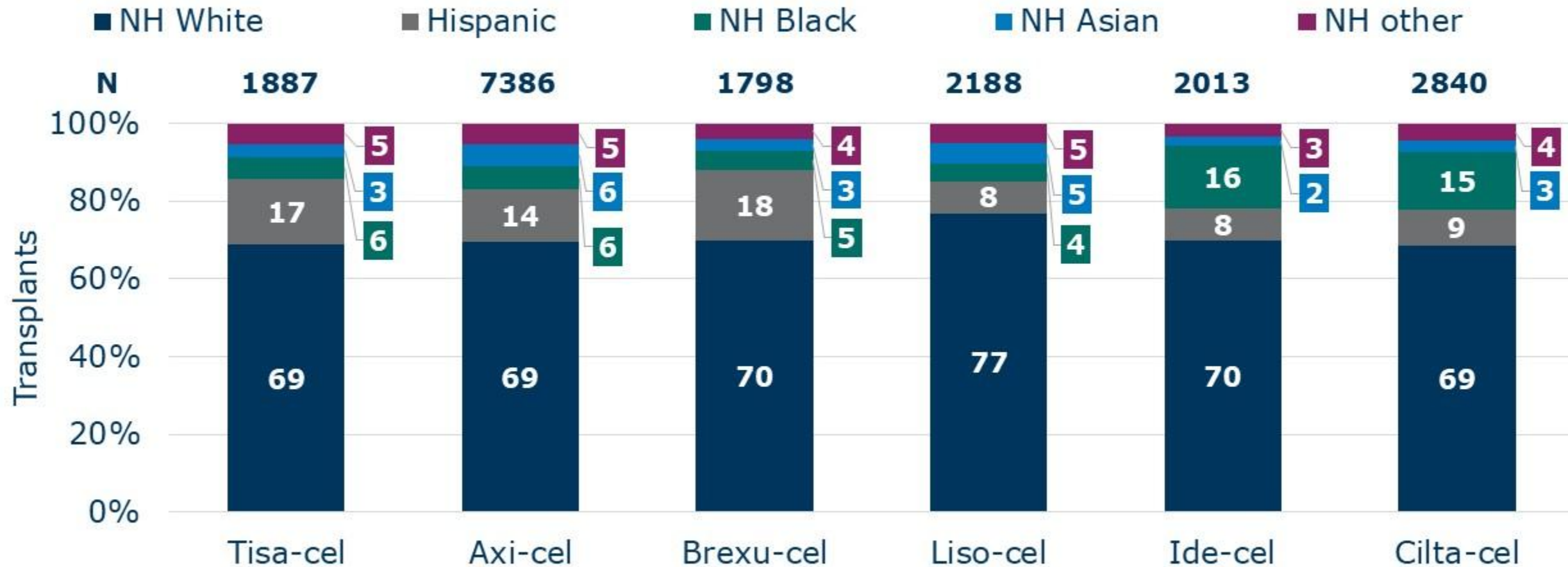


CAR-T infusions by product, race, and ethnicity, US, 2016-2024



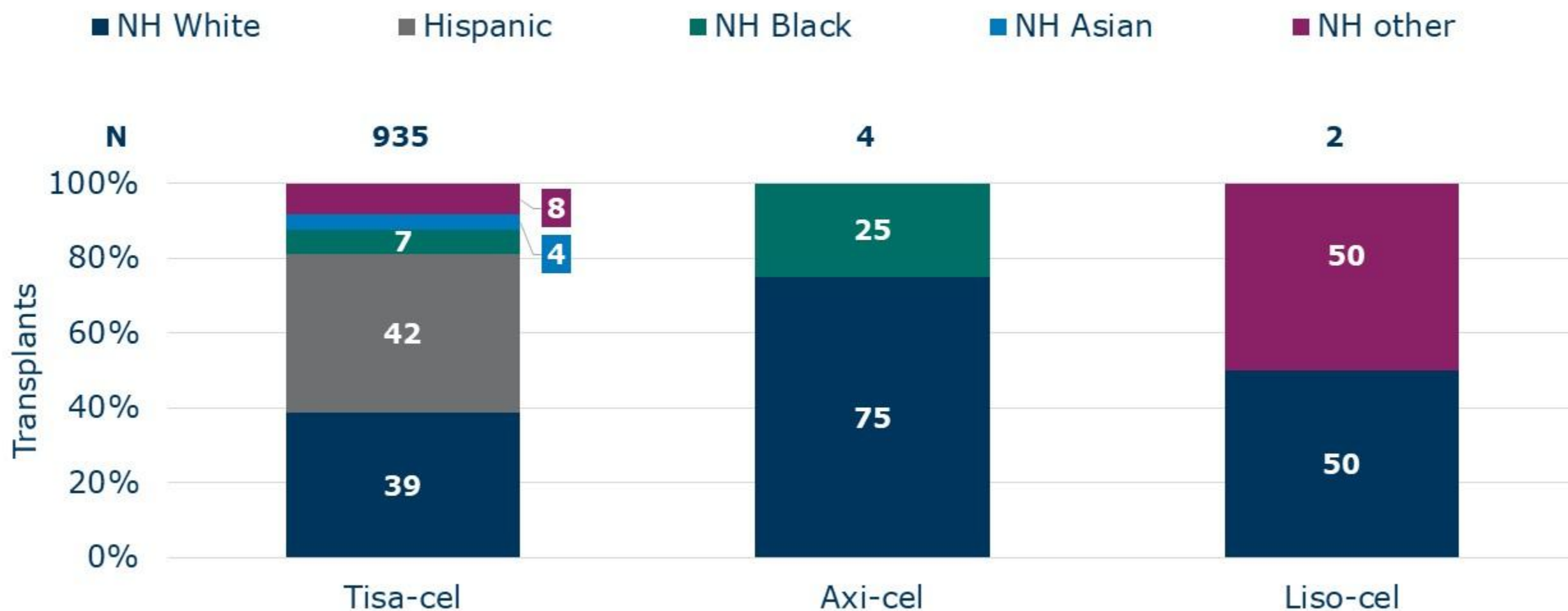
Abbreviations: axi-cel, axicabtagene ciloleucel; brexu-cel, brexucabtagene autoleucel; CAR-T, chimeric antigen receptor T cell therapy; cilta-cel, ciltacabtagene autoleucel; ide-cel, idecabtagene vicleucel; liso-cel, lisocabtagene maraleucel; NH, not Hispanic or Latino; tisa-cel, tisagenlecleucel. Note: Other includes: Native Hawaiian or other Pacific Islander (n=28); American Indian or Alaska Native (n=53); Other (n=100); and not a US resident (n=778).

CAR-T infusions by product, race, and ethnicity, US, adults, 2016-2024

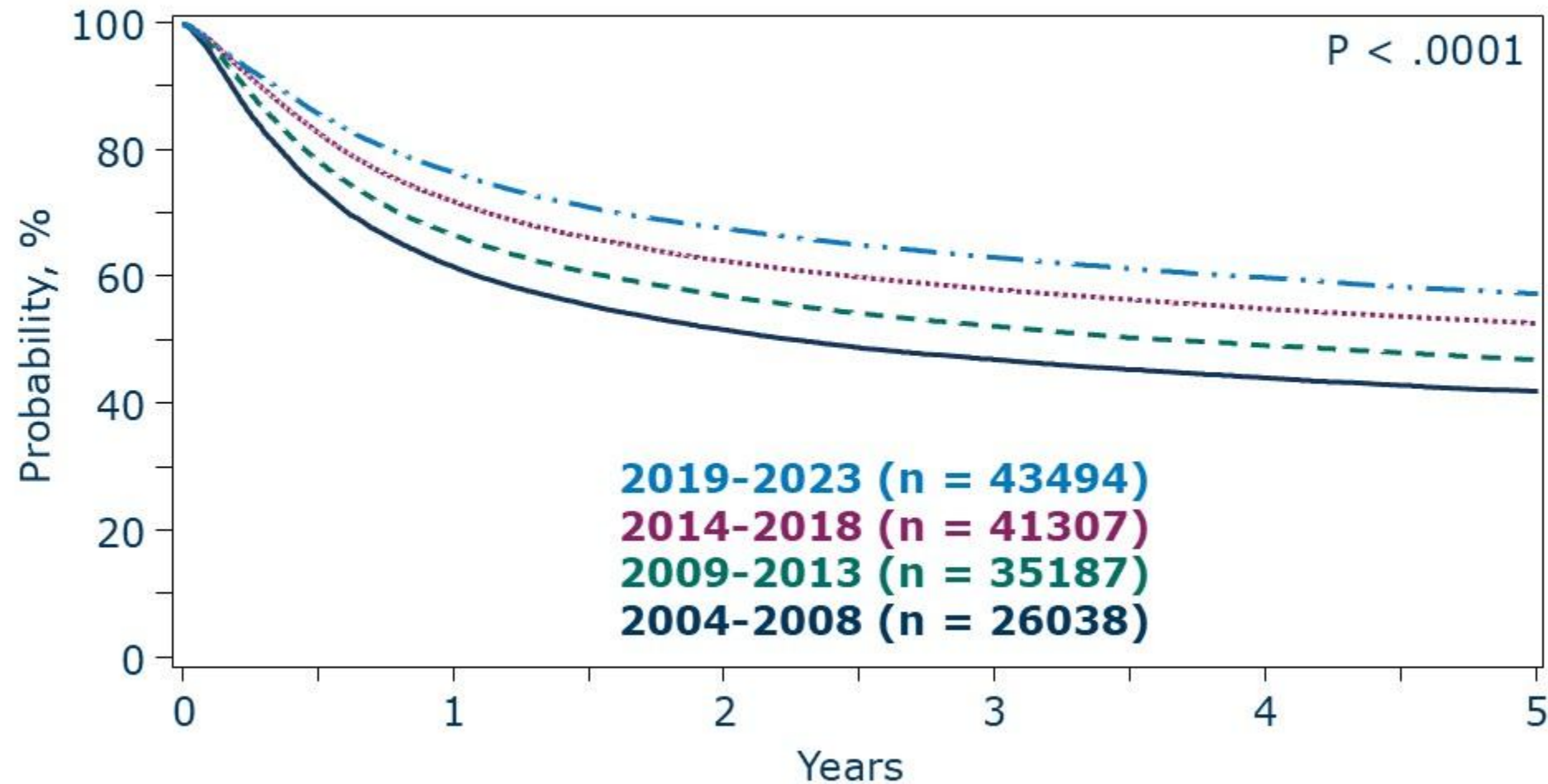


Abbreviations: axi-cel, axicabtagene ciloleucel (Yescarta); brexu-cel, brexucabtagene autoleucel (Tecartus); CAR-T, chimeric antigen receptor T cell therapy; cilta-cel, ciltacabtagene autoleucel (Carvykti); ide-cel, idecabtagene vicleucel (Abecma); liso-cel, lisocabtagene maraleucel (Breyanzi); NH, not Hispanic or Latino; tisa-cel, tisagenlecleucel (Kymriah). Note: Other includes: Native Hawaiian or other Pacific Islander (n=26); American Indian or Alaska Native (n=51); Other (n=78); and not a US resident (n=724).

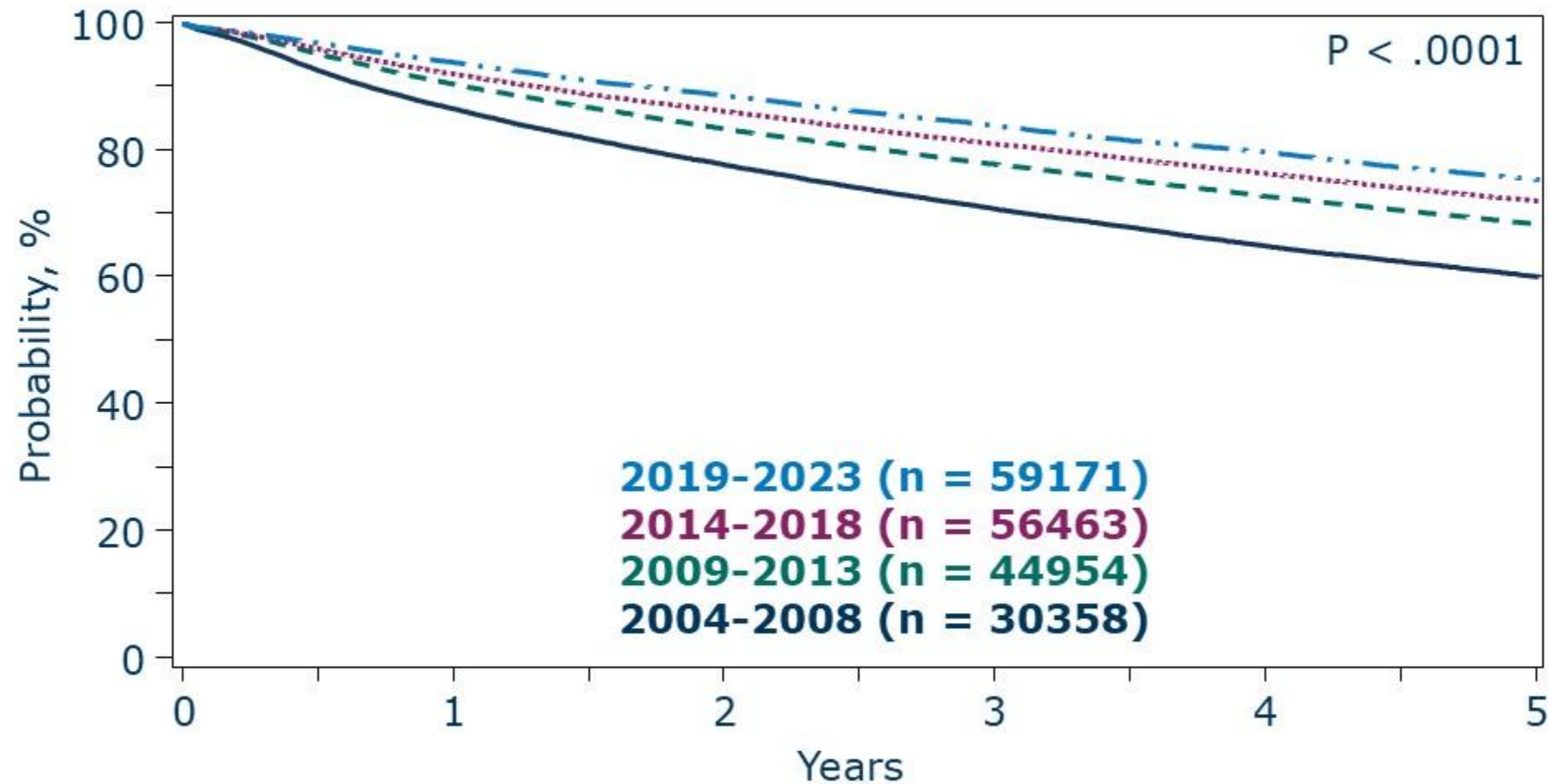
CAR-T infusions by product, race, and ethnicity, US, pediatrics 2016-2024



