Who needs a transplant? Indications for HCT

Daniel Weisdorf MD
University of Minnesota

Bad marrow---Aplasia

Bad immunity--Immune Deficiency

Scorched earth

↘

Fertile Soil

↘

Repopulation

Anti-cancer effects of BMT

Kill the cancer cells

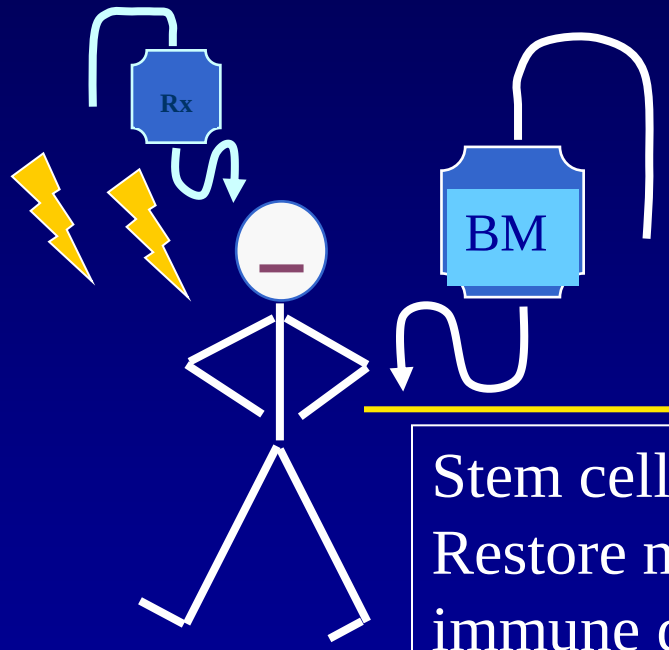
Save the patient

Restore immunocompetence

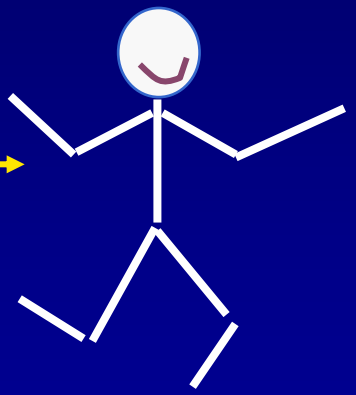
Prevent Infection
Prevent cancer recurrence {GVL}

Blood and Marrow Transplantation

Radiation/Chemotherapy
to kill the cancer



Support until recovery

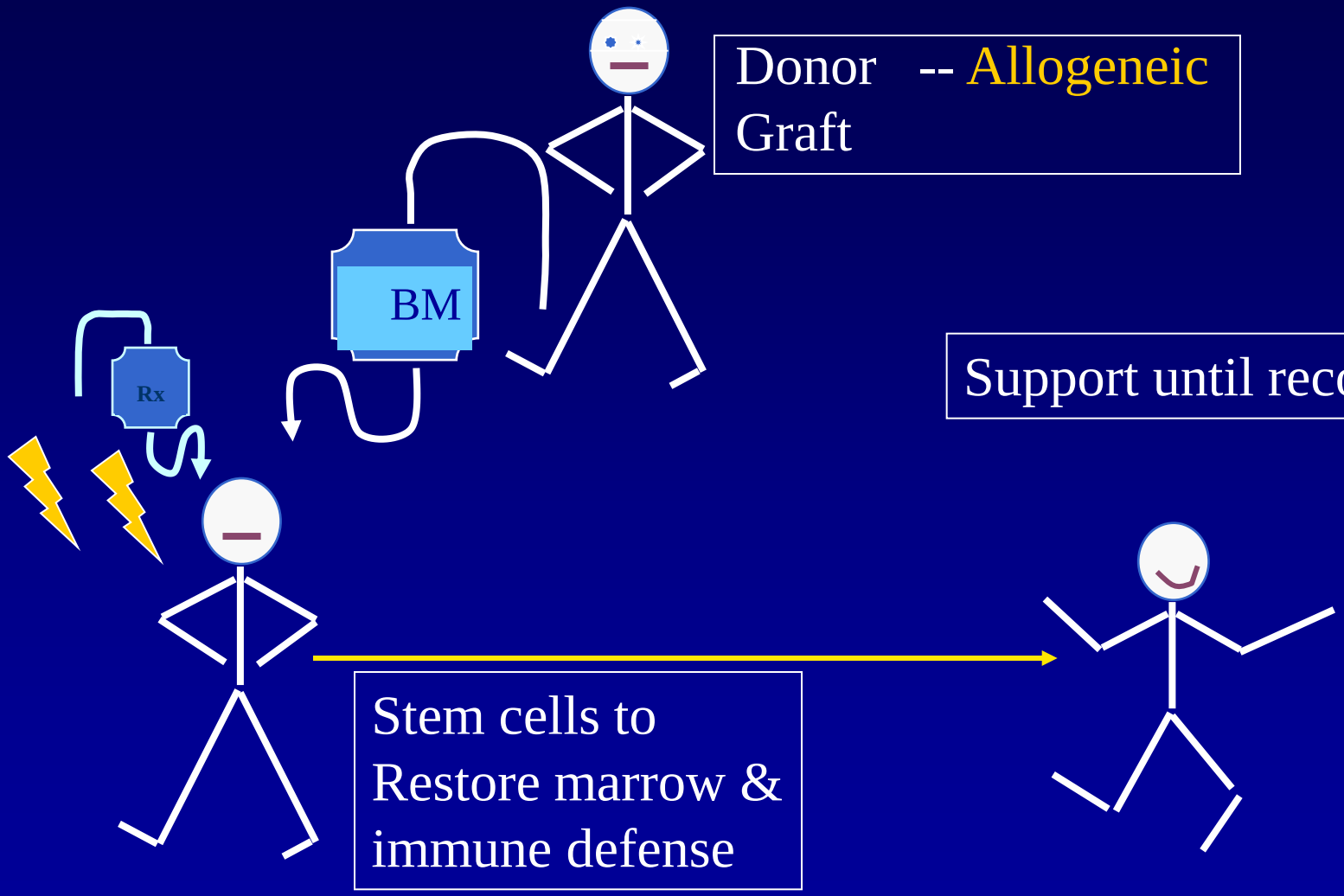


Stem cells to
Restore marrow &
immune defense

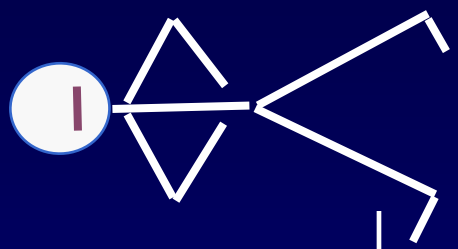
Organ injury
Low blood counts

Replace blood/marrow
Fight infections
Attack residual cancer

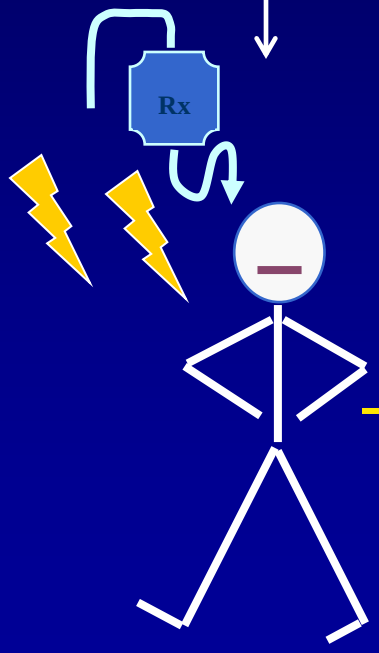
Blood and Marrow Transplantation



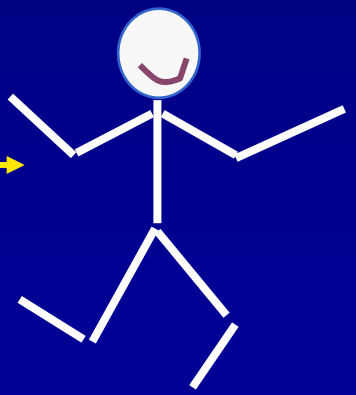
Blood and Marrow Transplantation



Patient as donor -- Autologous
Collect & freeze cells



Support until recovery



Stem cells to
Restore marrow &
immune defense

BMT applications

Replacement therapy for missing or defective blood or marrow function

Aplastic Anemia	missing marrow
Hemoglobin disorders	defective Red cells
Thalassemia, Sickle cell anemia	
Immune deficiencies	defective immunity
Metabolic disorders	missing enzymes

