

### Activity Survey 2022: CAR-T activity continues to grow; transplant activity has slowed

#### Patient and Transplant Numbers (adult + pediatric HCT)

N Centers: 689	Participating countries: 54		
	Allogeneic	Autologous	Total
<b>No. patients with 1<sup>st</sup> HCT</b>	<b>17 862</b>	<b>23 992</b>	<b>41 854</b>
Re/Additional transplants	1 149	3 140	4 289
<b>Total HCT</b>	<b>19 011</b>	<b>27 132</b>	<b>46 143</b>
<b>Myeloablative HCT</b>	<b>59%</b>		
Main Indication 1 <sup>st</sup> HCT			
Myeloid malignancies	10 433	208	10 641
Lymphoid malignancies	4 674	21 638	26 312
Solid tumours	28	1 593	1 621
Bone marrow failure	1 065	0	1 065
Other non-malignant disorders	1 507	478	1 985
Other	155	75	230
Myeloid malignancies			
AML 1 <sup>st</sup> . CR	4 181	169	4 350
not 1 <sup>st</sup> . CR	1 640	33	1 673
AML: therapy or MDS related	1 140	4	1 144
CML 1 <sup>st</sup> . cP	164	0	164
not 1 <sup>st</sup> . cP	167	0	167
MDS or MDS/MPN, MPN	3 141	2	3 143
Lymphoid malignancies			
ALL 1 <sup>st</sup> . CR	1 884	39	1 923
not 1 <sup>st</sup> . CR	1 167	1	1 168
CLL	157	7	164
Plasma cell disorders	187	13 694	13 881
Hodgkin lymphoma	348	2 218	2 566
Non-Hodgkin lymphoma	931	5 679	6 610
Solid tumours			
Neuroblastoma	25	546	571
Soft tissue sarcoma/Ewing	1	232	233
Germ cell tumour	1	428	429
Other solid tumour	1	387	388
Non malignant disorders			
Bone marrow failure - SAA	787	0	787
Bone marrow failure - other	278	0	278
Thalassemia	356	8	364
Sickle cell disease	333	2	335
Primary immune deficiency	636	4	640
Inherited disorder of metabolism	153	0	153
Auto immune disease	29	464	493
Others	155	75	230

Pediatric HCT																	
Family						Unrelated				Autologous							
HLA-id/twin		Haplo-id		Other relative		BM		PB		CB		BM		PB		CB	
991	400	17	312	506	81	72	1	699	913	138	23	1 297	2				
2 380						1 750				1 322							

Pediatric HCT: N= 5 452: 4 130 allogeneic (+2.5%), 1 322 auto (-6.2%).  
 Allogeneic cell source: BM: 2 083 (34% unrelated), PBSC: 1891 (48% unrelated), CB: 156 (88% unrelated)

Un-manipulated DLI: N= 2 854; graft enhancement/failure: 804; residual disease: 393; relapse: 1 294; per protocol: 363  
 Non HCT cellular therapies using manipulated or selected cells:  
 N= 4 329 reported by 289 centers in 32 countries.  
 CAR-T: 3 205, MSC: 355, selected/exp T cells: 287, other CT: 284,  
 NK: 50, genetically mod. T cells: 39, TREGS: 34, genetically mod. CD34+ cells: 28, dendritic: 25, exp. CD34+ cells: 22

#### Main trends observed in the numbers of HCT reported in 2022.

- Transplant activity decreases again after the increase observed in 2021 post pandemic.
- Numbers declined across many indications and donor type suggesting a general rather than a disease specific cause.
- Allogeneic HCT: -4.0% (+5.4% in 2021), autologous HCT: -1.7% (+3.9% in 2021).
- Donor choice showed continued trend moving away from HLA-identical family donors and possibly haplo-identical donors, while the use of unrelated donors seems to have stabilized.
- Use of sibling donors decreased by -7.7%, haploidentical donors by -6.3% and unrelated donors by -0.9%.
- Overall cord blood HCT decreased by -16% (N= 273 in 2022, 325 in 2021).
- Decrease in allogeneic and autologous HCT activity in lymphoid malignancies may be attributed to new therapeutic options available, i.e., small molecules, monoclonal antibodies, bispecific antibodies and most notably, CAR-T cells.
- Overall, after many years of continuous growth application for HCT seems to have slowed down

Figure 1: Number of patients receiving allogeneic or autologous HCT: 1990 to 2022.

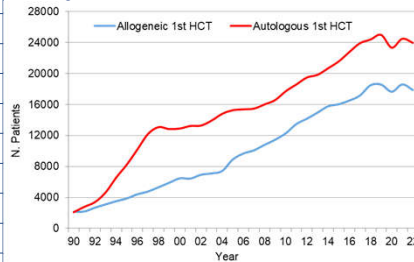


Figure 2: Change in choice of donor (1<sup>st</sup> HCT): 1990 to 2022

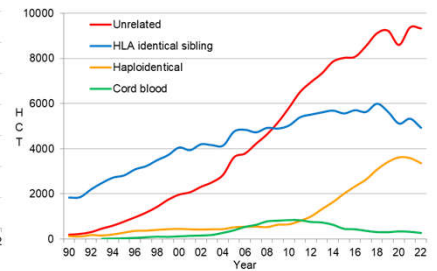
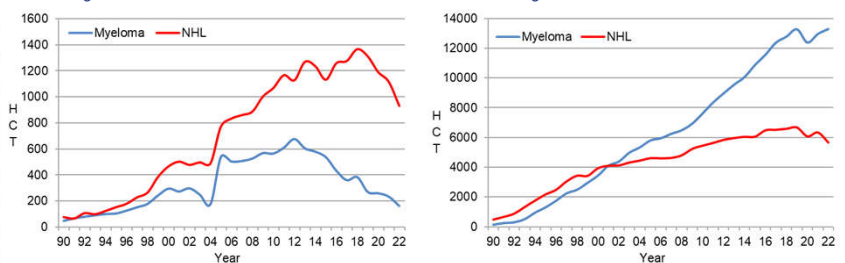


Figure 3: Number of HCT for Myeloma and NHL from 1990 to 2022:



#### CAR-T Cellular therapies 2018 to 2022

- Continued increase in the use of CAR-T therapy despite the SAR-CoV2 pandemic: 2018 n=301 to 2022 n=3 205: total 9 039
- Higher CAR-T therapy rates reported in countries with high GNI.
- 2022: N=3 205, reported by 214 centres in 28 countries.
- Lymphoma (n=2259; 70.5%), myeloma (n=470; 14.7%), ALL (n=380; 11.8%), and other malignancies (n=96; 3.0%)
- Main increase by disease is myeloma/others, increasing from 56 in 2019 to 566 in 2022, followed by NHL, increasing from 826 to 2 259 and ALL, increasing from 252 to 380.
- Median number of patients receiving CAR-T therapy by country was 28 (range 1-221) and median CAR-T rate per 10 mil population was 33.1

Fig 4: No. patients receiving CAR-T therapy by indication in Europe 2019 – 2022

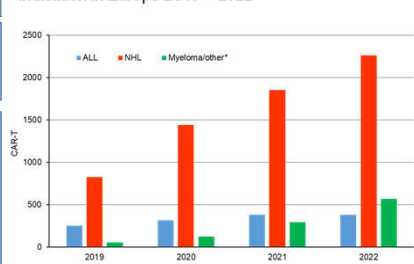


Fig 5: CAR-T therapy rates per 10 million population in 2022