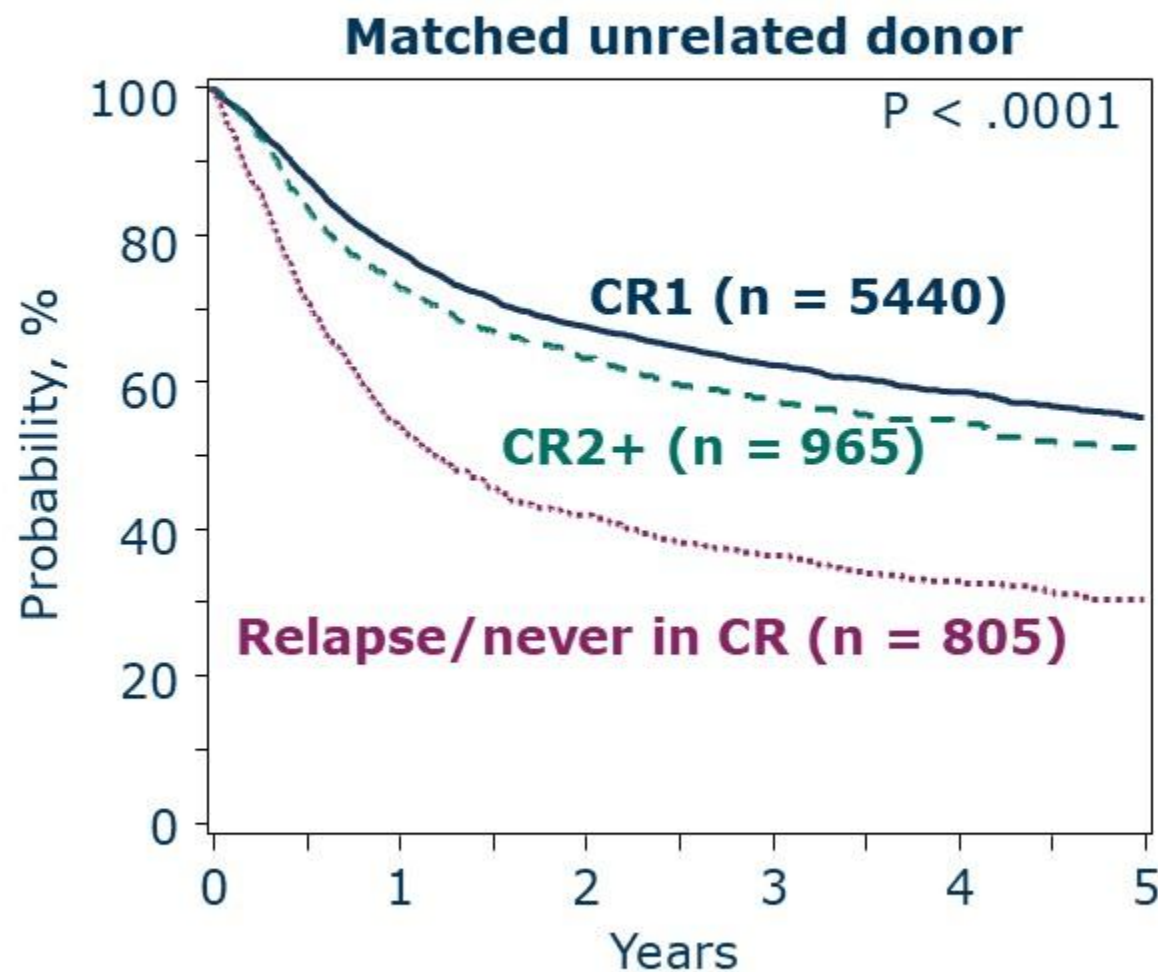
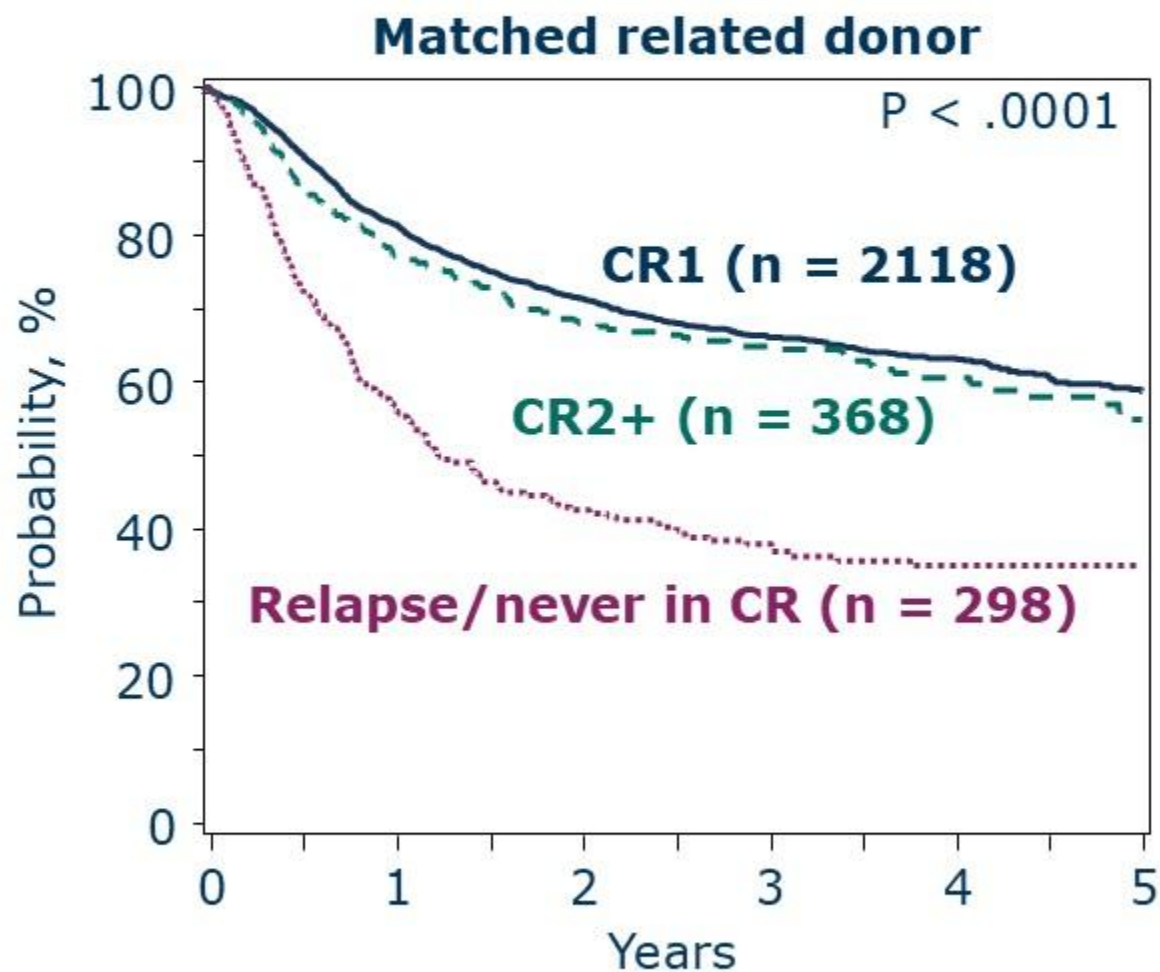
Trends in survival after alloHCT, US, 2004-2023



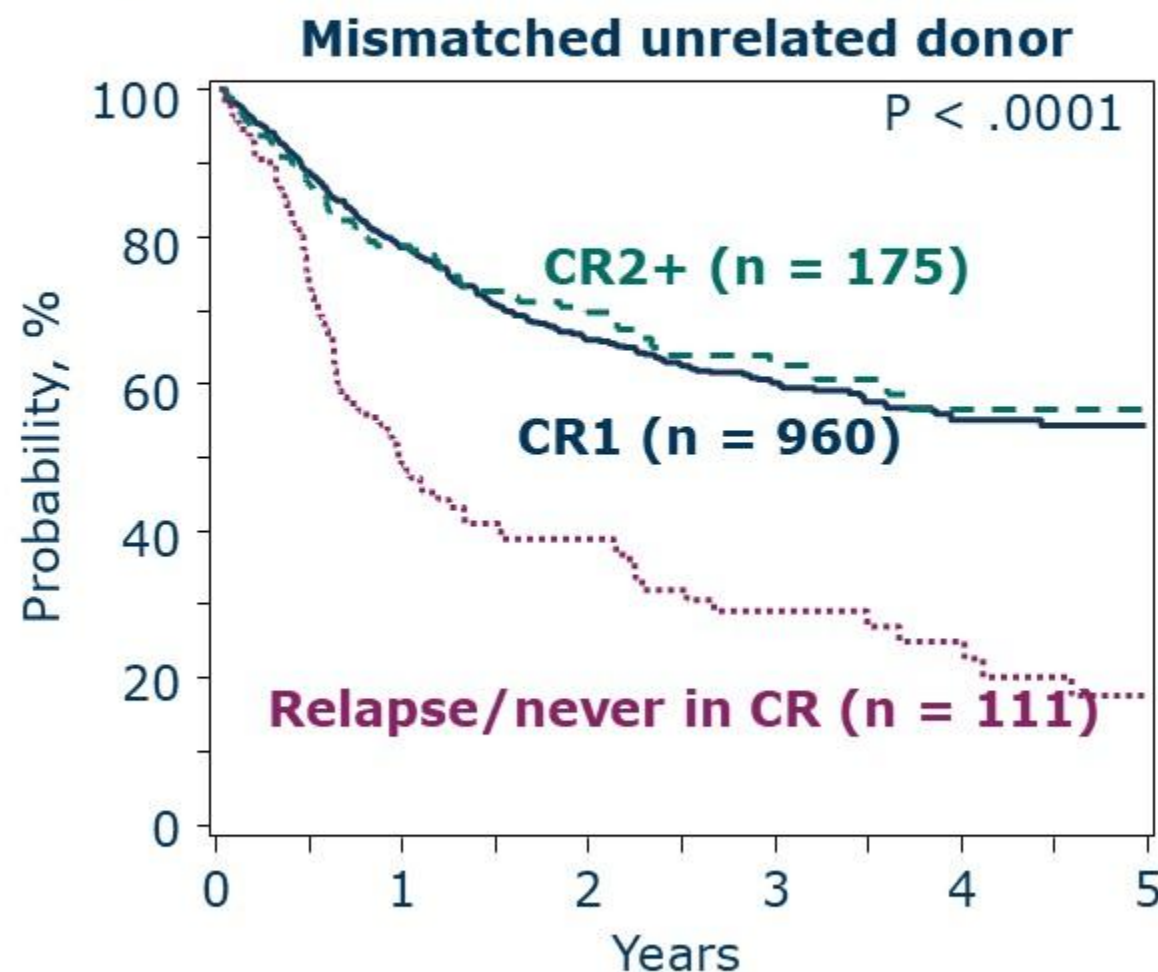
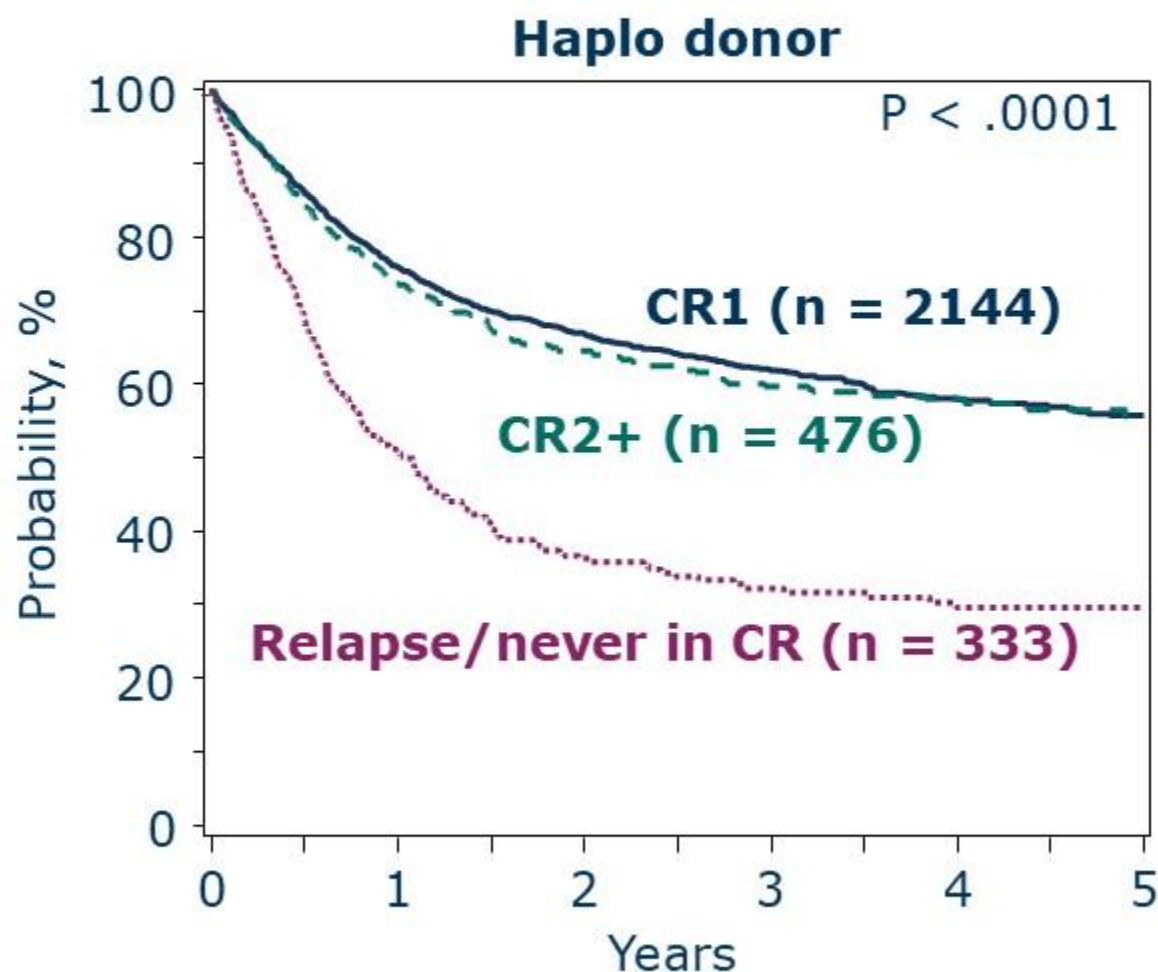
Trends in survival after autoHCT, US, 2004-2023



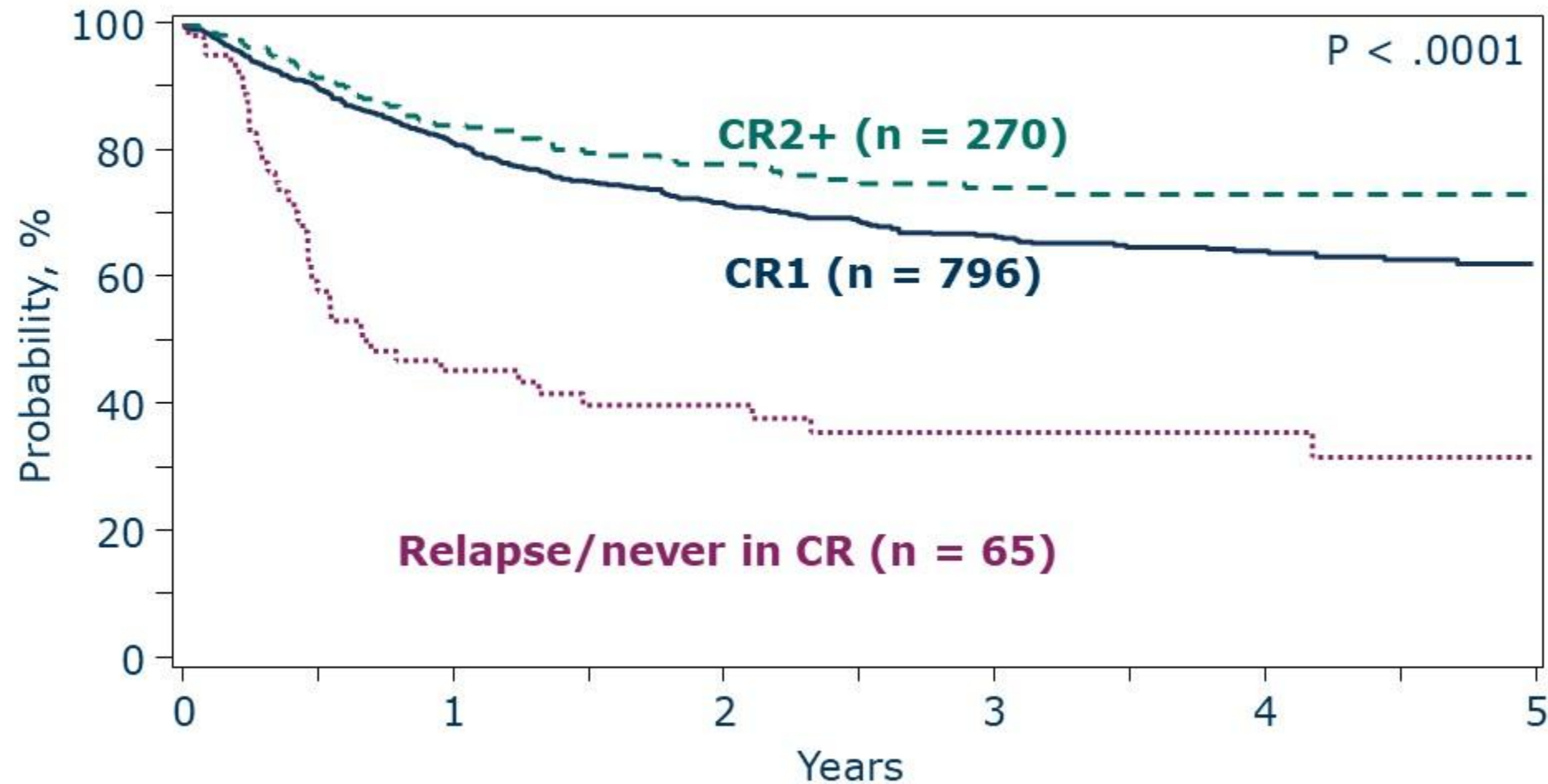
Survival, alloHCT for AML, using matched donors, US, 2019-2023, adults