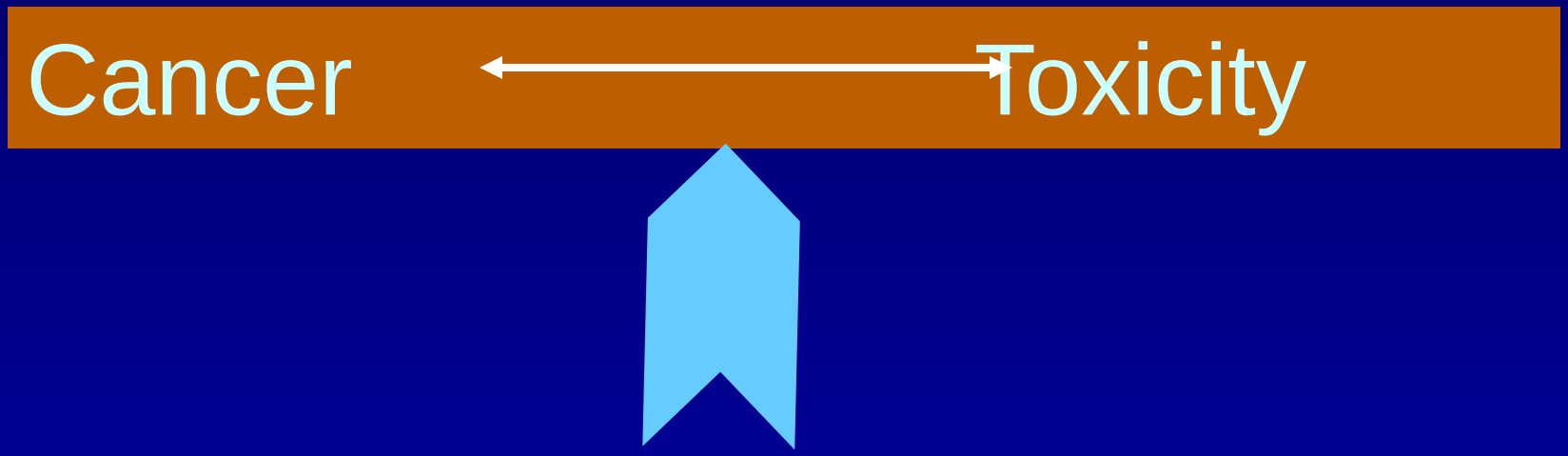
BMT applications

Hematologic (Blood or Marrow) Cancers
Leukemia, Lymphoma, Myeloma

Curative where conventional therapy fails

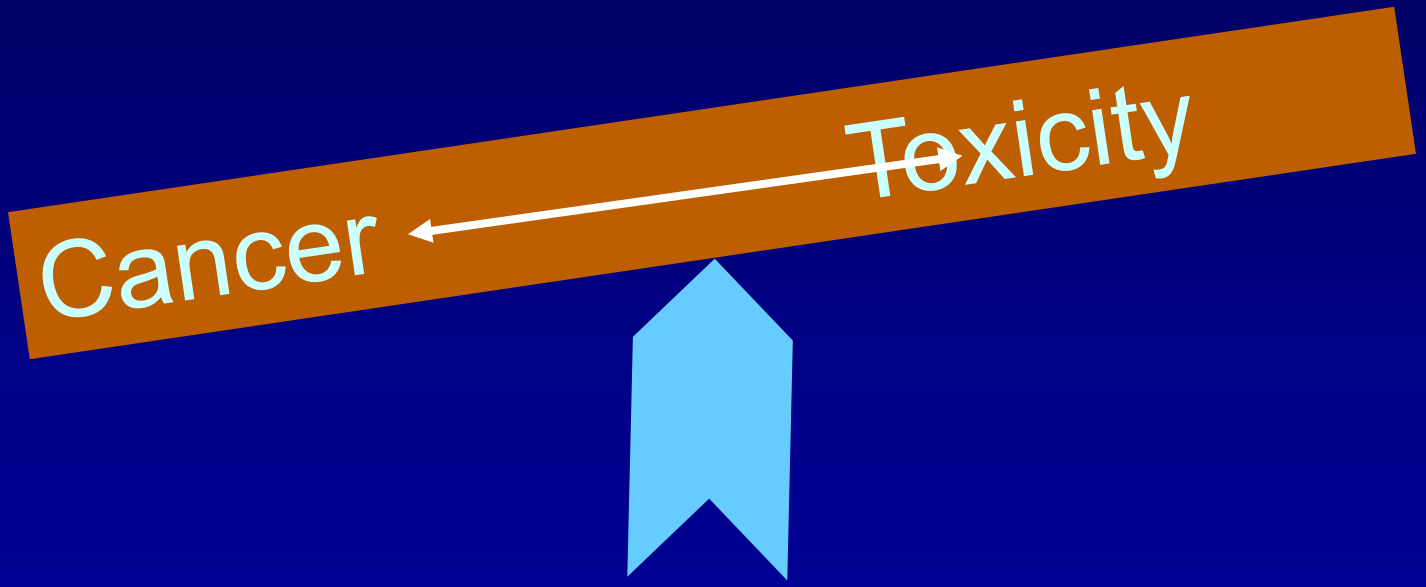
- *Higher dose treatment*
- *Immune anti-cancer effect from donor cells*