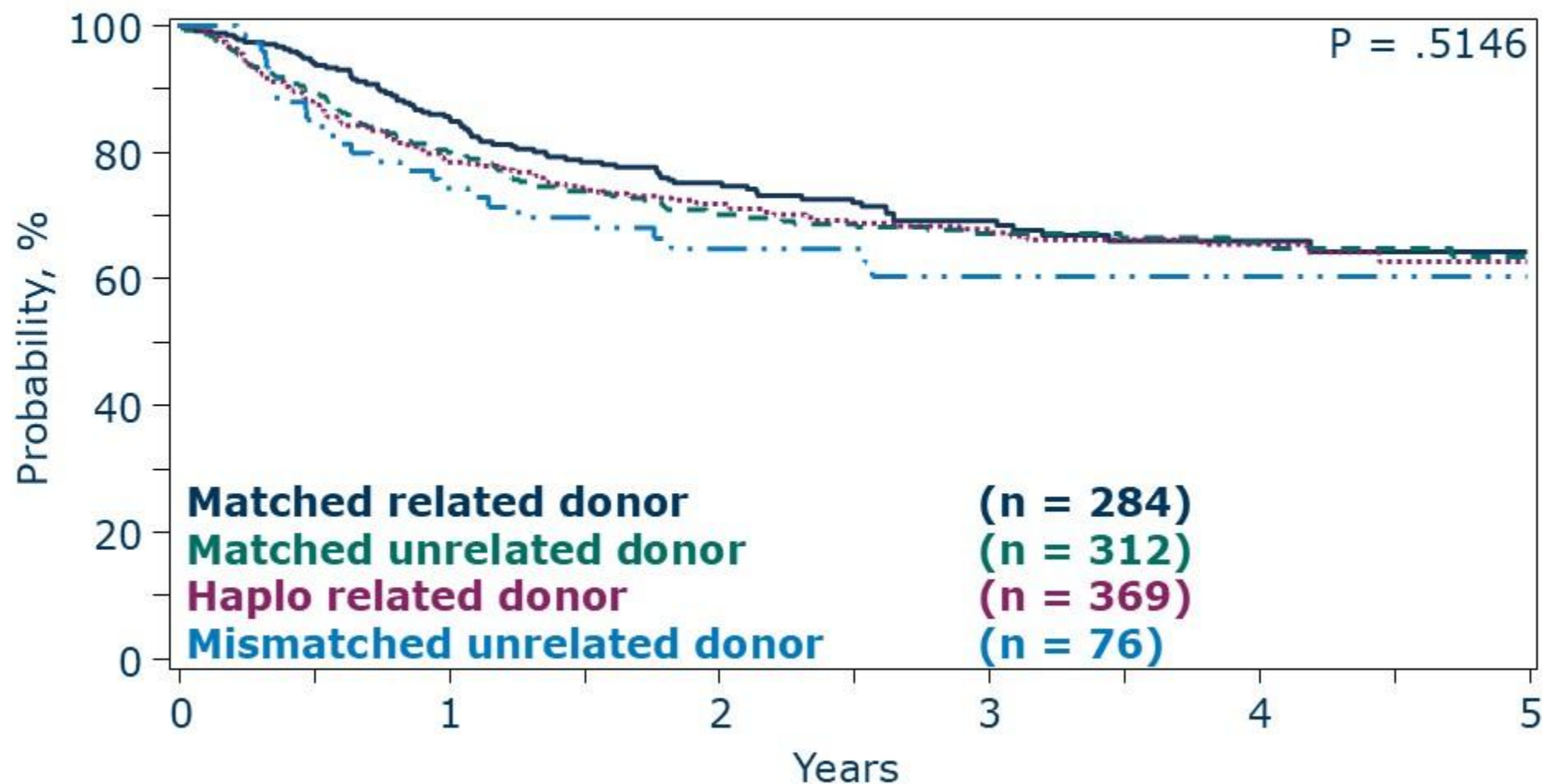
Survival, alloHCT for AML, using mismatched donors, US, 2019-2023, adults



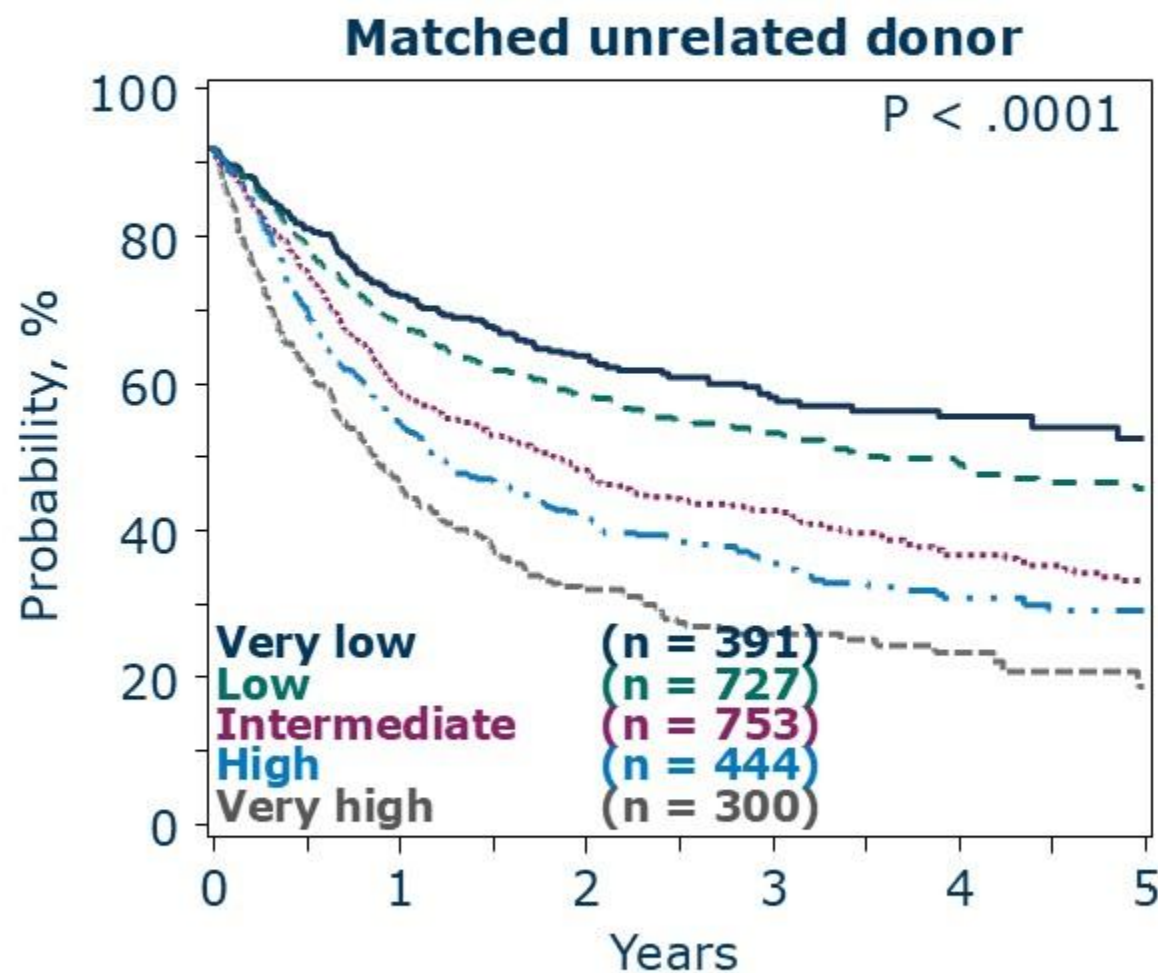
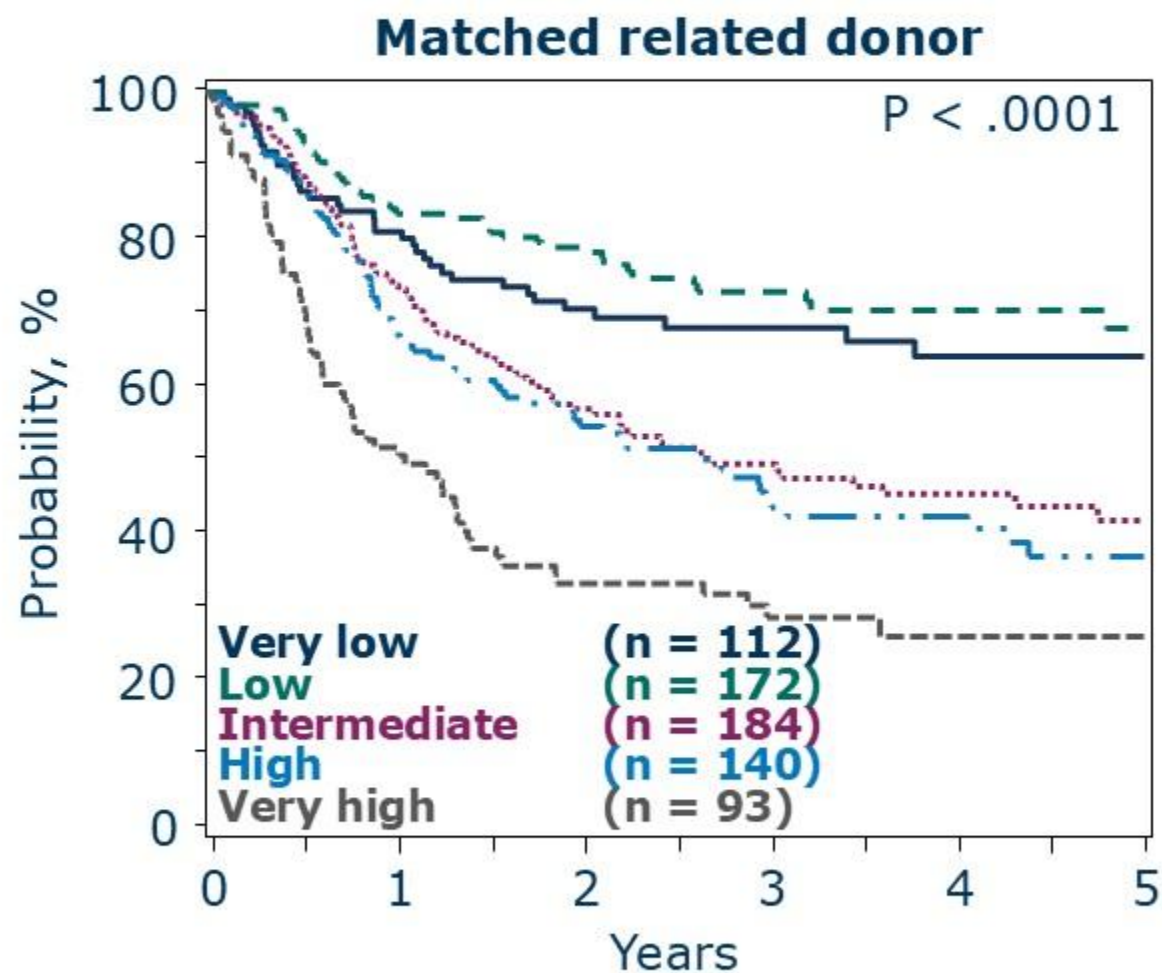
Survival, alloHCT for AML, US, 2019-2023, pediatrics



Survival, alloHCT for AML, US, 2019-2023, pediatrics, by donor type

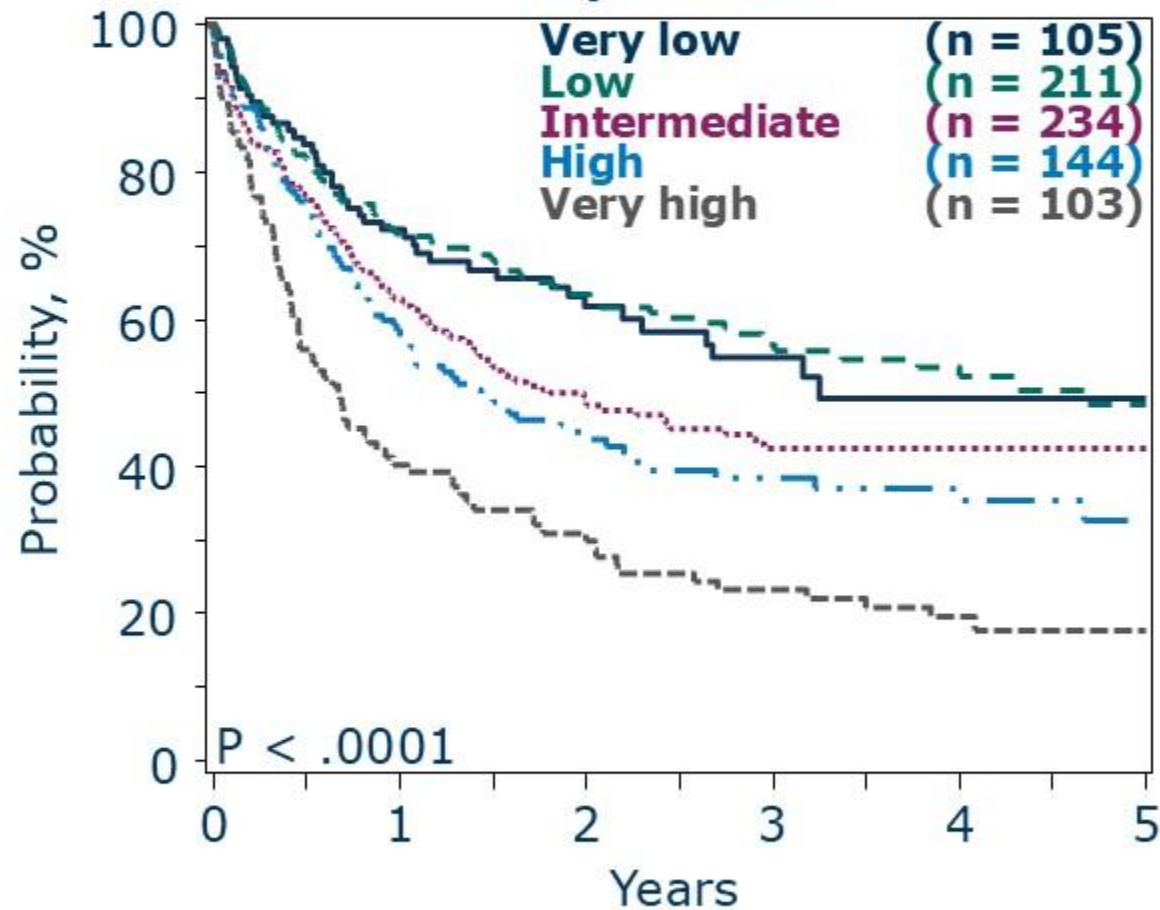


Survival, alloHCT for MDS, using matched donors, US, 2019-2023, adults, by IPSS-R

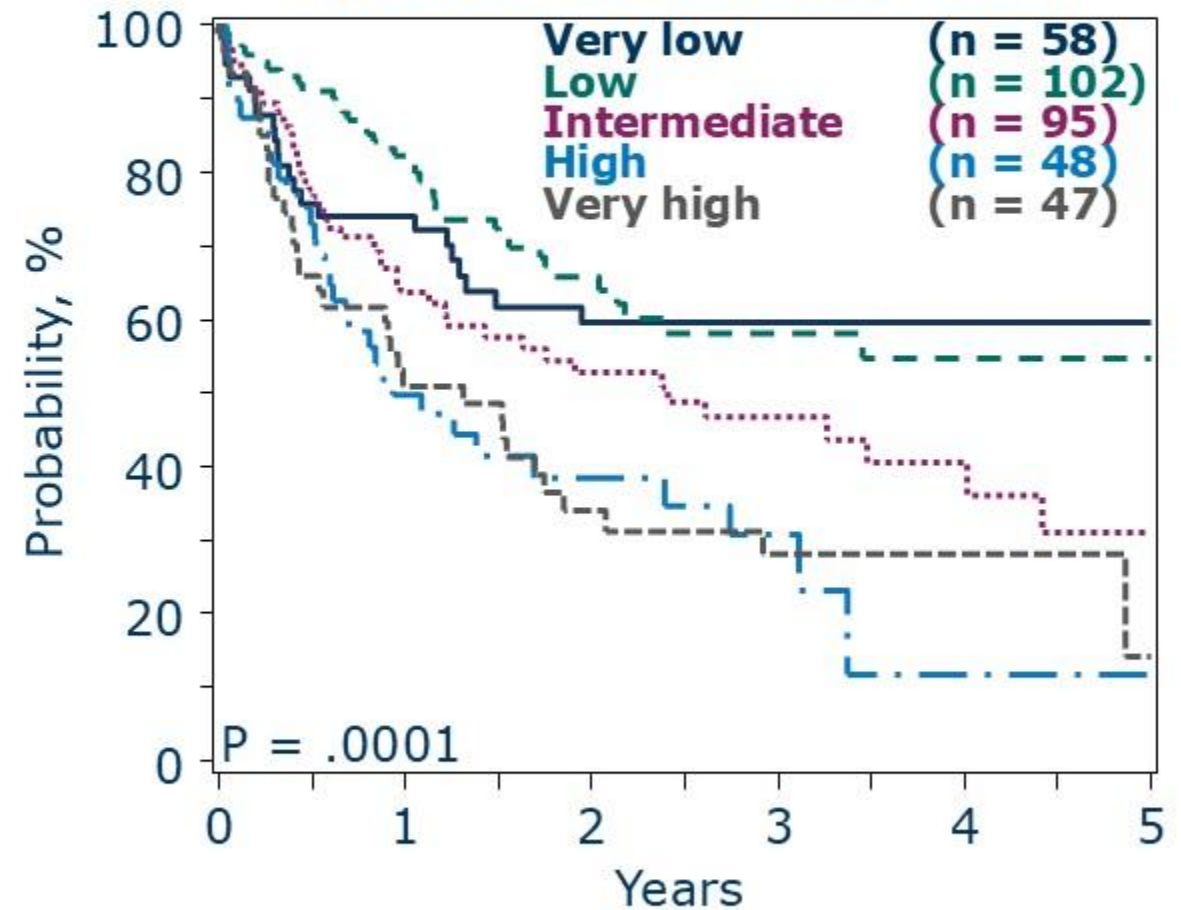


Survival, alloHCT for MDS, using mismatched donors, US, 2019-2023, adults, by IPSS-R

Haplo donor

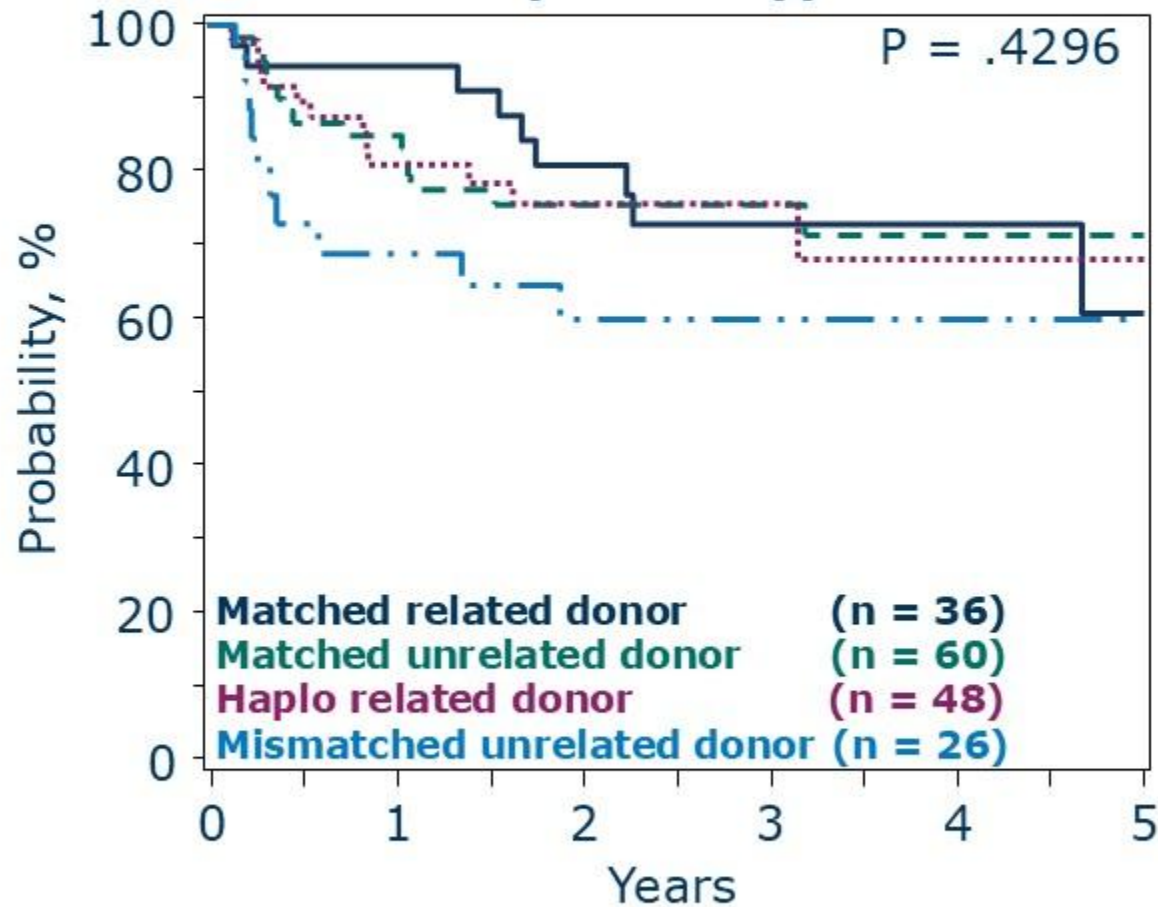


Mismatched unrelated donor

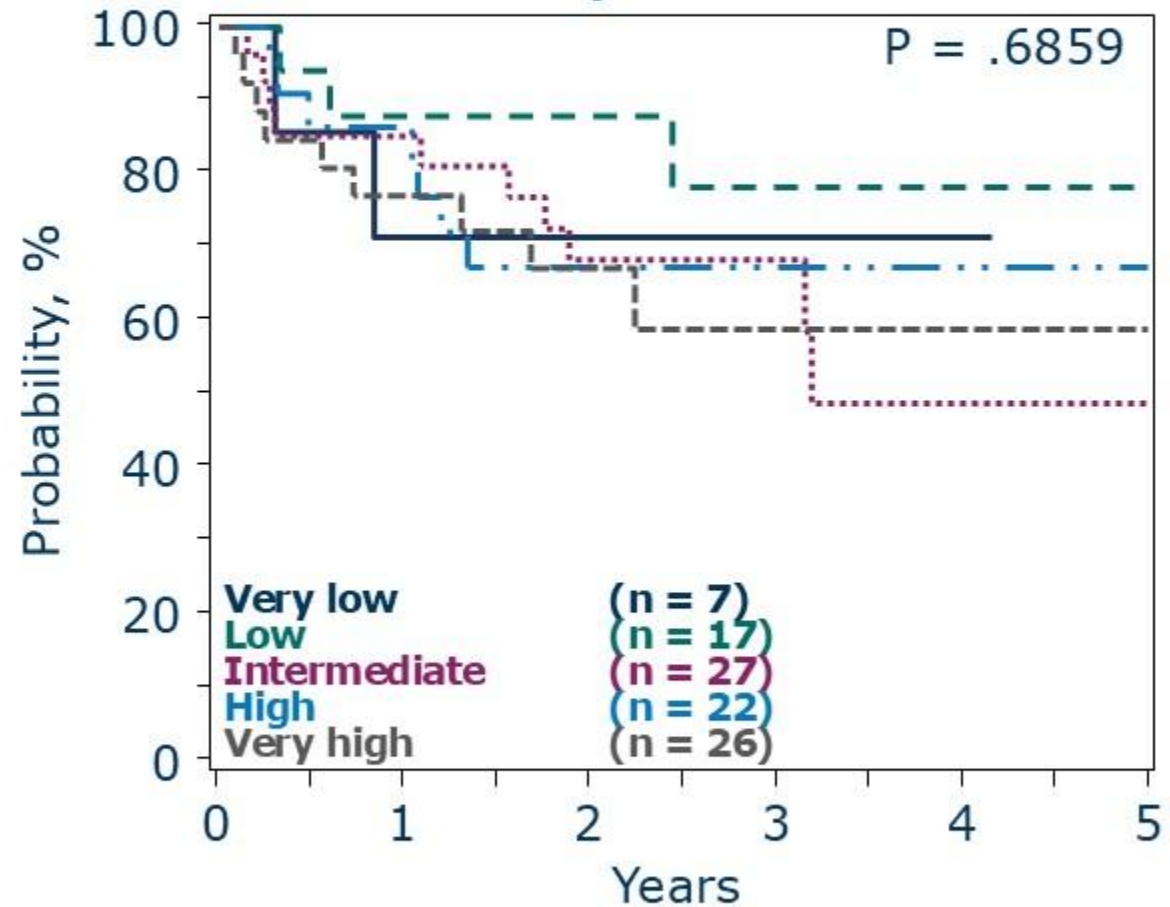


Survival after alloHCT for MDS, US, 2019-2023, pediatrics

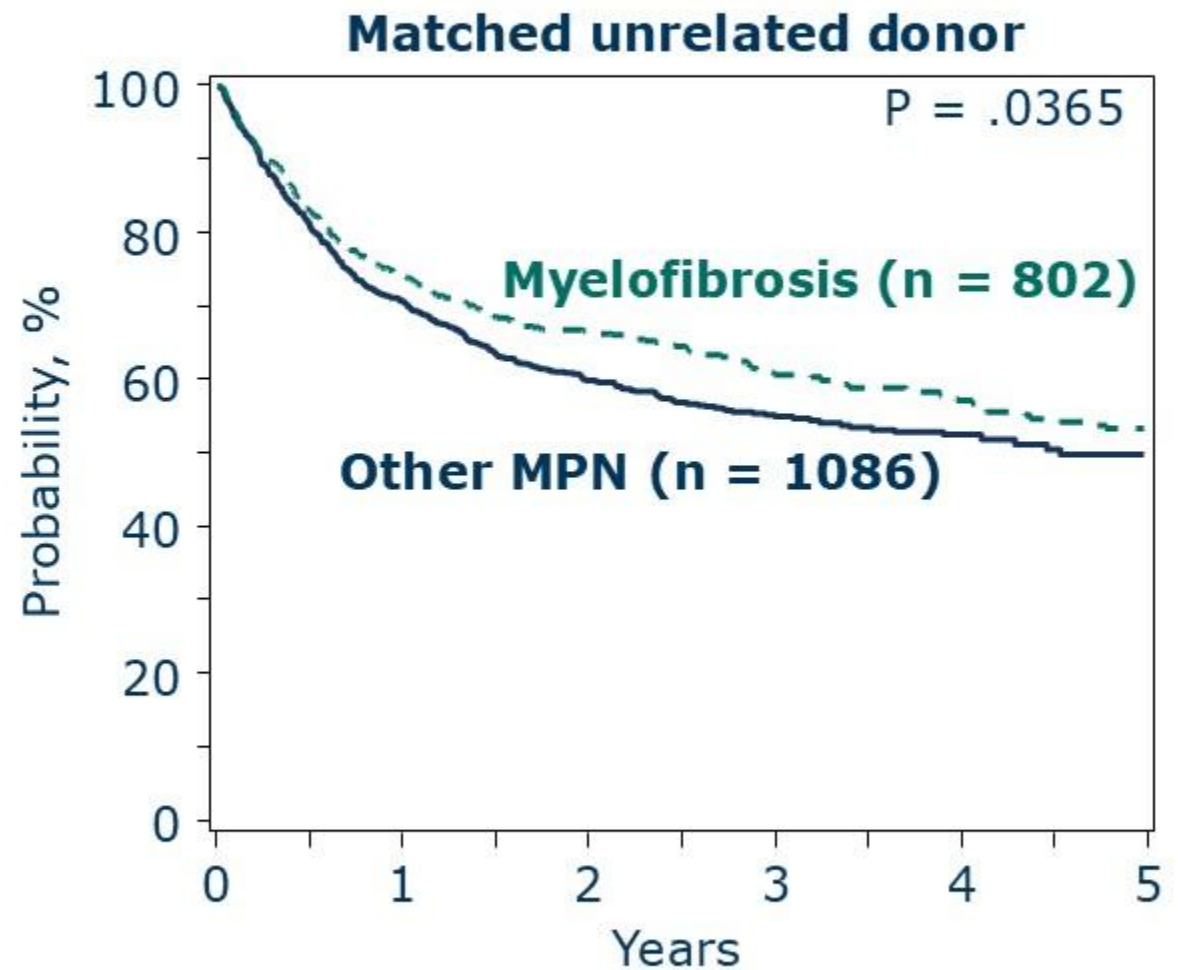
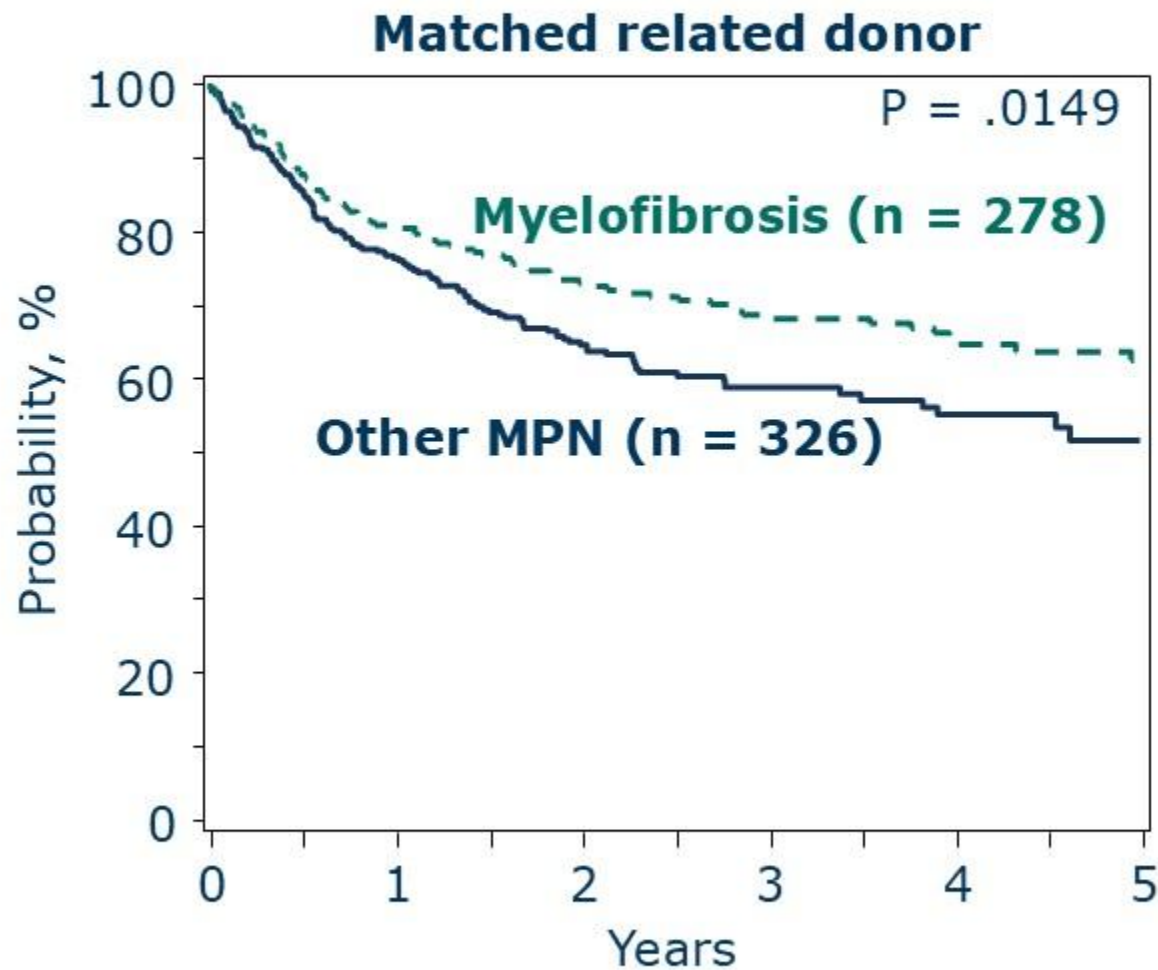
By donor type