The Therapeutic Balance



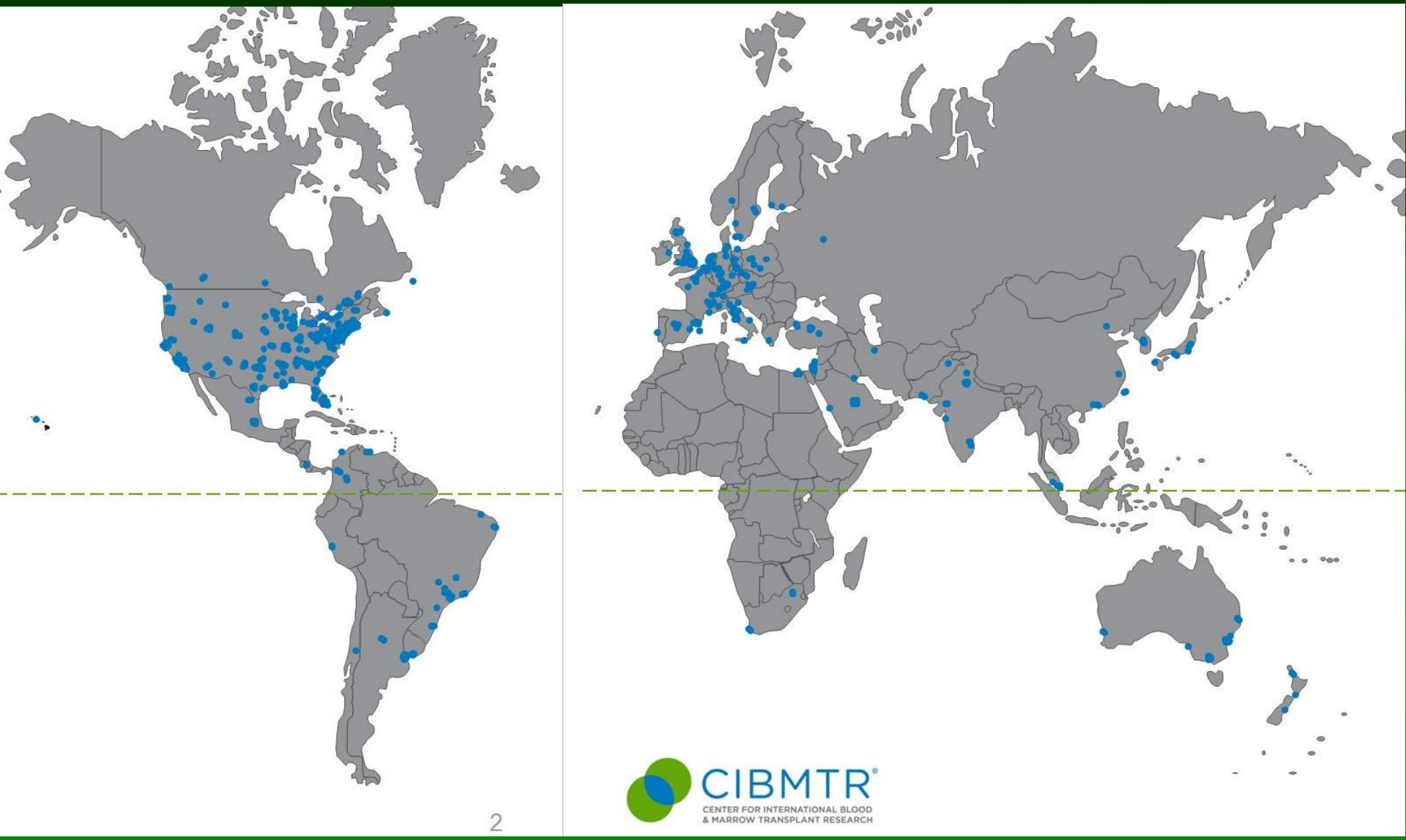
Patient Safety & Cure

The Therapeutic Balance

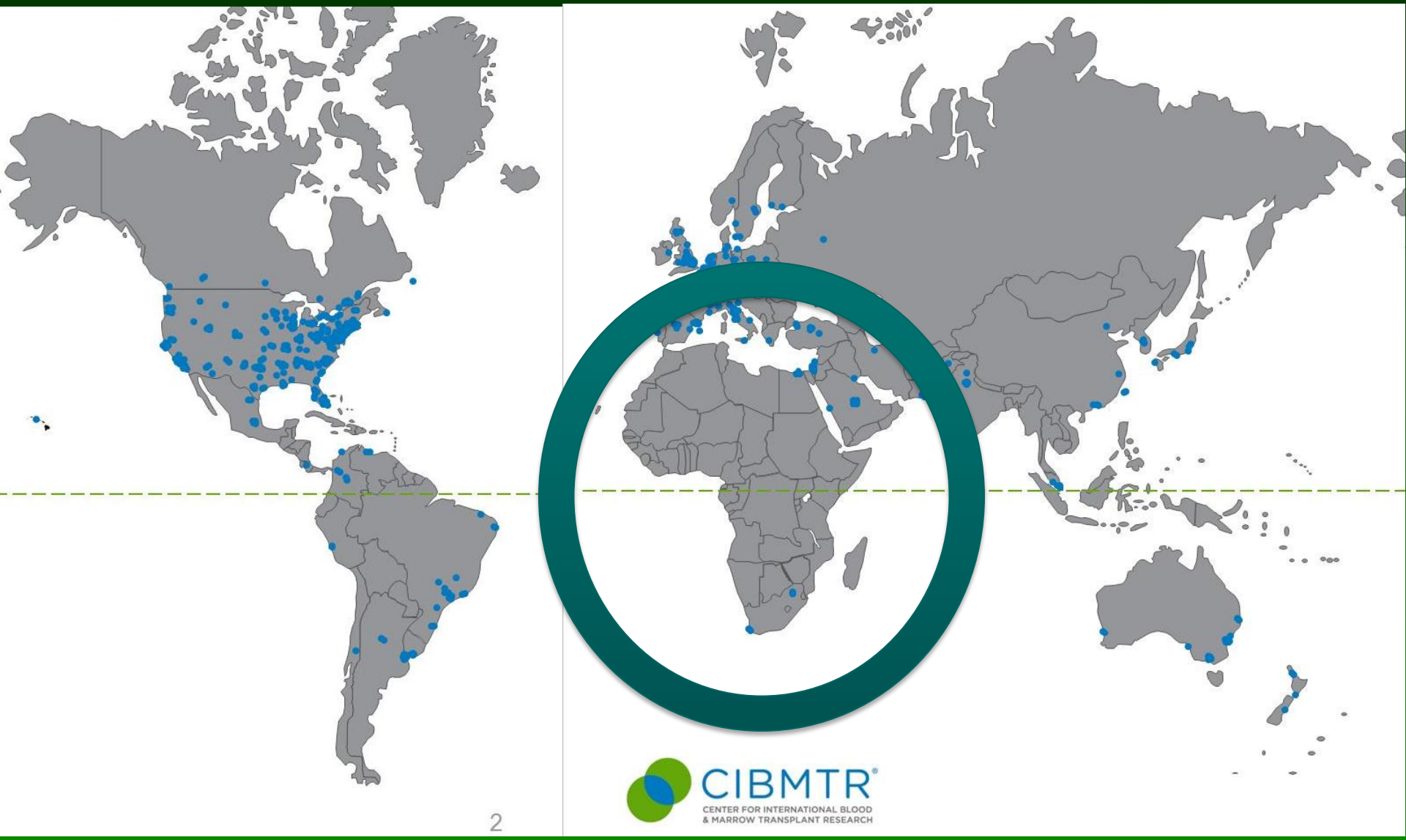


Patient Safety & Cure

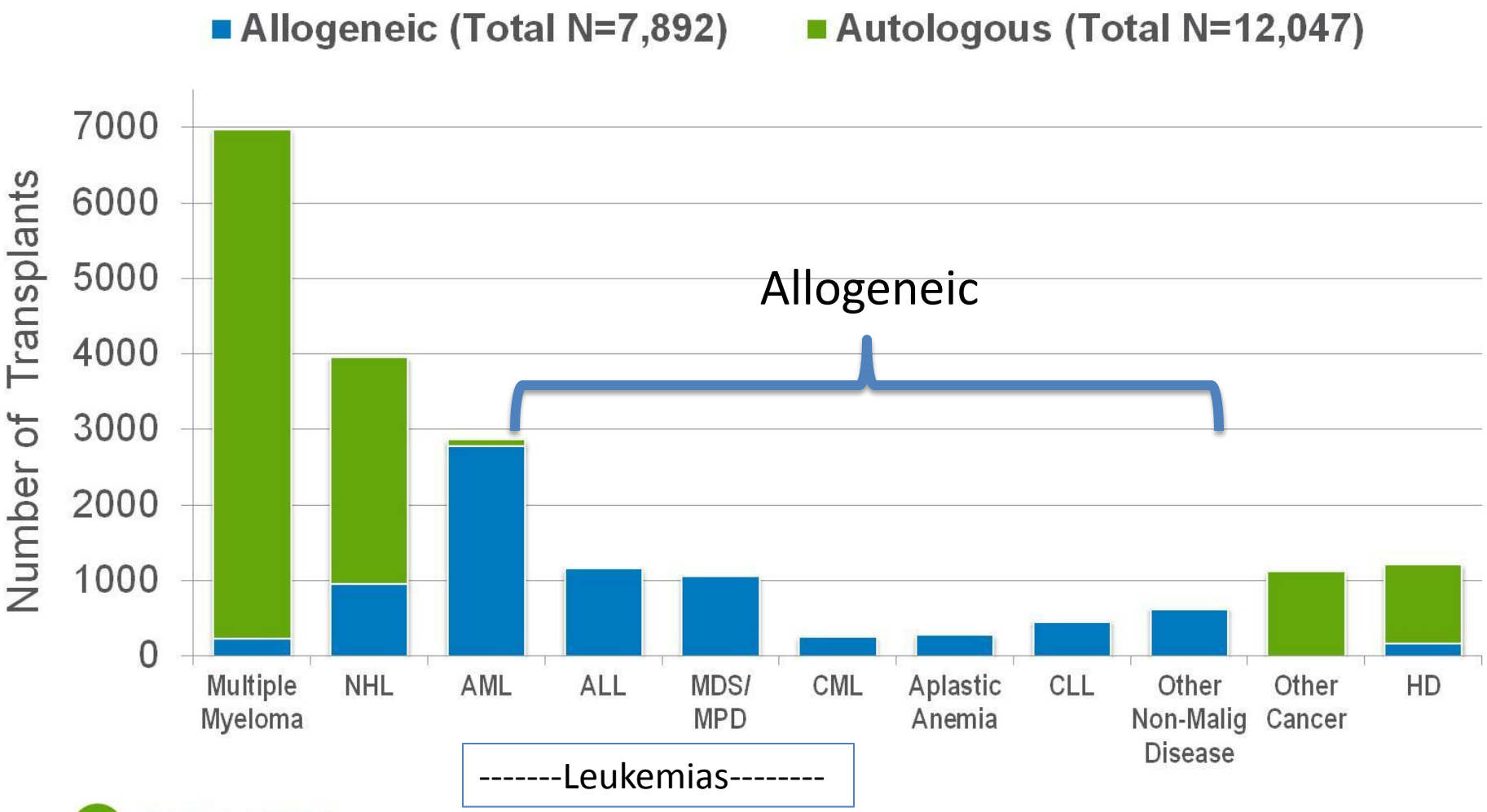
Location of Center participating in the CIBMTR 2013



Location of Center participating in the CIBMTR 2013



Indications for Hematopoietic Stem Cell Transplants in the US, 2011



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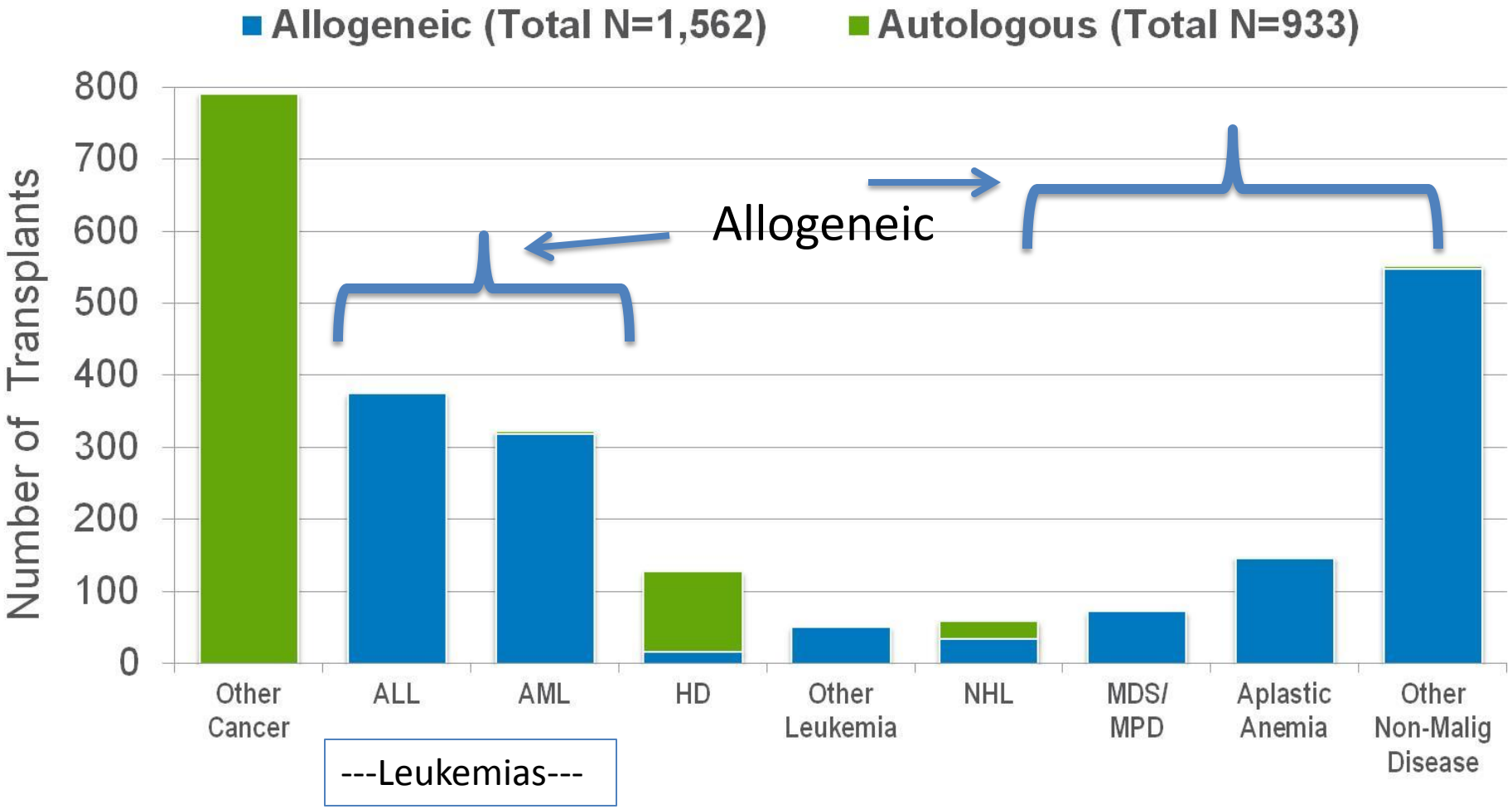
Indications for Hematopoietic Stem Cell Transplants for Age ≤ 20 years, in the US, 2011



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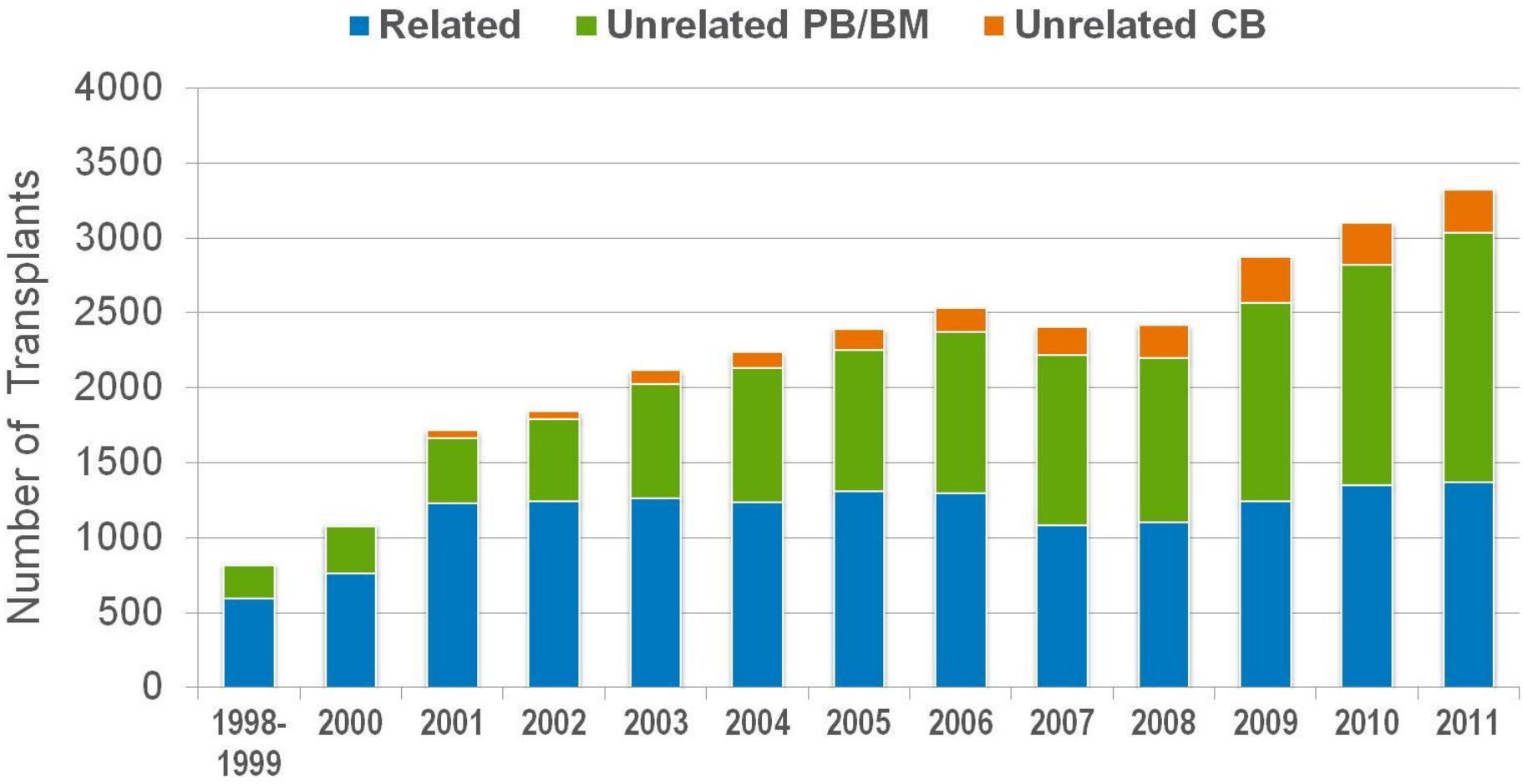
Allogeneic Transplants after Reduced Intensity Conditioning, by Donor Type, Registered with CIBMTR