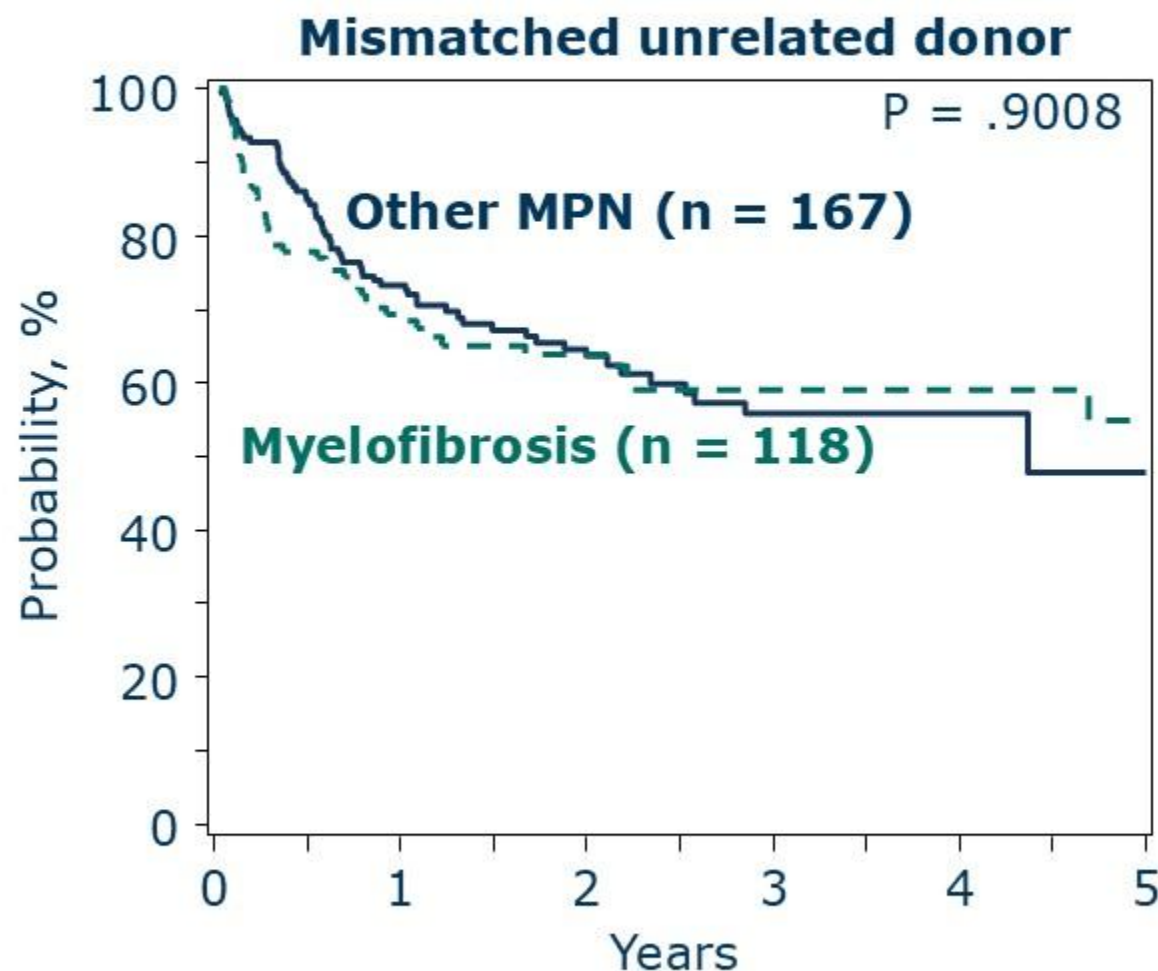
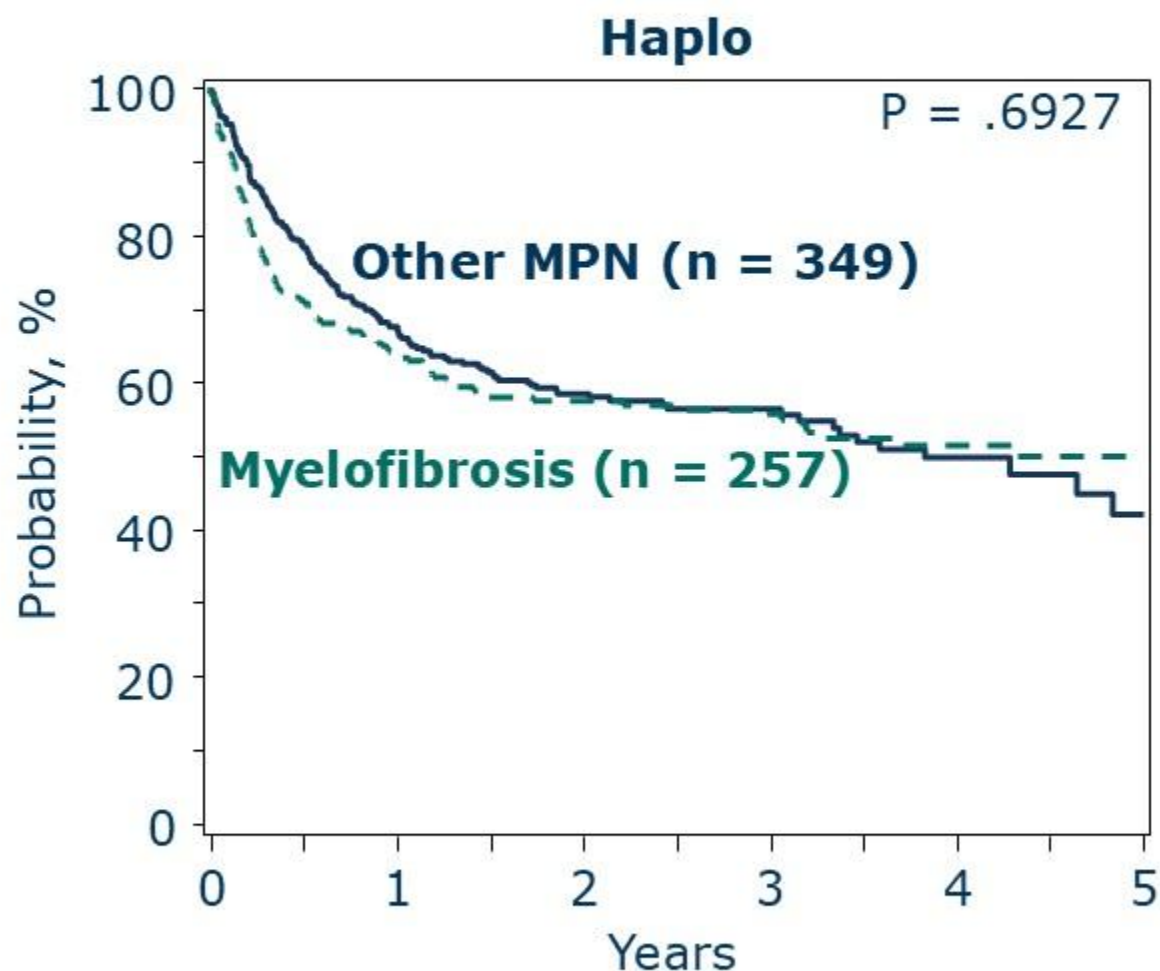
By IPSS-R



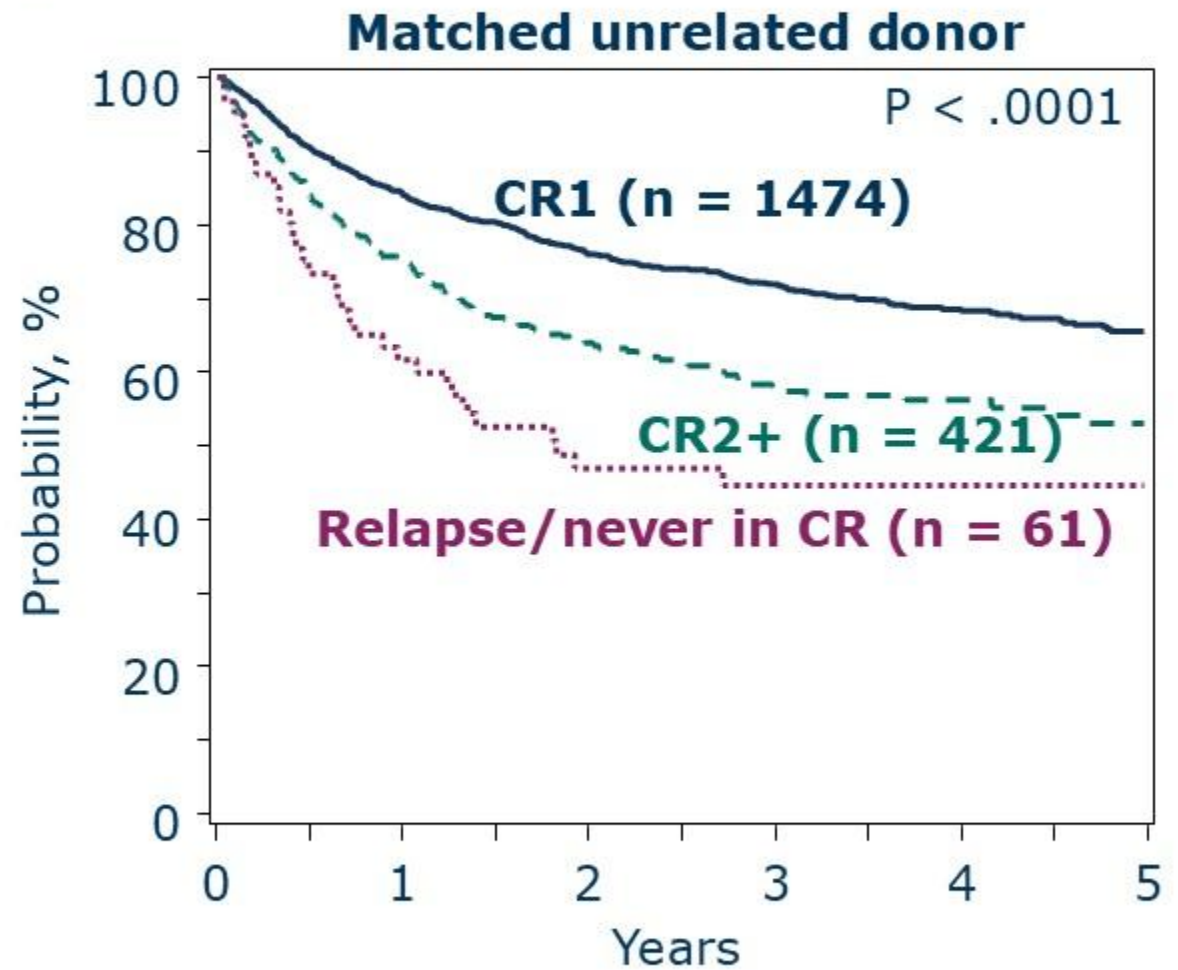
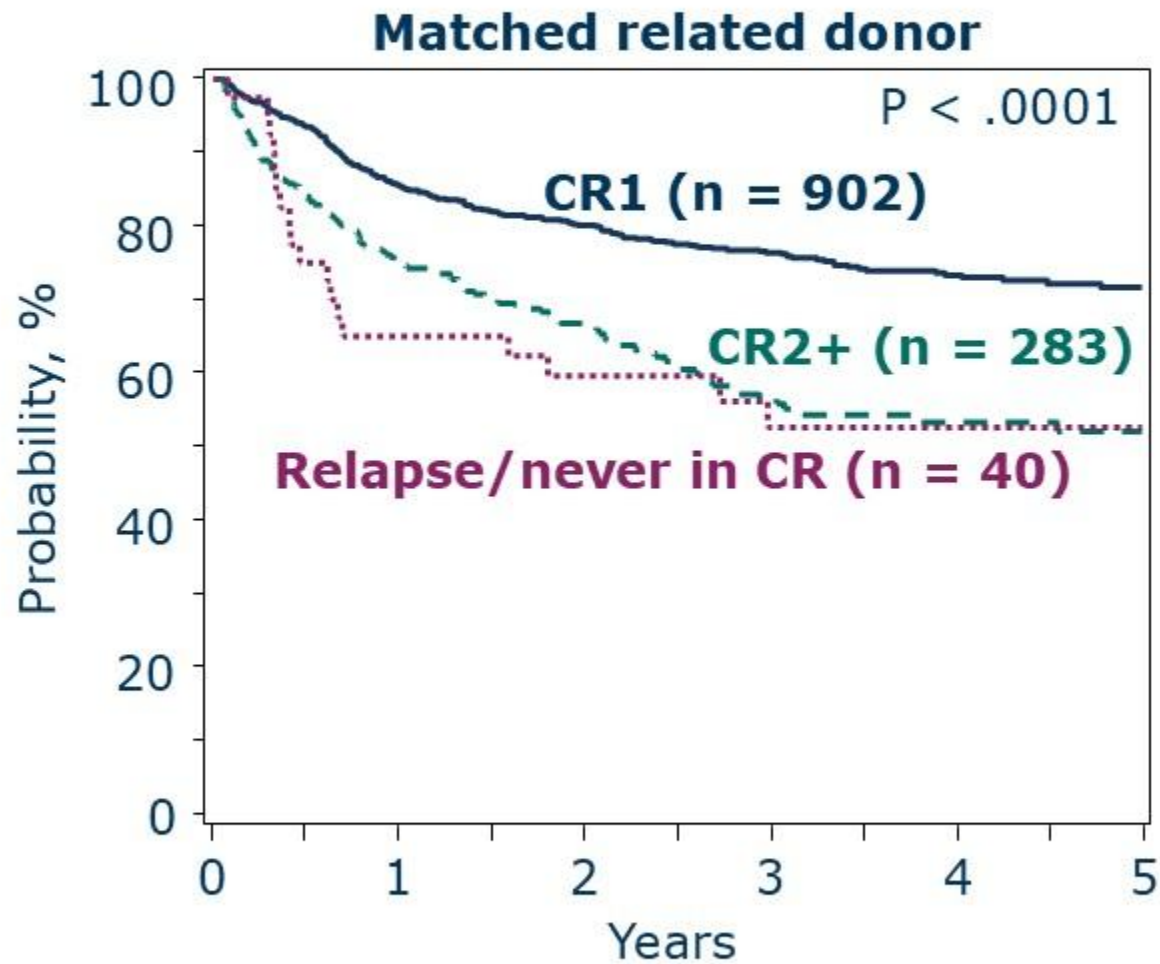
Survival, alloHCT for MPN, using matched donors, US, 2019-2023, adults



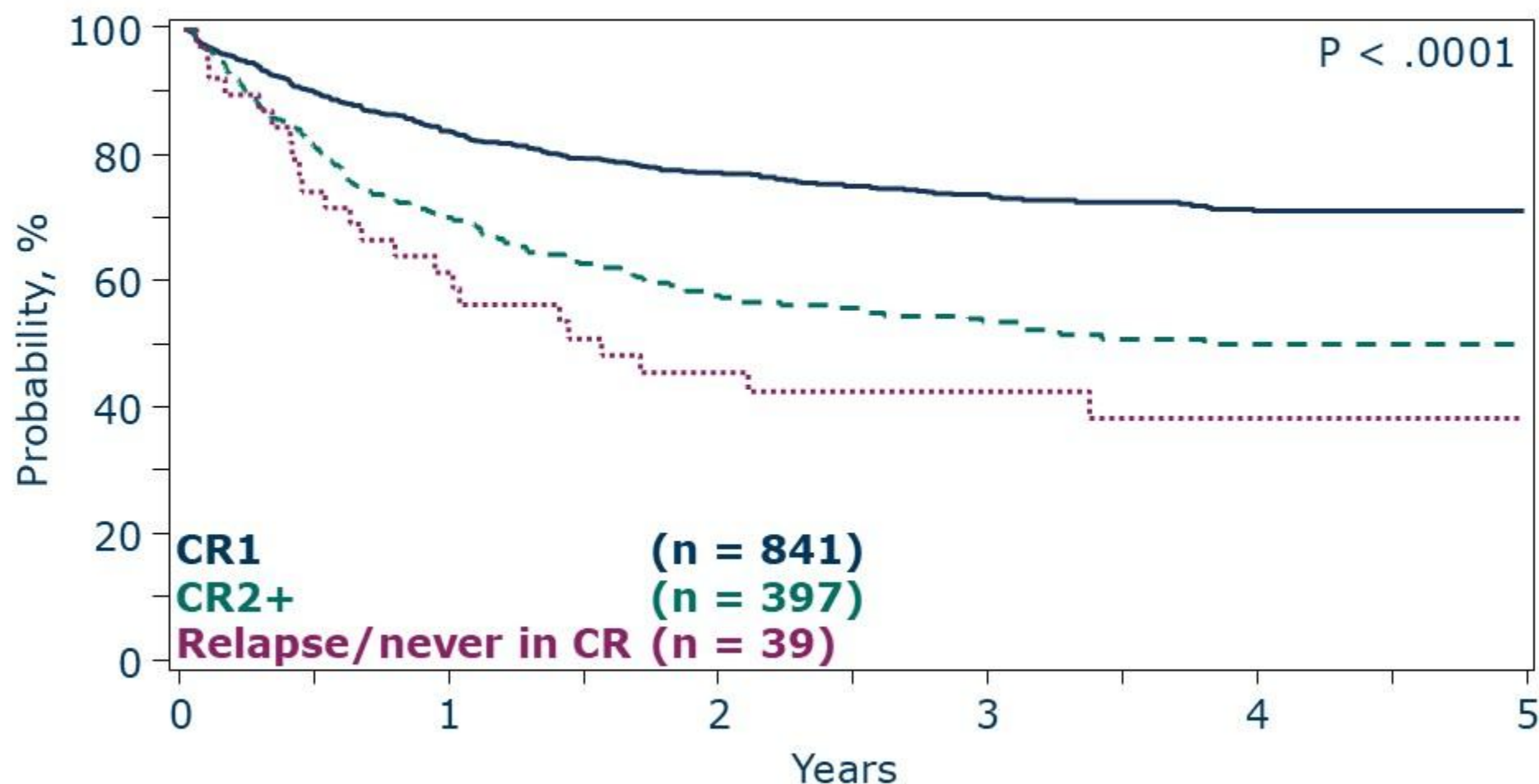
Survival, alloHCT for MPN, using mismatched donors, US, 2019-2023, adults