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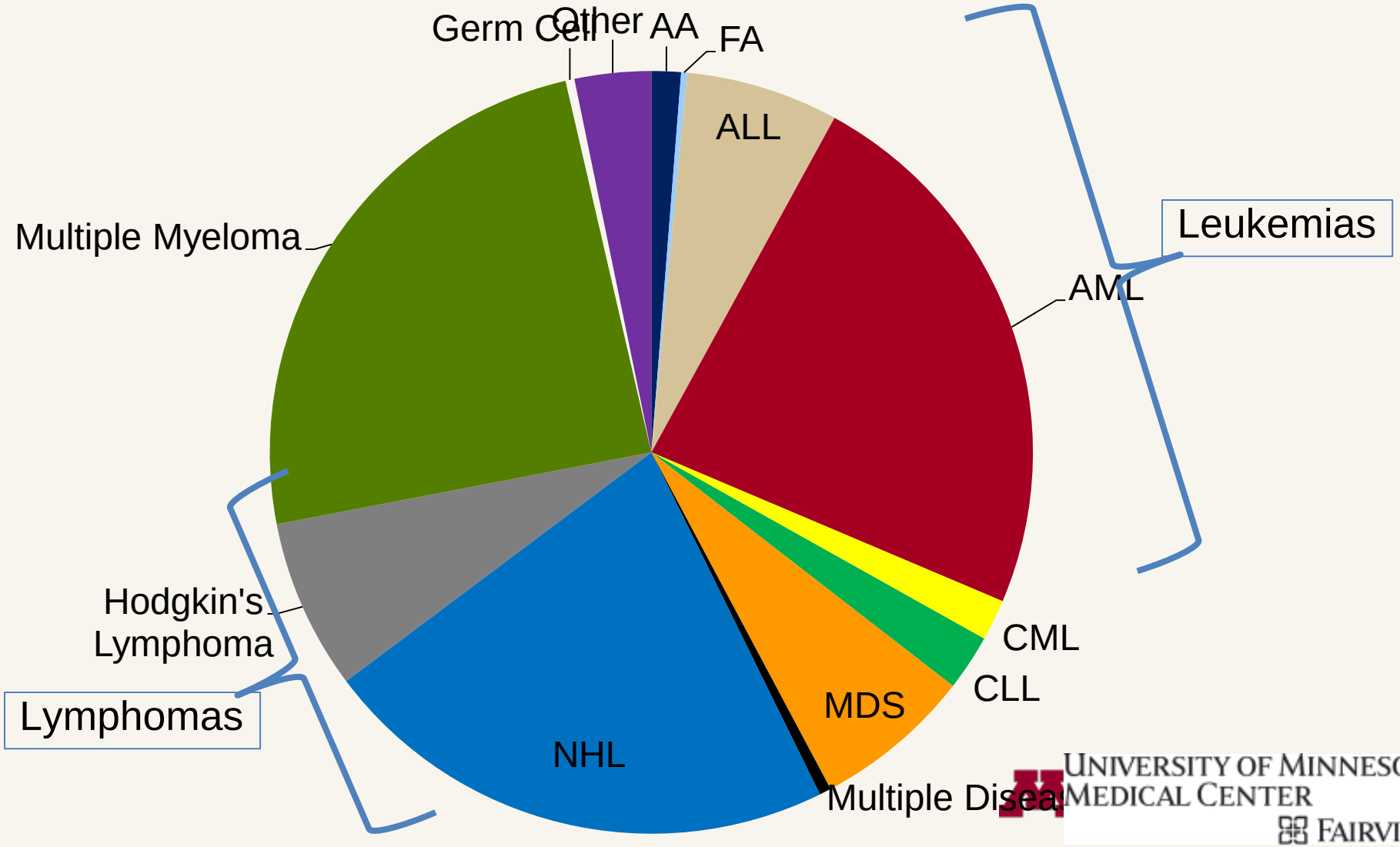
BLOOD AND MARROW TRANSPLANT PROGRAM

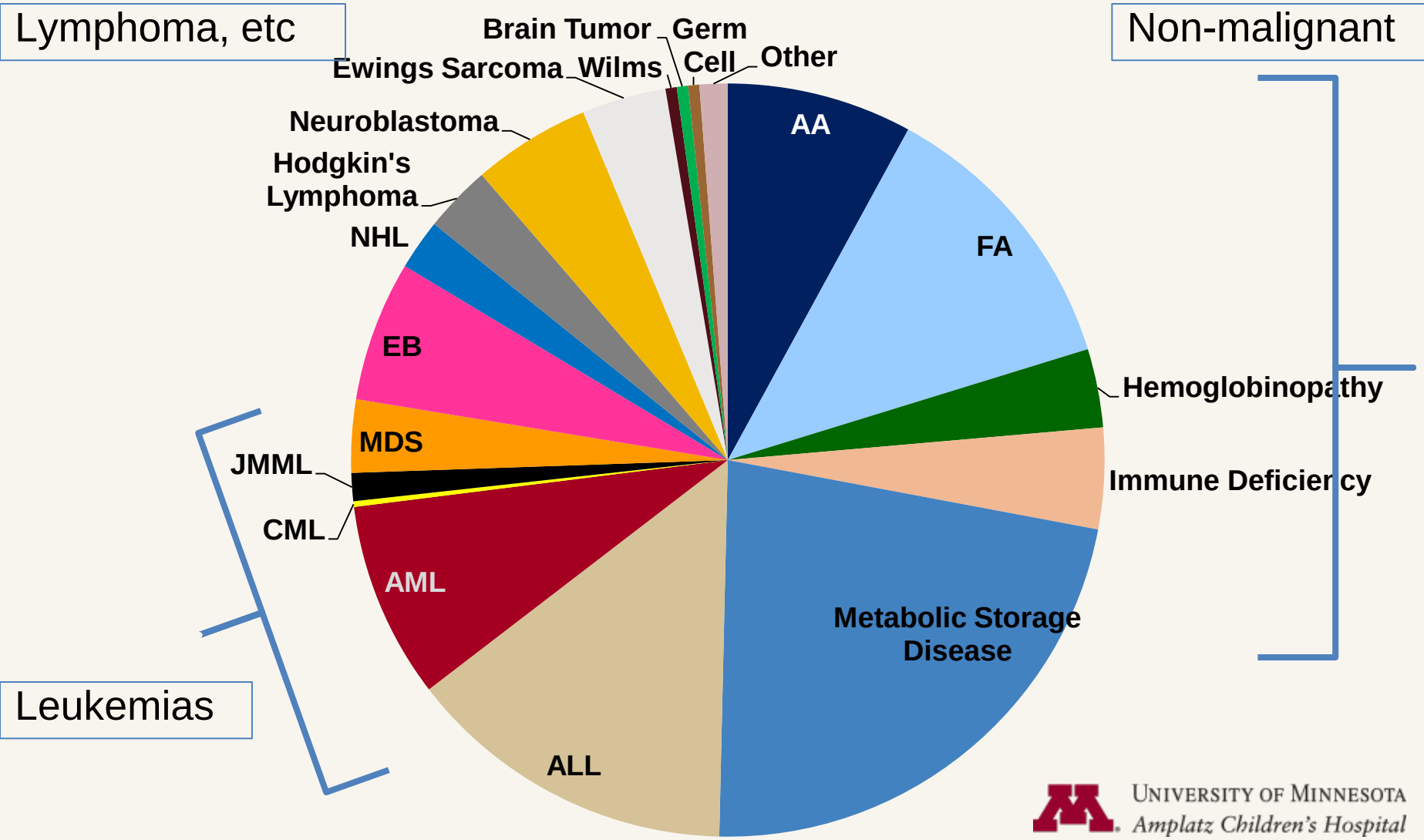
Diagnoses -- University of Minnesota, 2008-2012, Adult Service