Survival, alloHCT for ALL, using matched donors, US, 2019-2023, adults

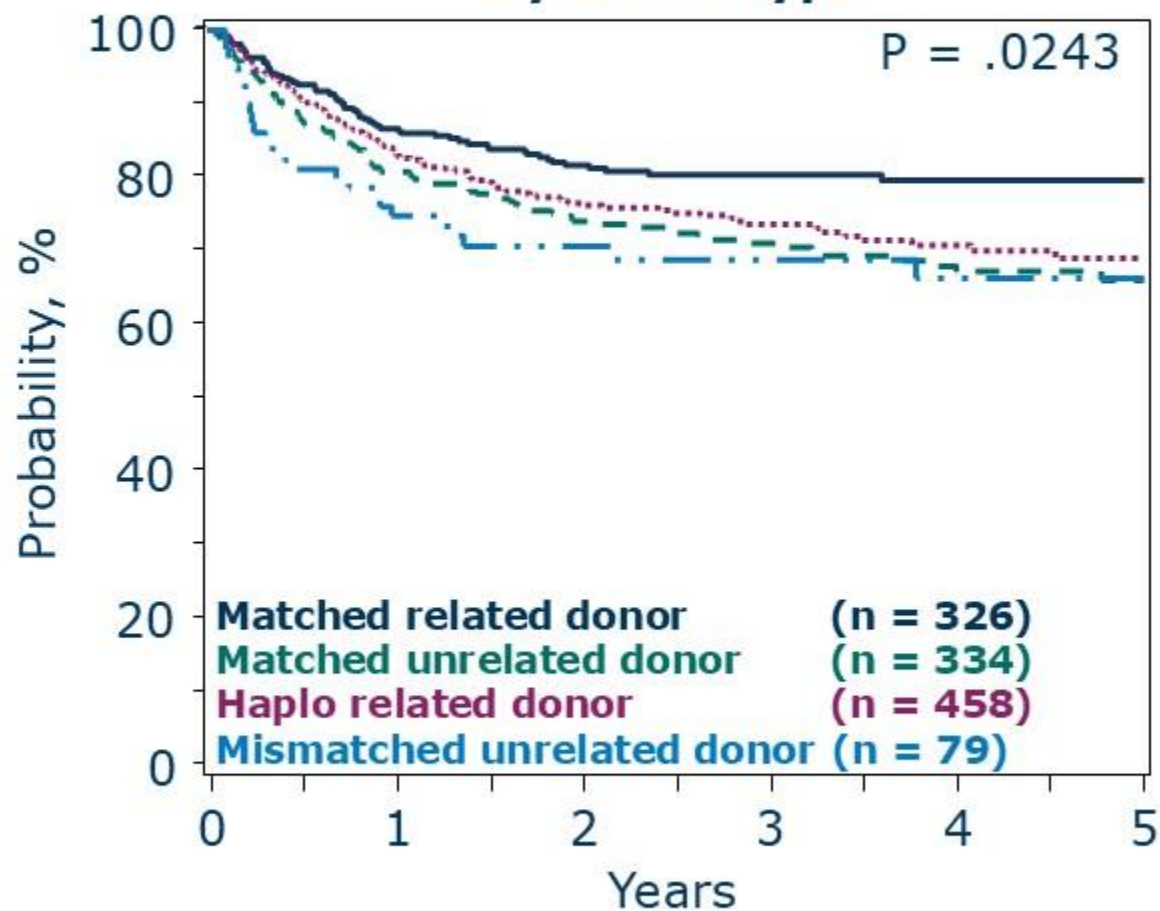


Survival after alloHCT for ALL, using haplo donors, US, 2019-2023, adults

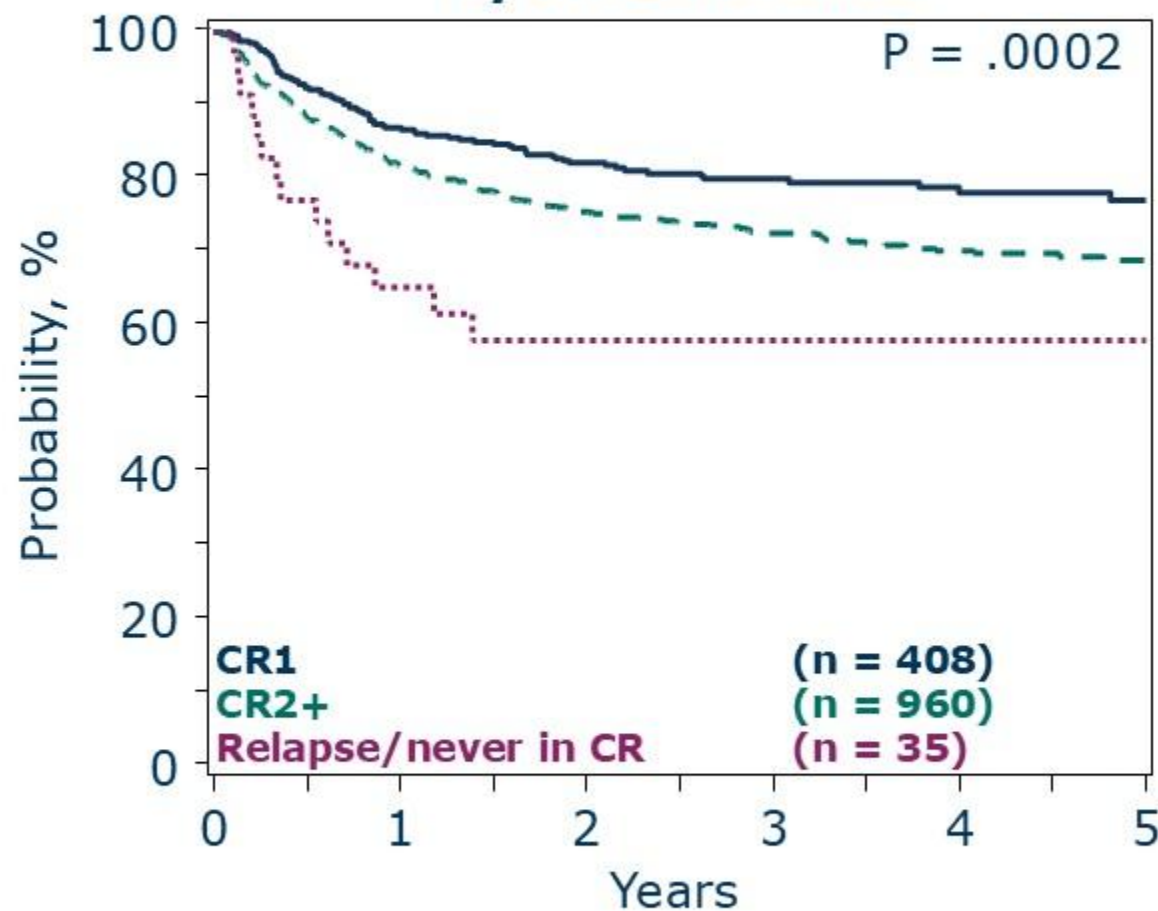


Survival after alloHCT for ALL, US, 2019-2023, pediatrics

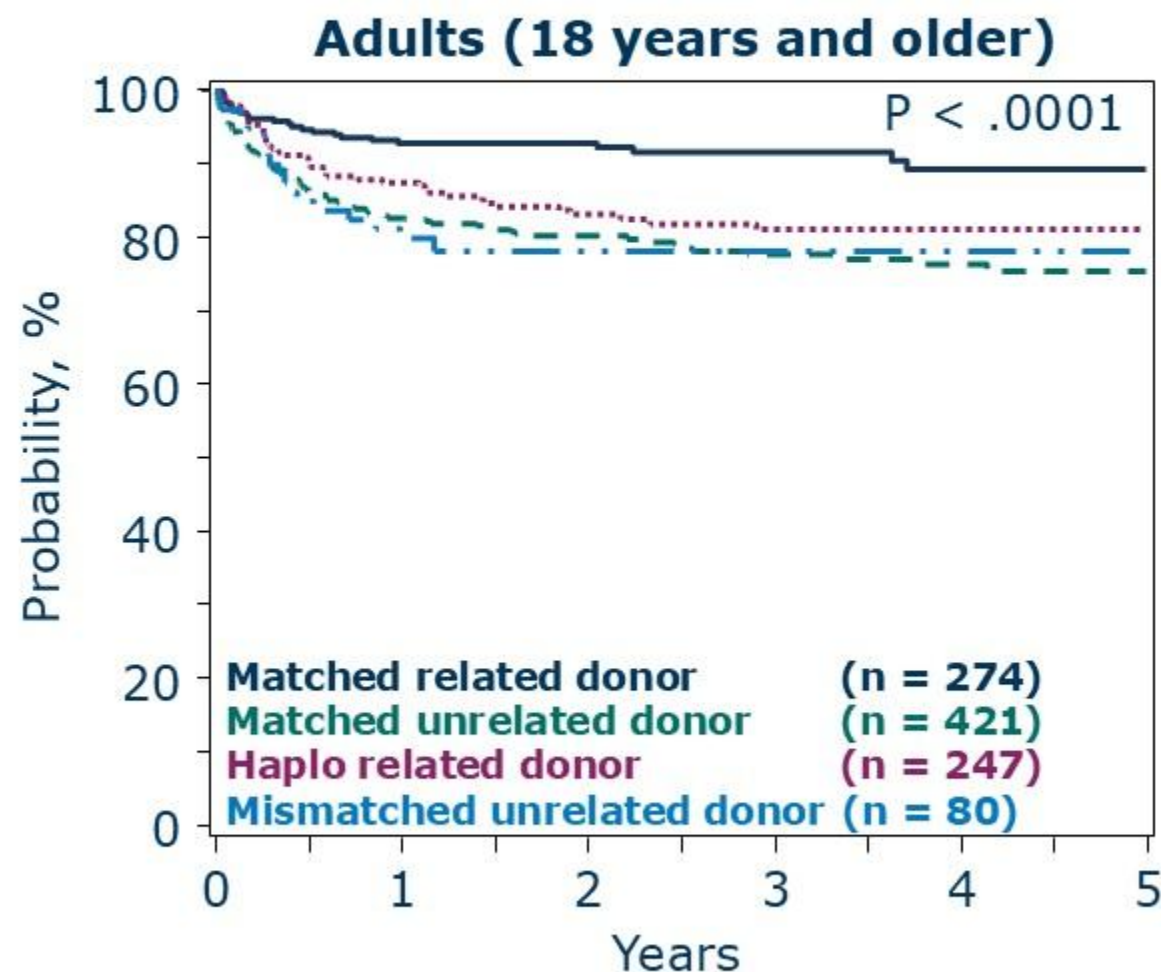
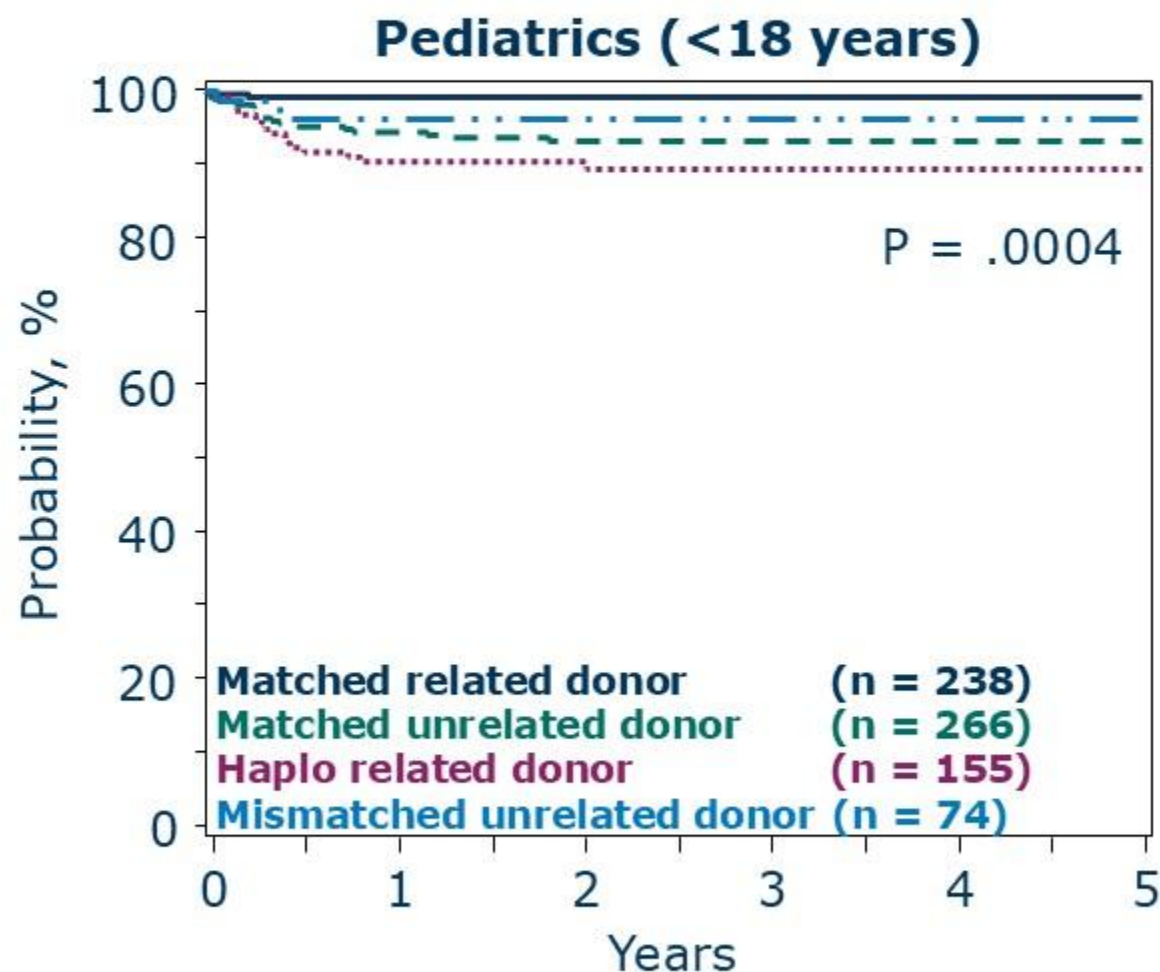
By donor type