UNIVERSITY OF MINNESOTA MEDICAL CENTER
FAIRVIEW

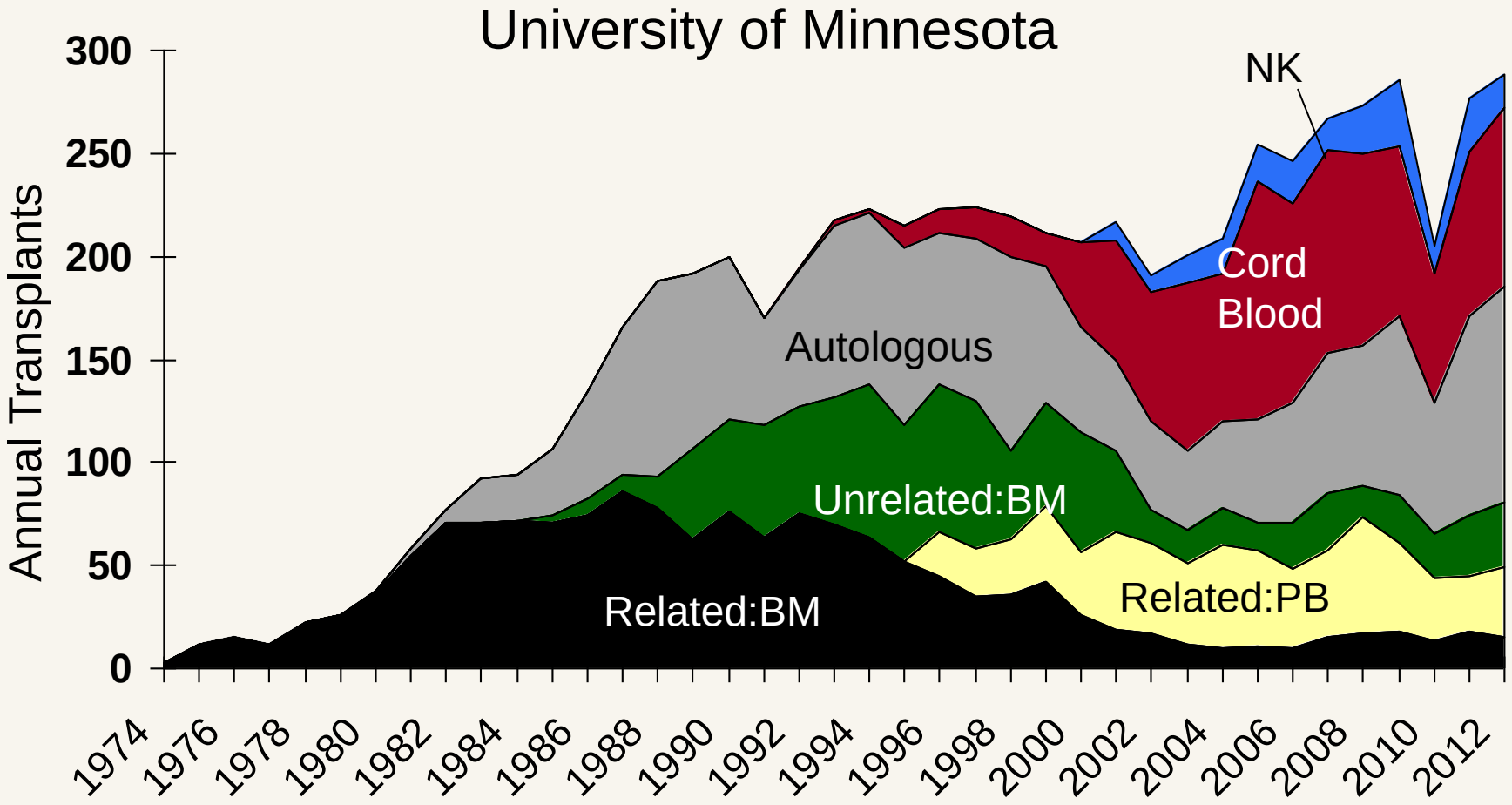
BLOOD AND MARROW TRANSPLANT PROGRAM

Diagnoses -- University of Minnesota, 2008-2012, Pediatric Service

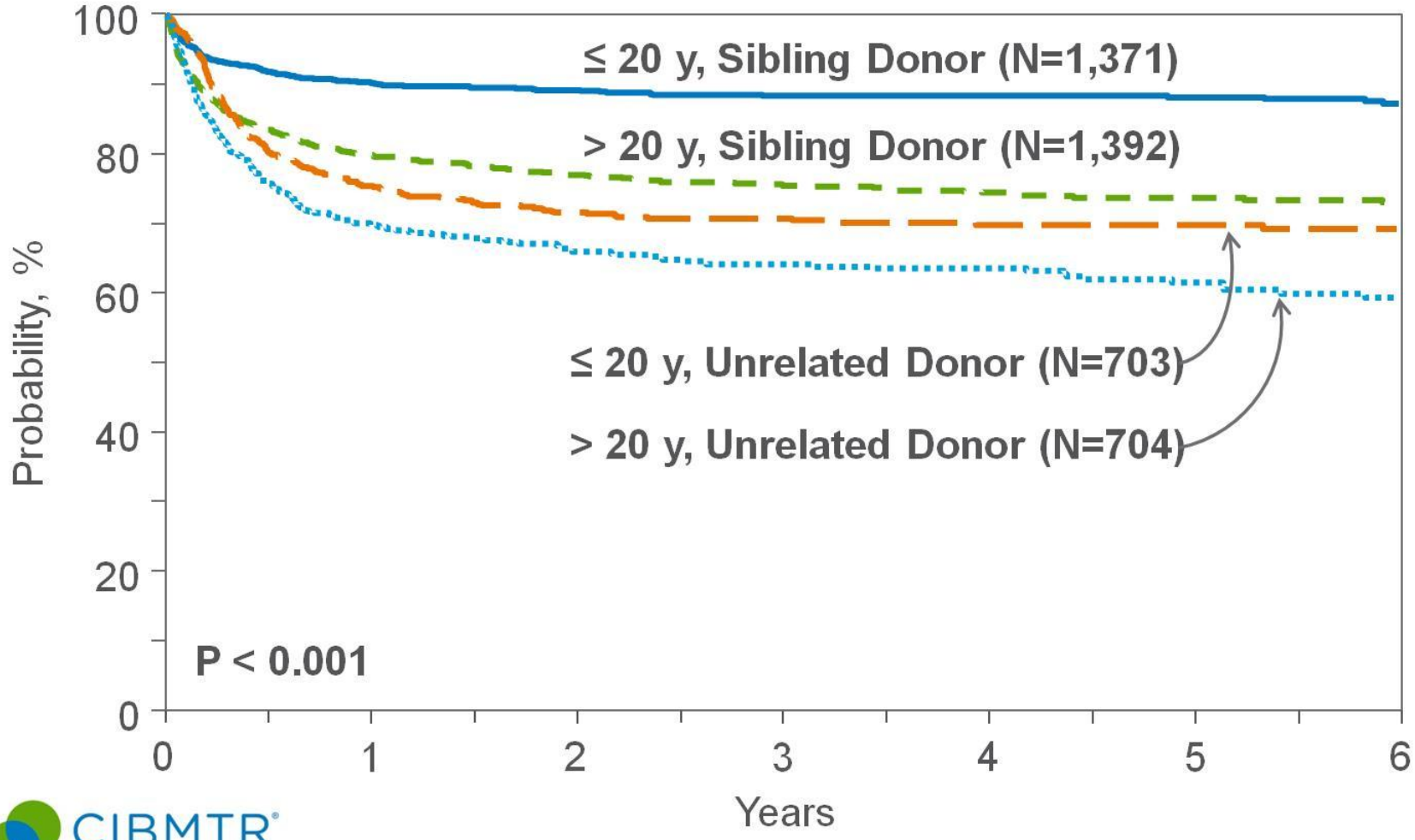


UNIVERSITY OF MINNESOTA
Amplatz Children's Hospital

Blood and Marrow Transplants by Donor Type, 1974-2012



Survival after Allogeneic Transplants for SAA, 2001-2011



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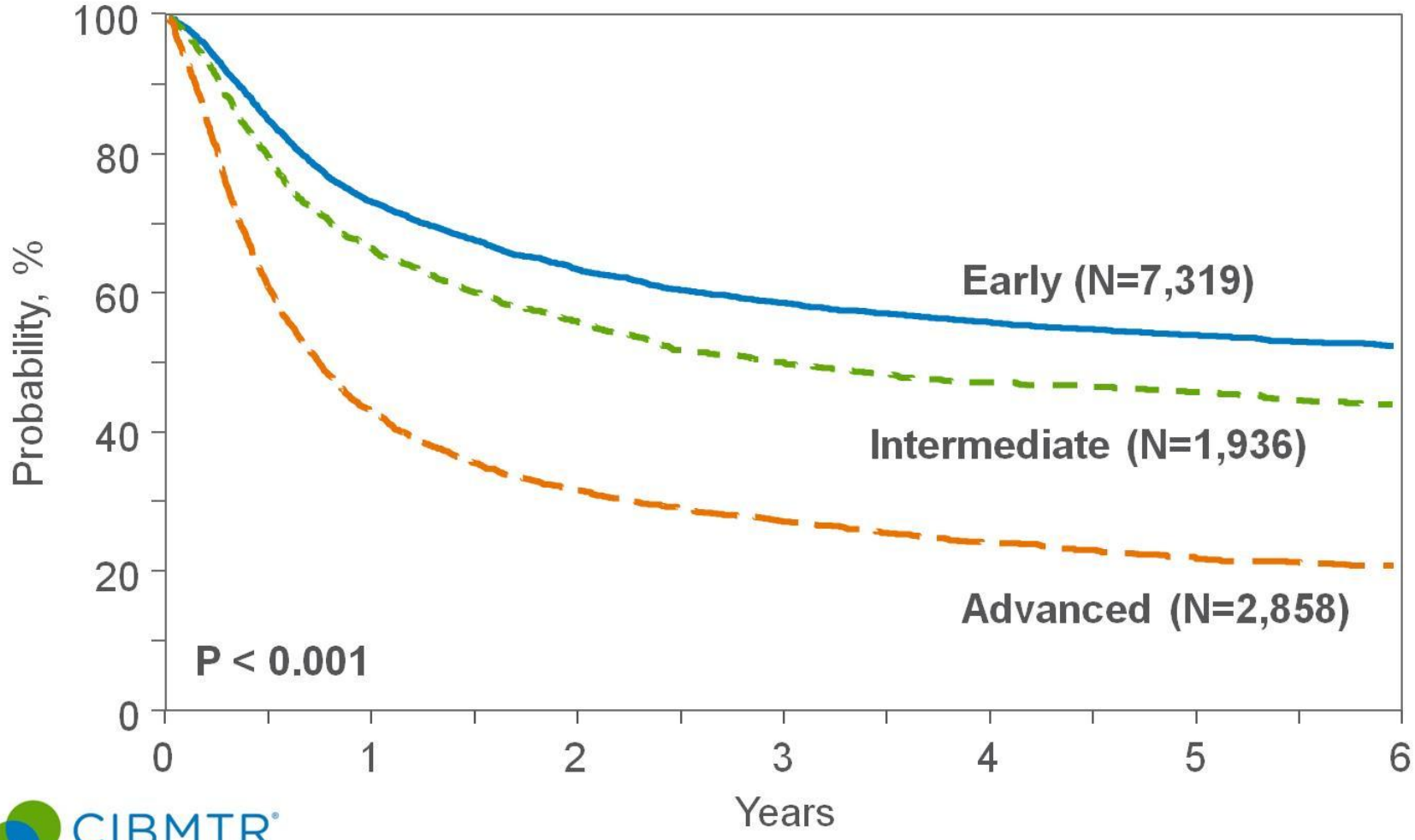
By Donor Type and Age

Survival after HLA-identical Sibling Donor Transplants for AML, 2001-2011



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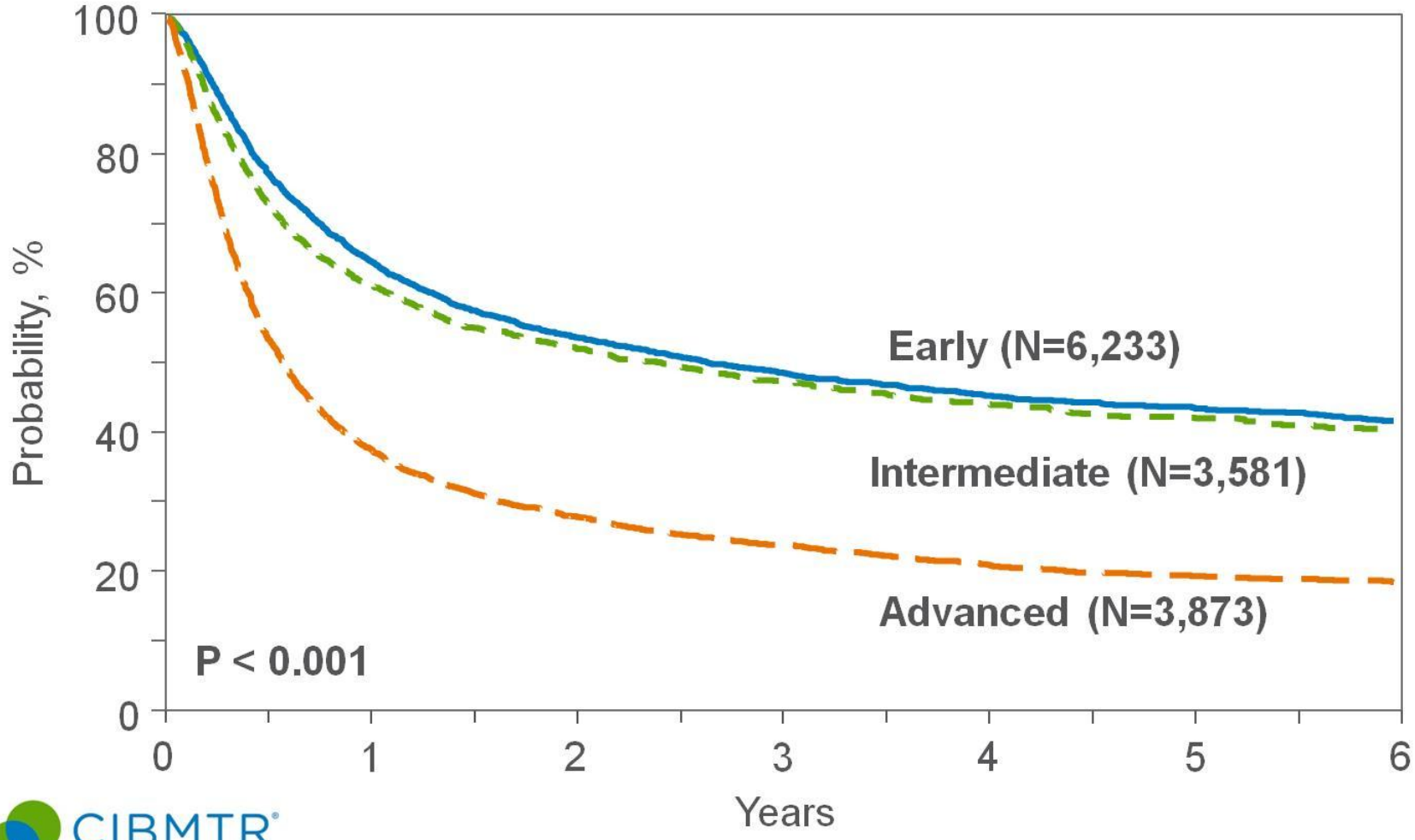
By Disease Status