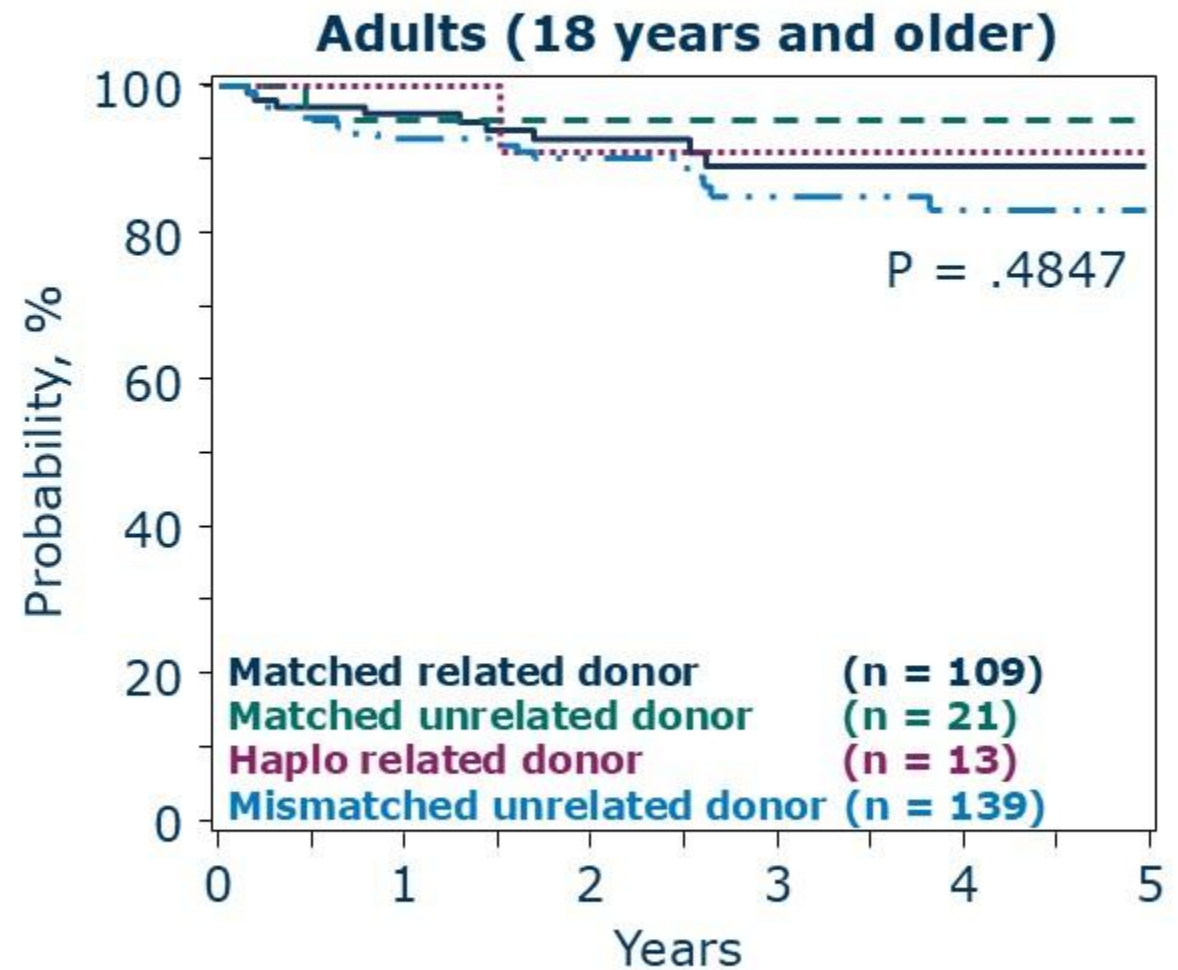
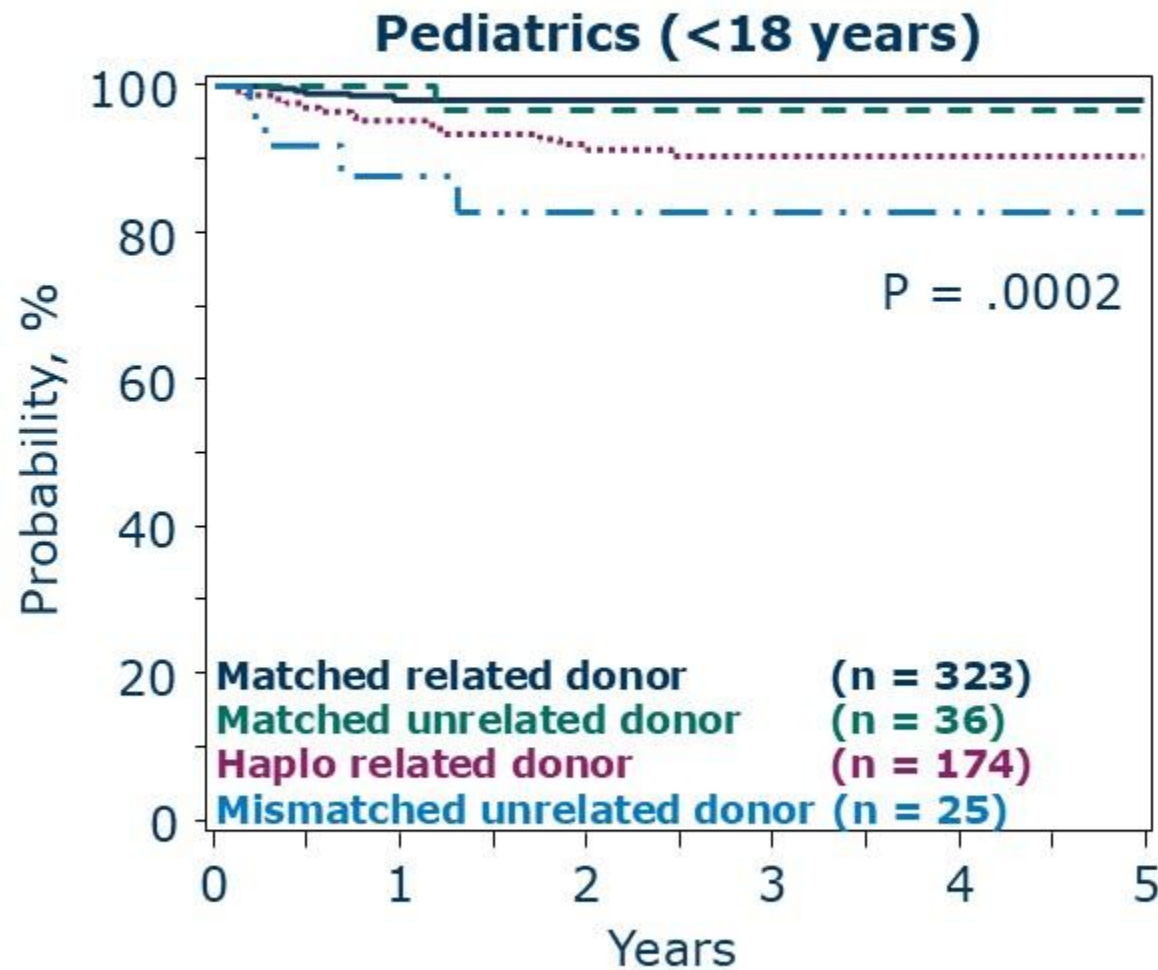
By disease status



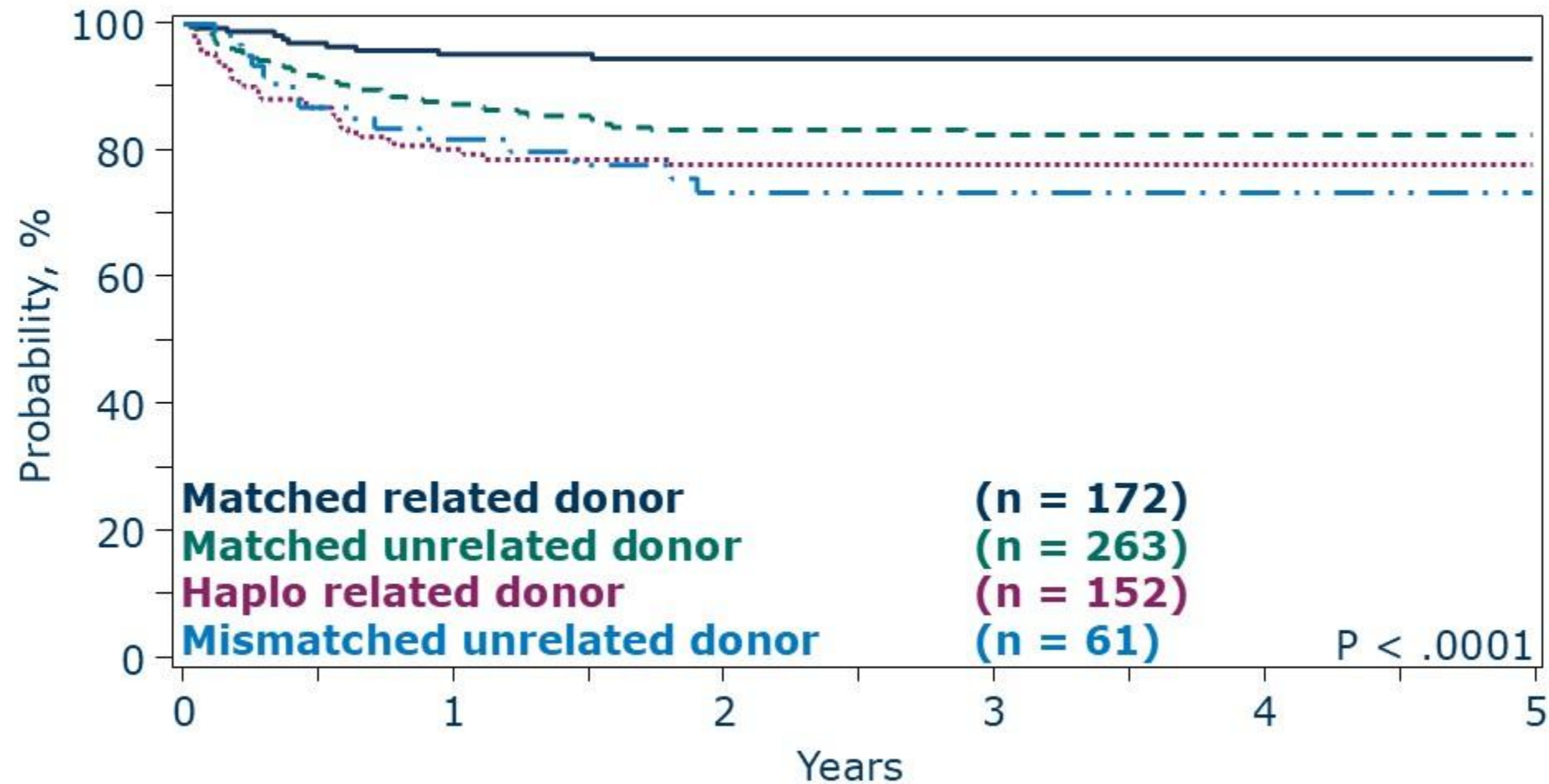
Survival after alloHCT for severe aplastic anemia, US, 2019-2023



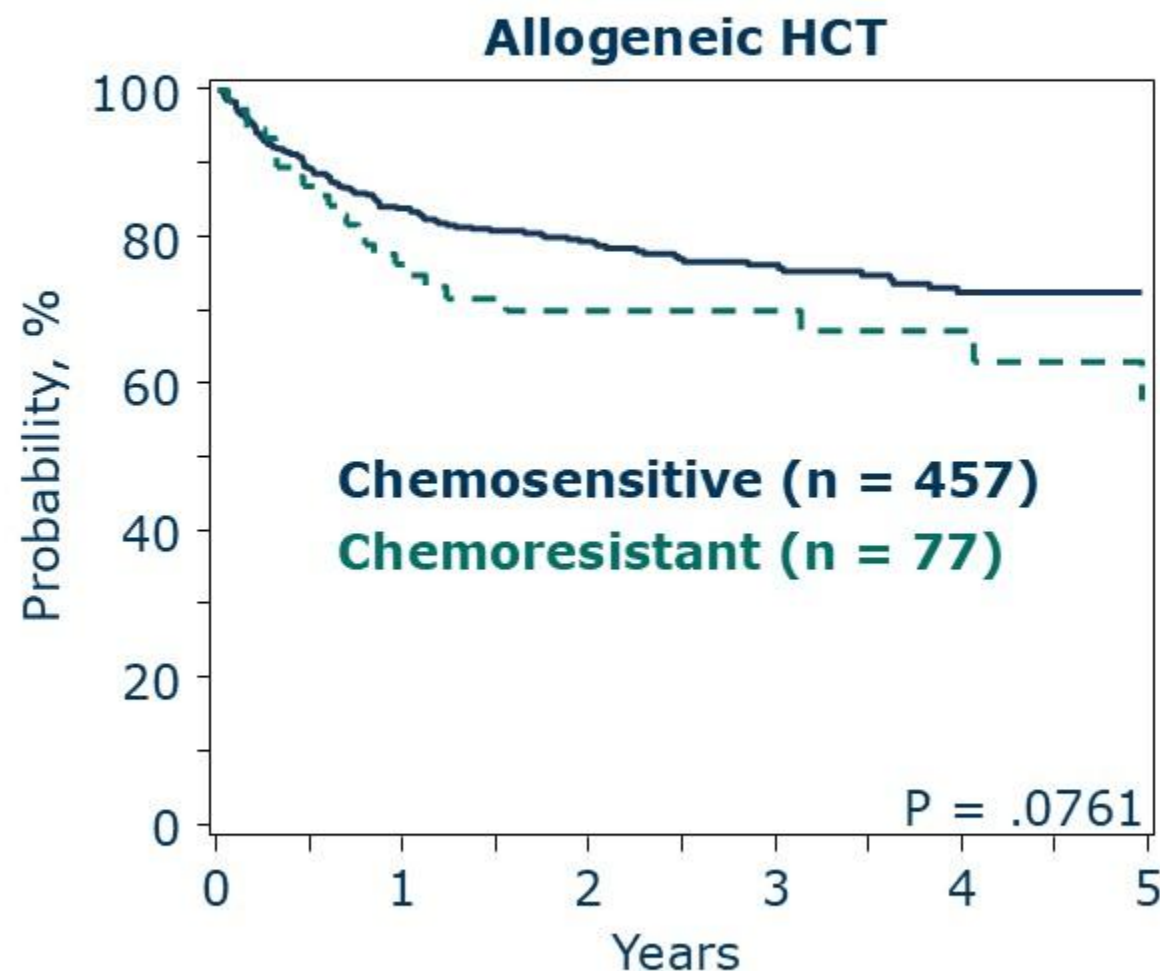
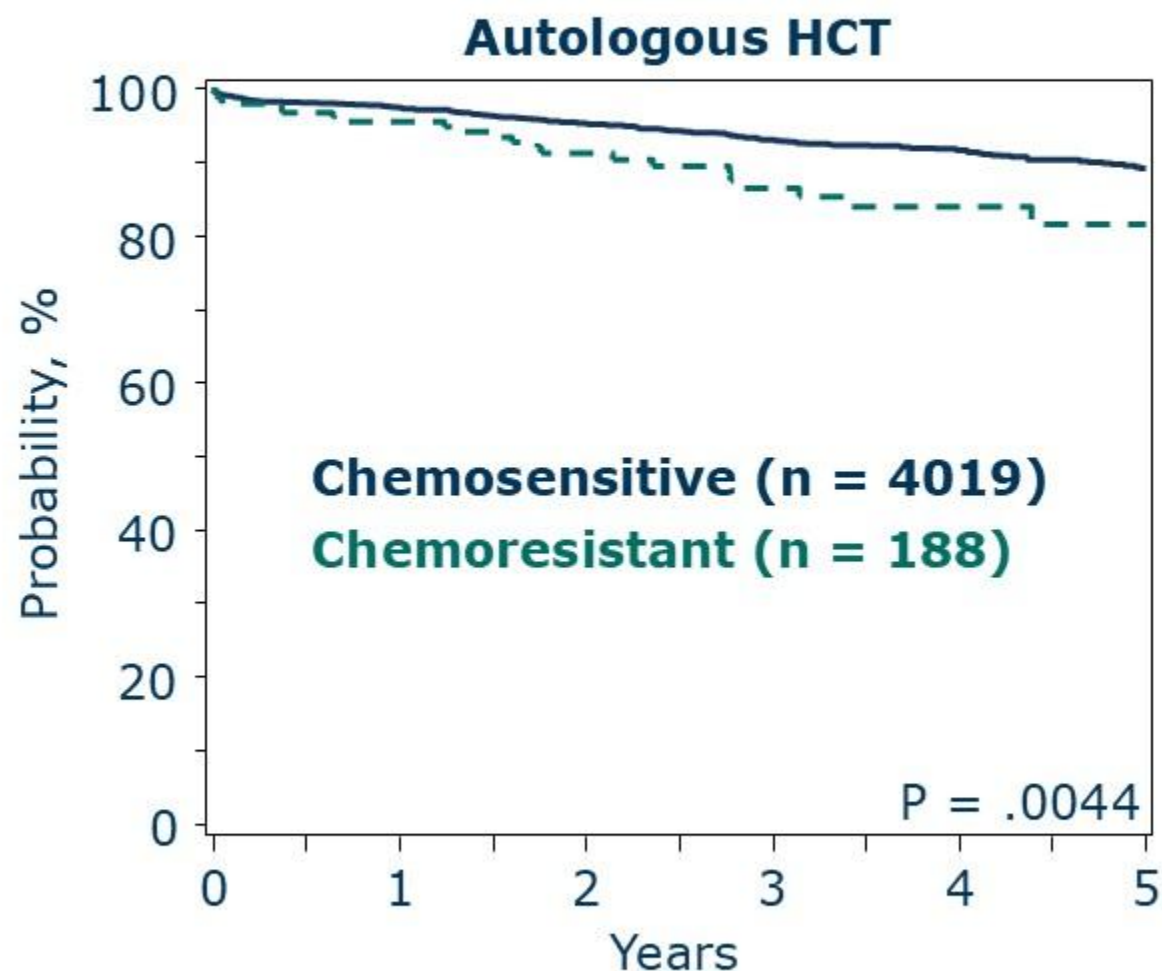
Survival after alloHCT for sickle cell disease, US, 2019-2023