Survival after Unrelated Donor Transplants for AML, 2001-2011



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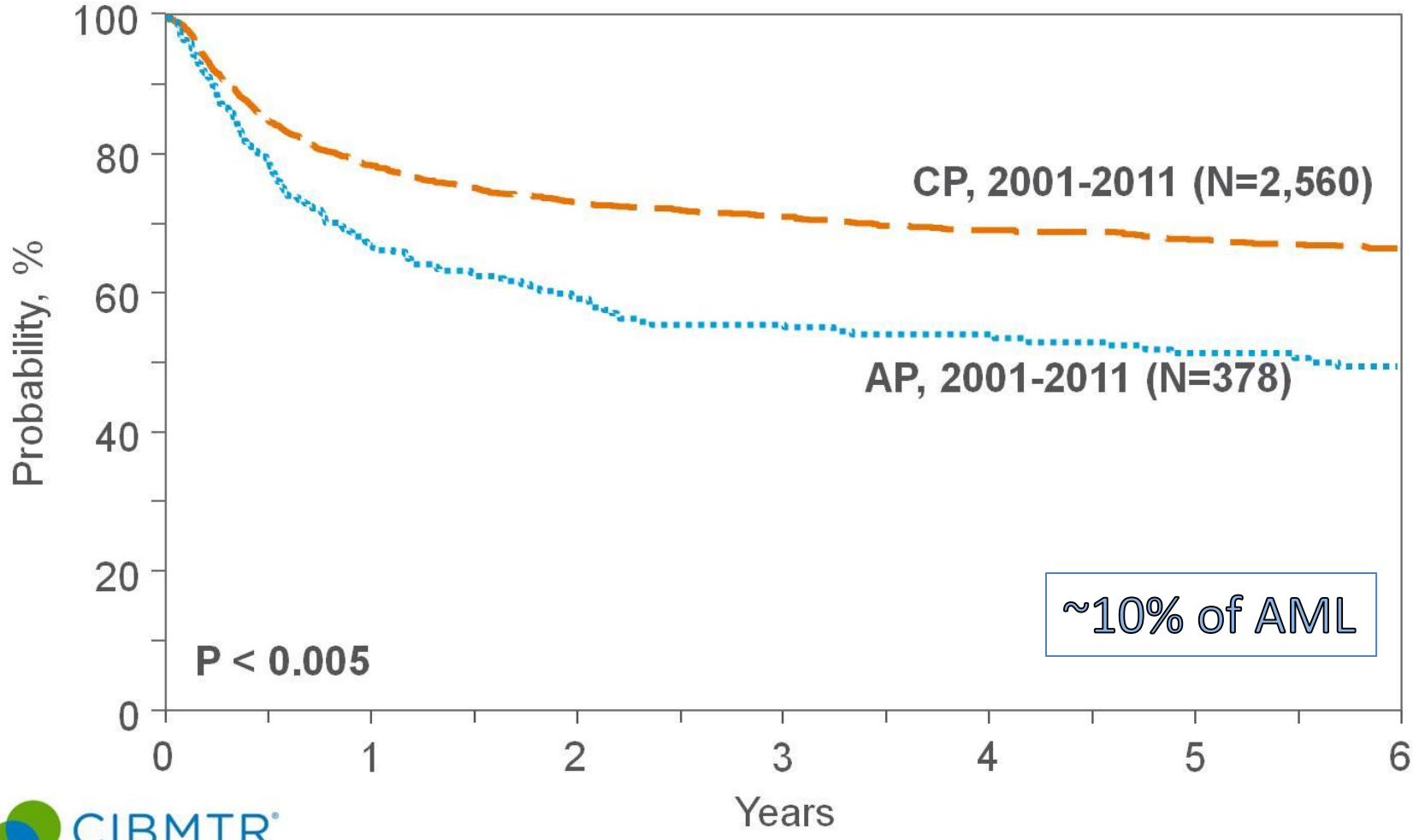
By Disease Status

Survival after HLA-identical Sibling Donor Transplants for CML, 2001-2011



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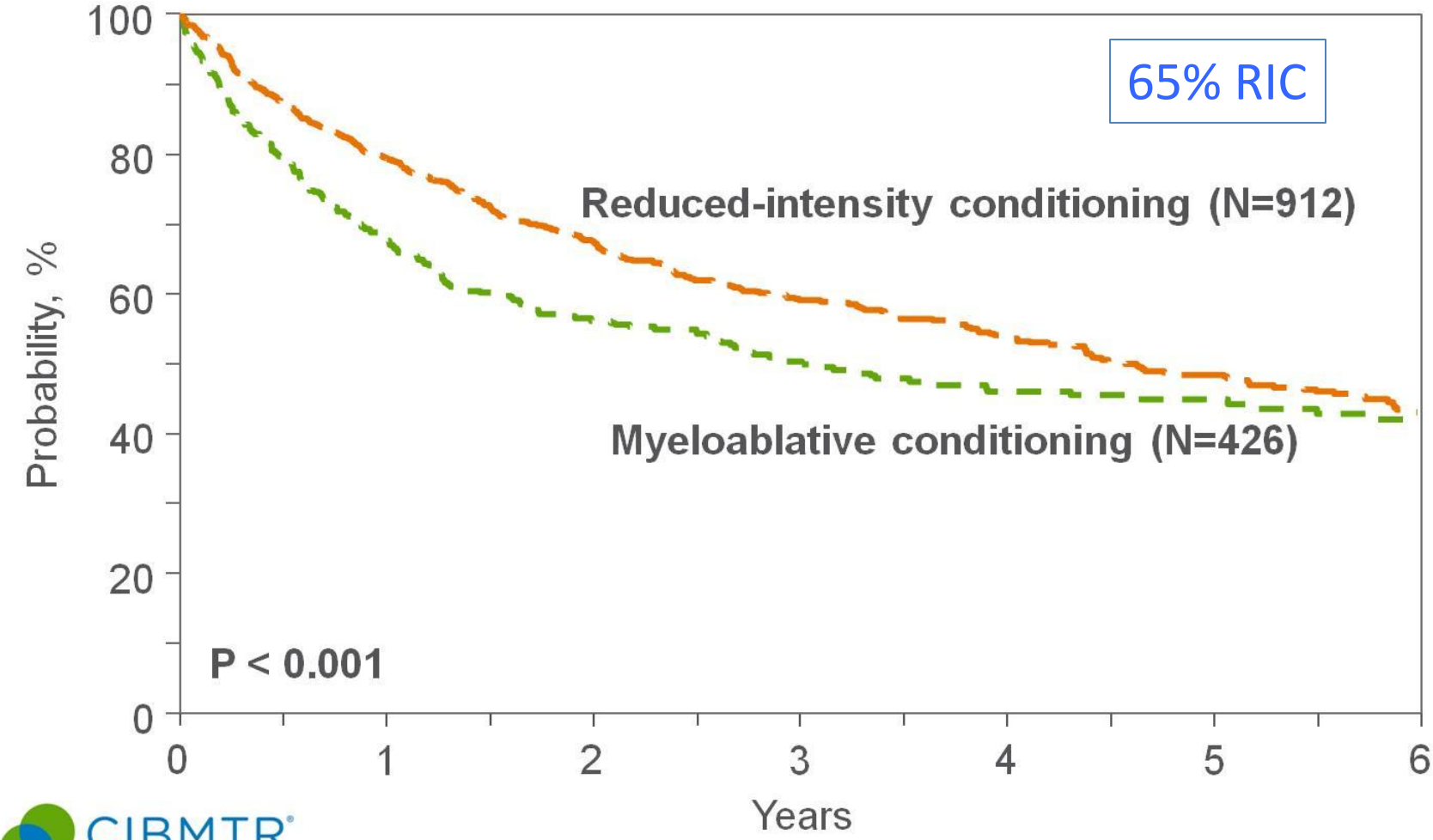
By Disease Status

Survival after HLA-matched Sibling Donor Hematopoietic Cell Transplants for CLL, 2001-2011



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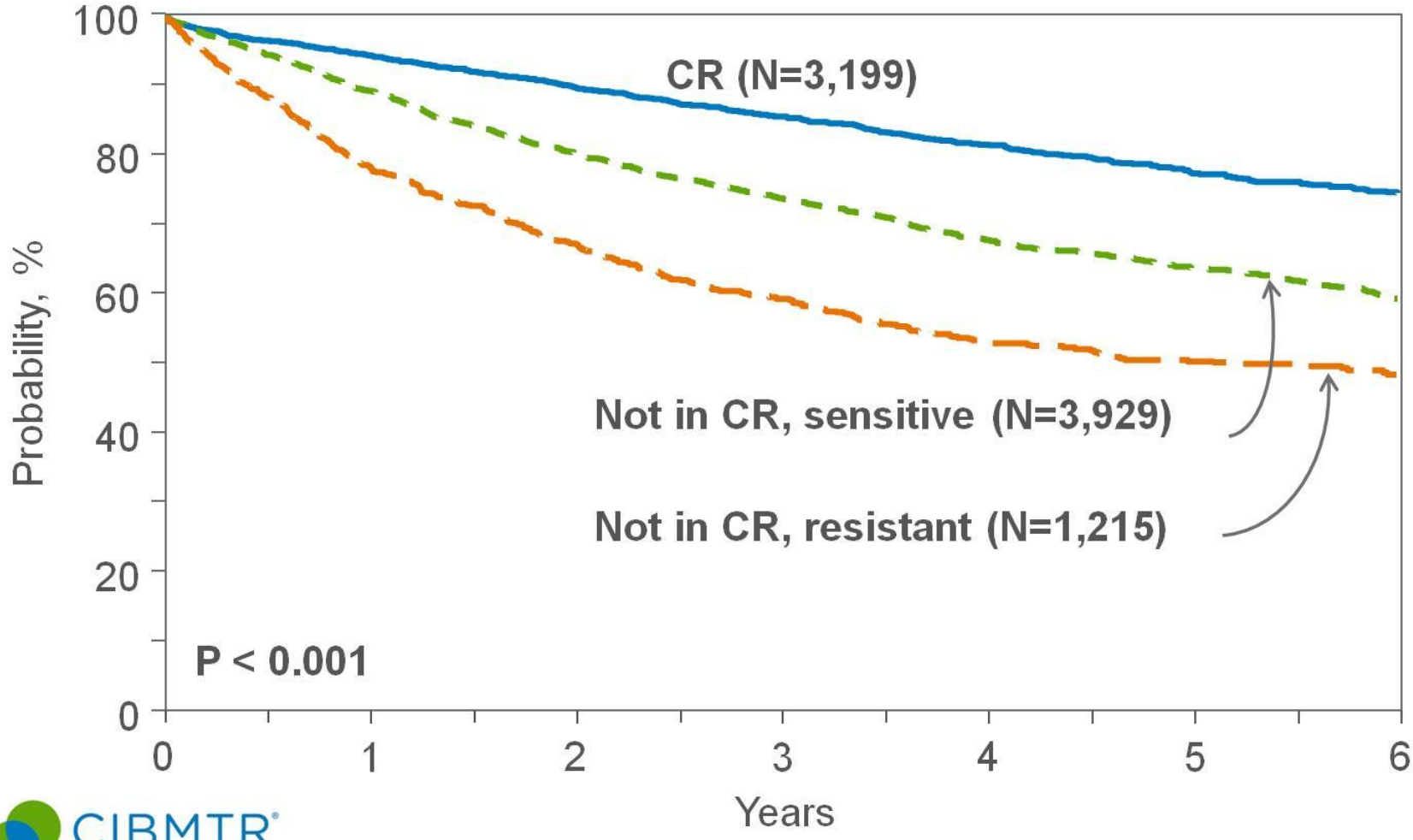
By Conditioning Regimen Intensity

Survival after Autologous Transplants for Hodgkin Lymphoma, 2001-2011



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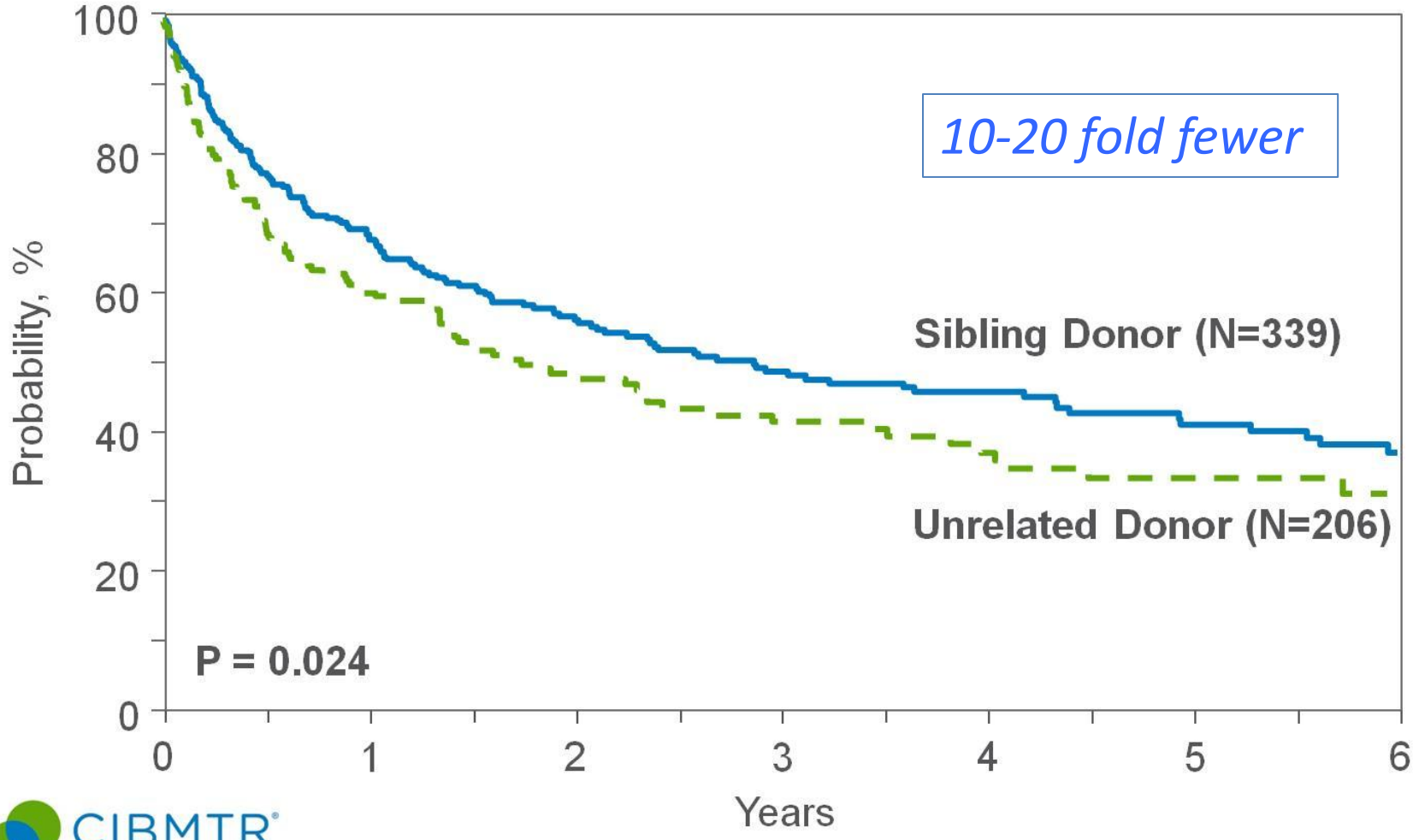
By Disease Status

Survival after Allogeneic Transplants for Hodgkin Lymphoma, 2001-2011



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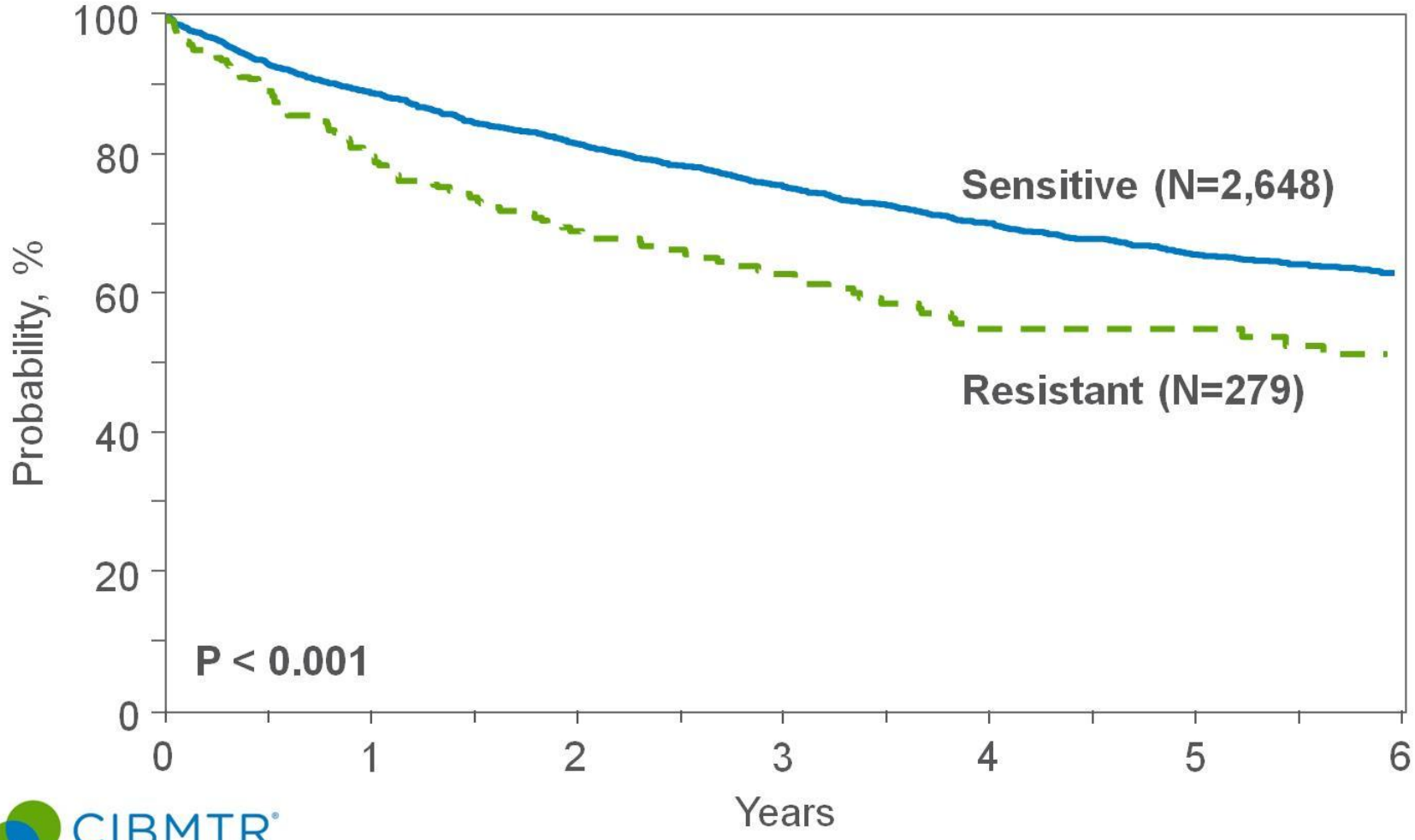
By Donor Type

Survival after Autologous Transplants for Follicular Lymphoma, 2001-2011



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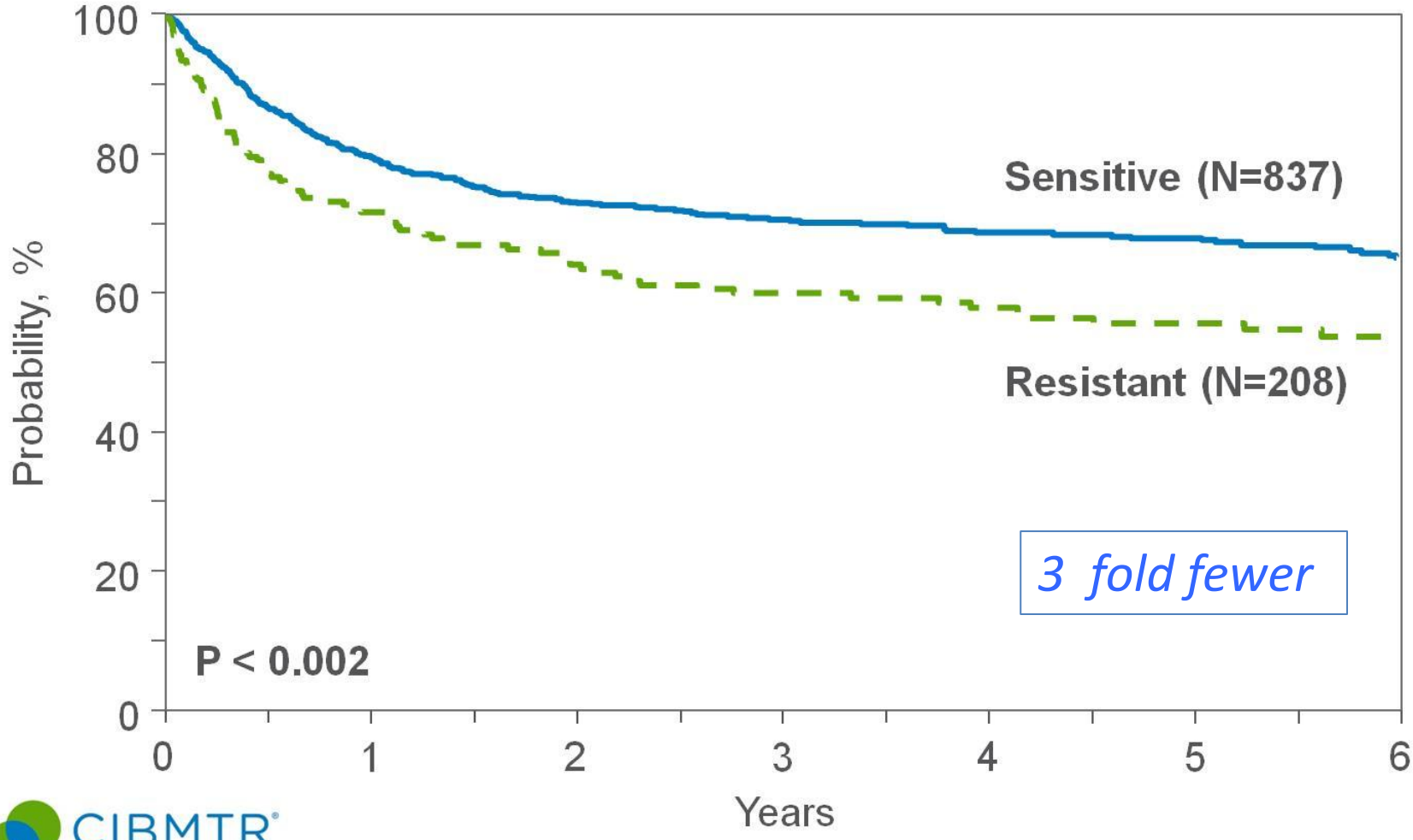
By Disease Status

Survival after Allogeneic and HLA-identical Sibling Transplants for Follicular Lymphoma, 2001-2011