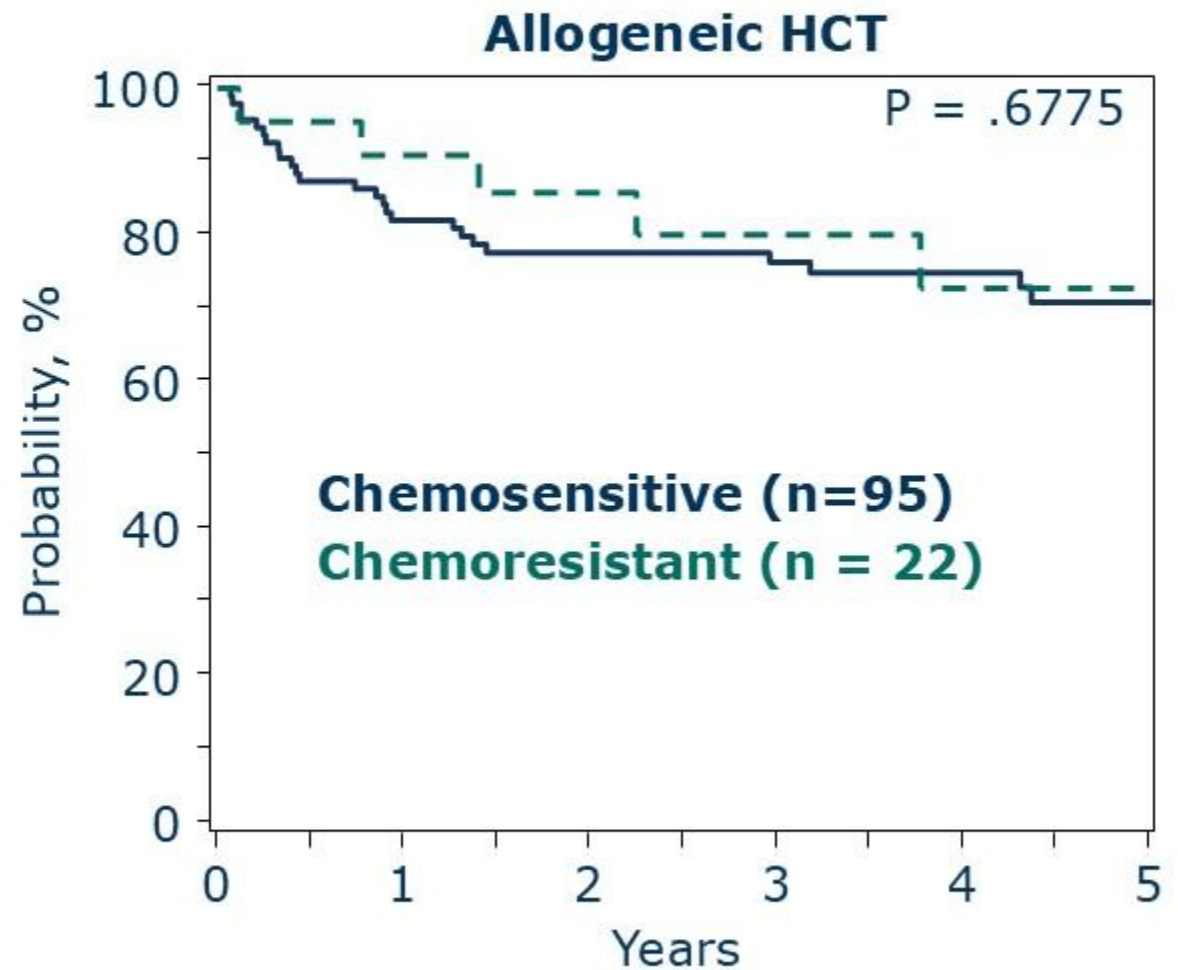
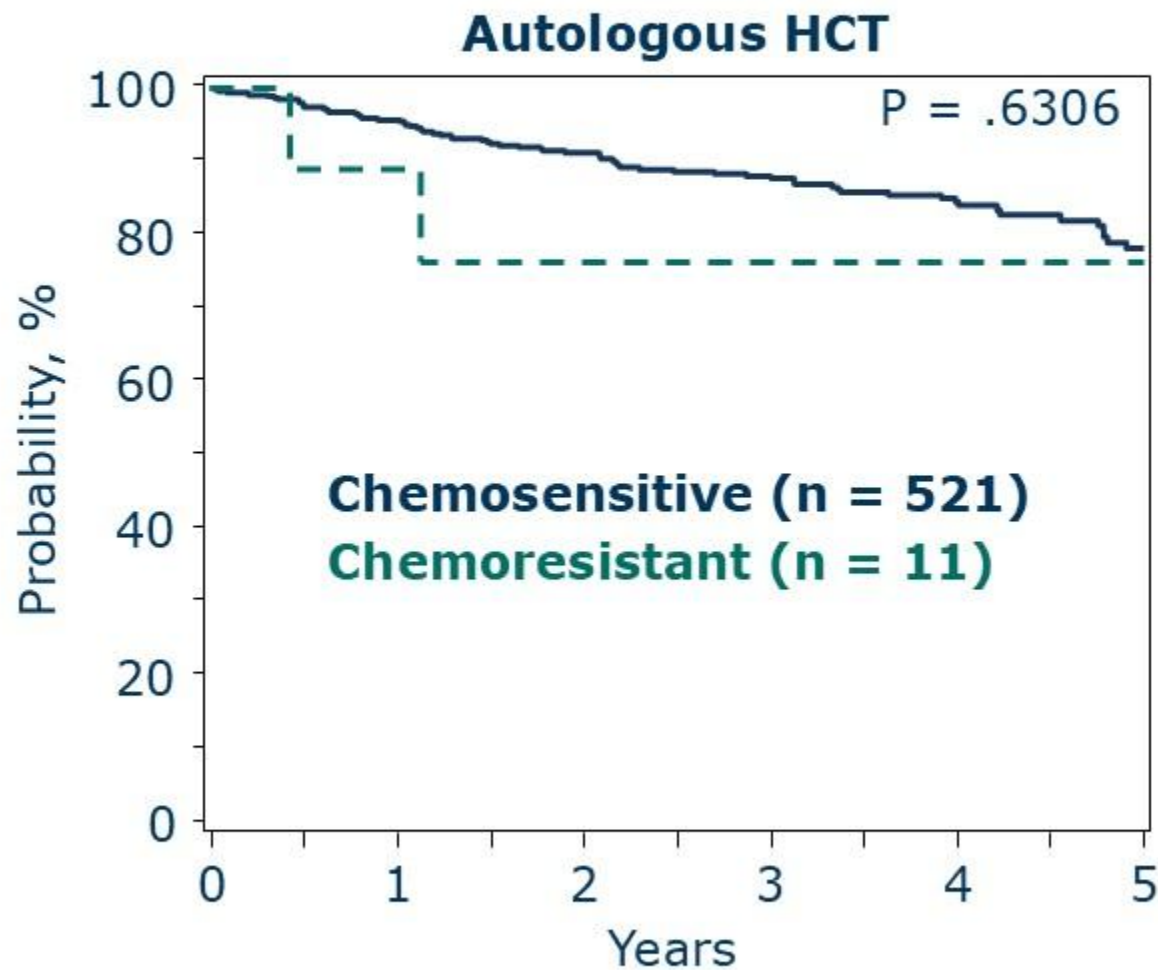
Survival, HCT for primary immune deficiency, US, 2019-2023, pediatrics



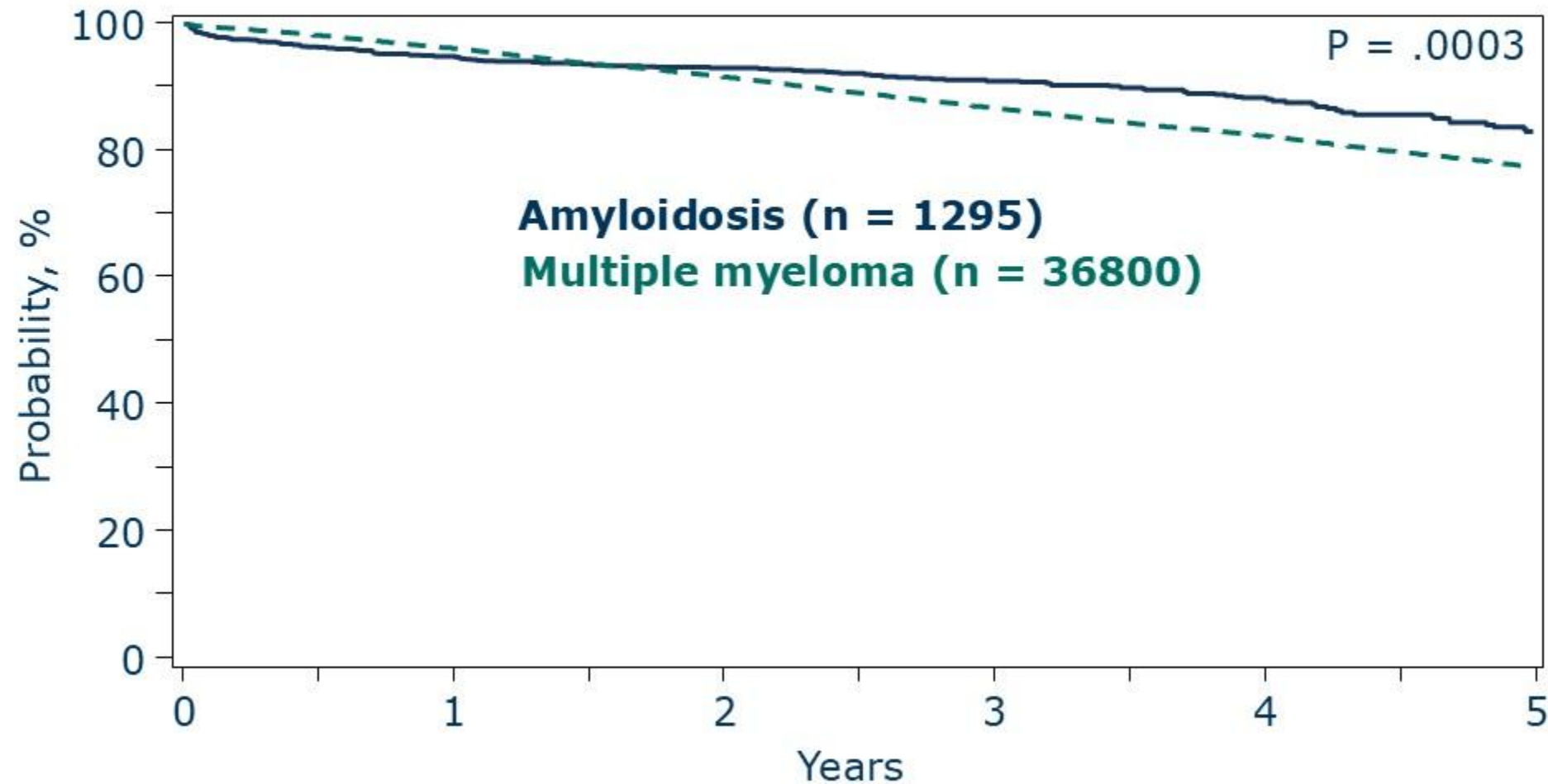
Survival after auto- or alloHCT for Hodgkin lymphoma, US, 2019-2023



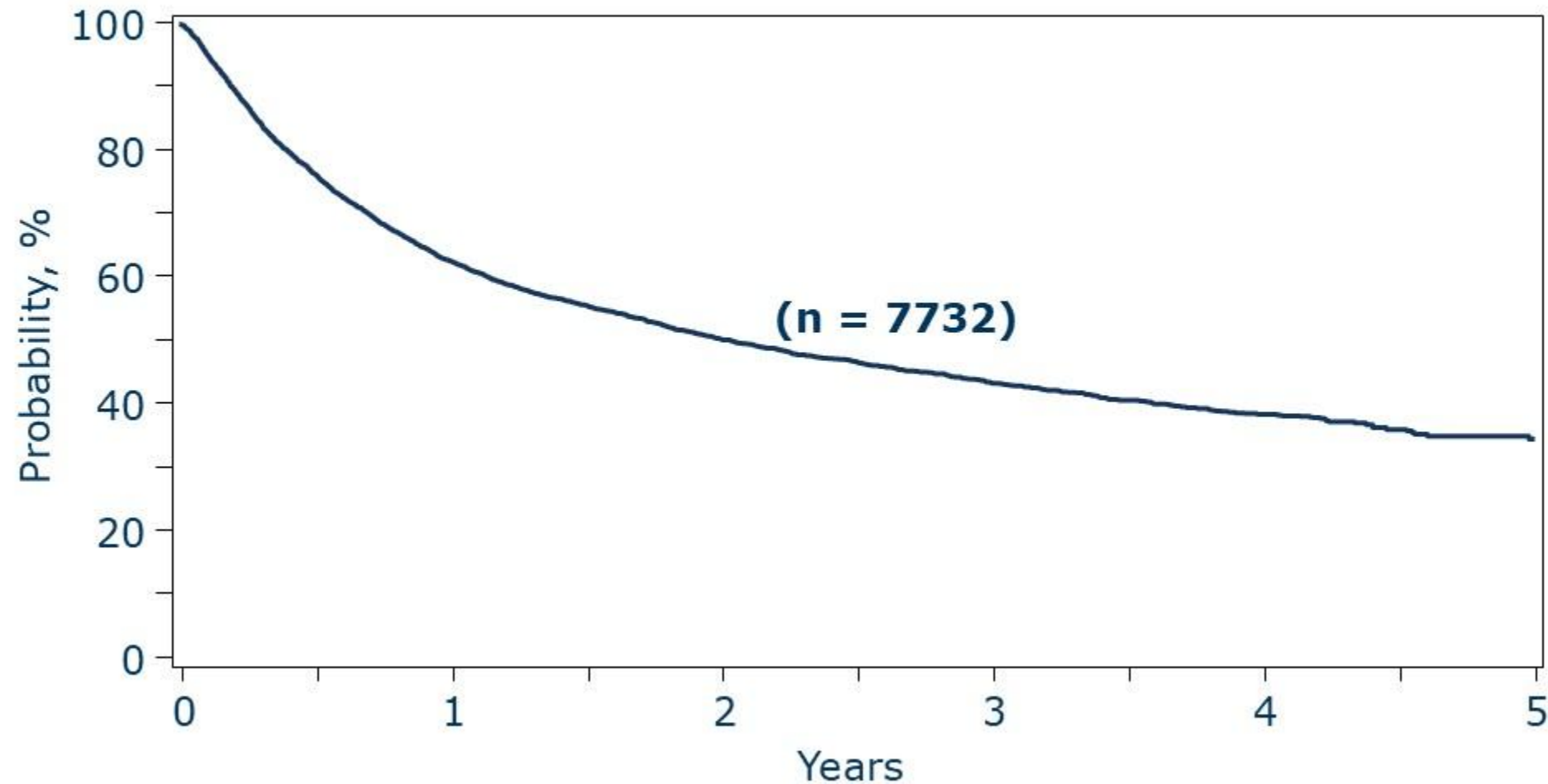
Survival after auto- or alloHCT for follicular lymphoma, US, 2019-2023



Survival after first autoHCT for multiple myeloma and amyloidosis, US, 2019-2023



Survival after first CAR-T infusion for DLBCL, US, 2019-2023



Survival after first CAR-T infusion for ALL, US, 2019-2023