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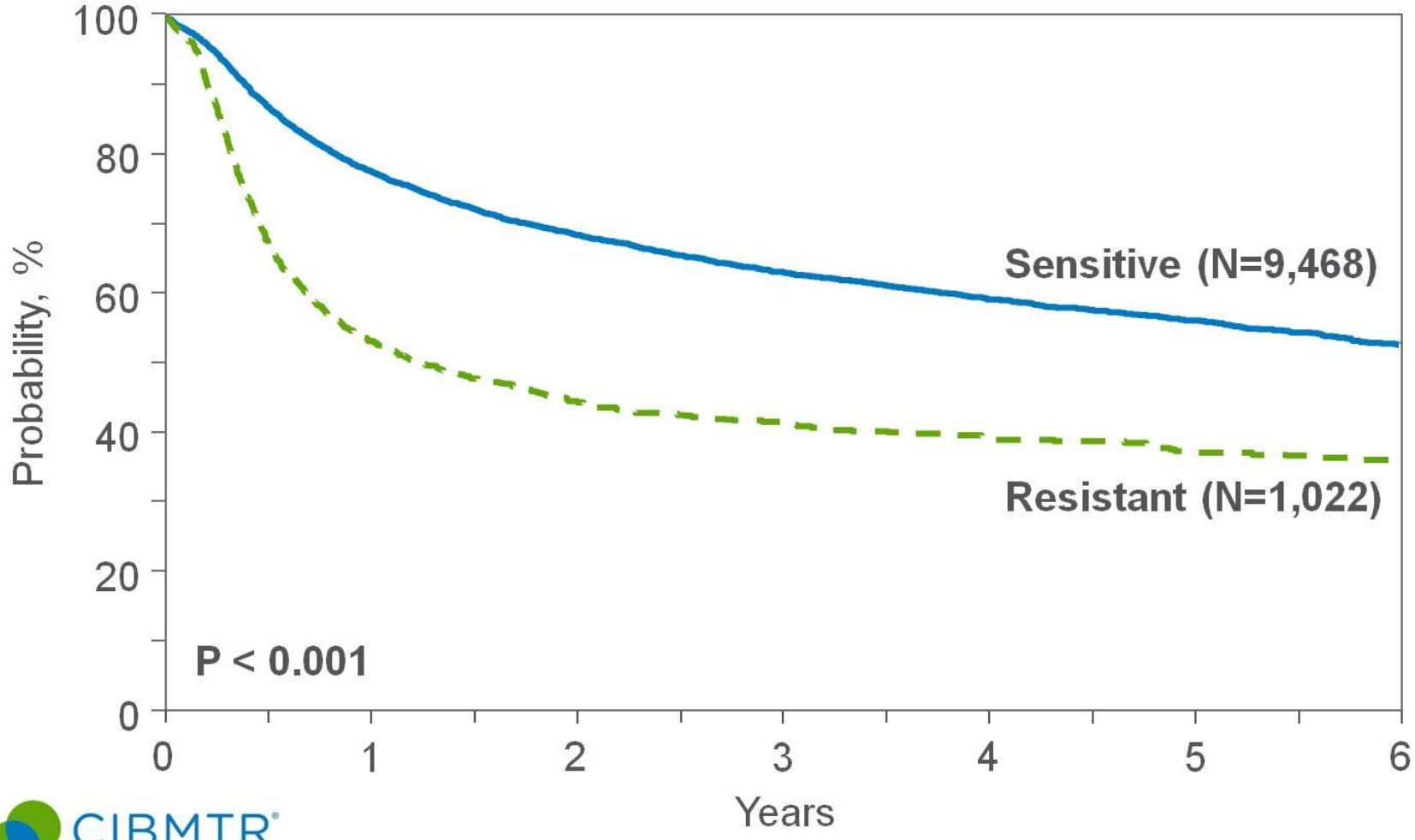
By Disease Status

Survival after Autologous Transplants for Diffuse Large B-Cell Lymphoma, 2001-2010



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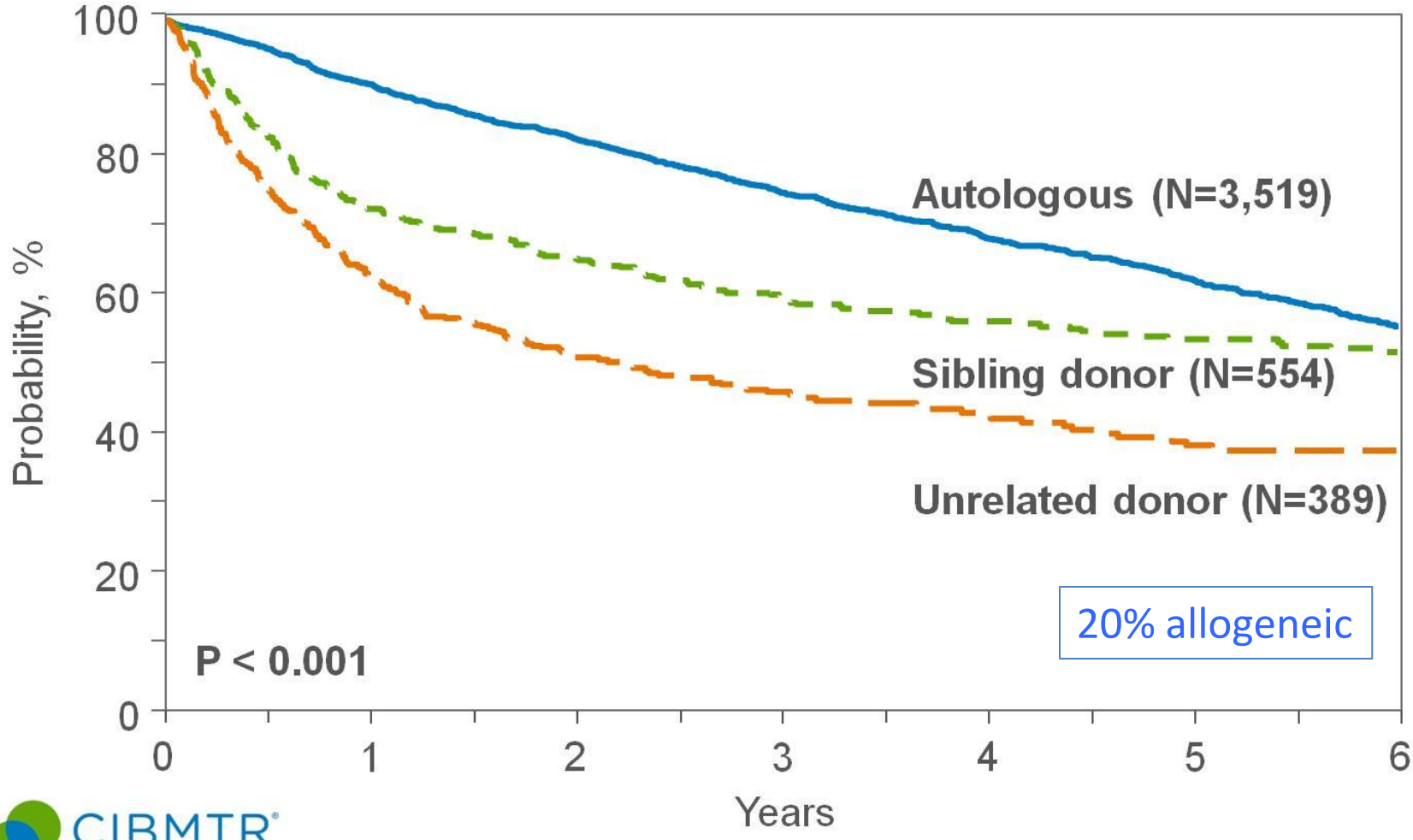
By Disease Status

Survival after Transplants for Mantle Cell Lymphoma, 2001-2011



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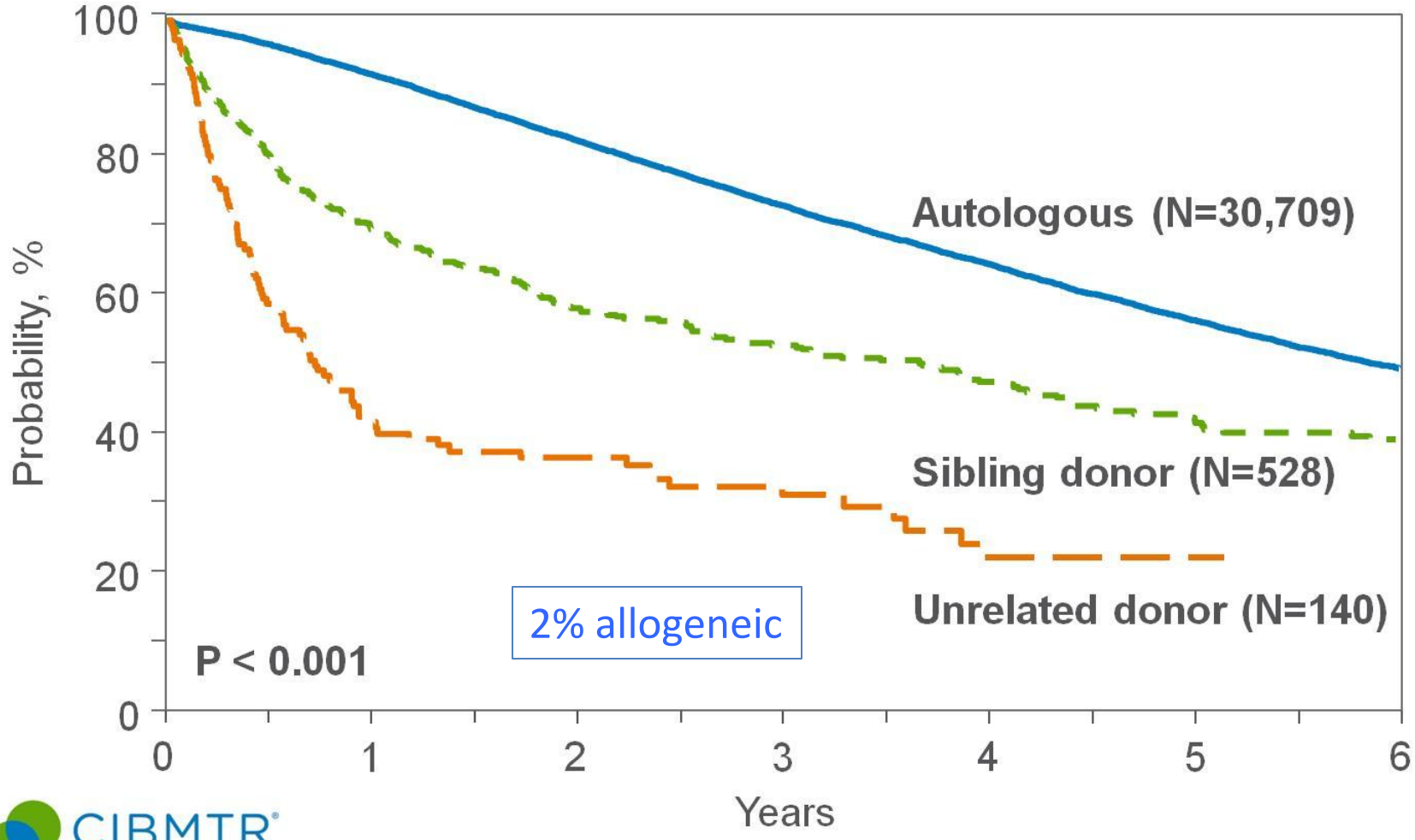
By Donor Type

Survival after Transplants for Multiple Myeloma, 2001-2011



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By Donor Type

Choosing Applications for HCT

Population needs

Center experience

Donor or graft availability

Resources

Likelihood of Survival