



Worldwide hematopoietic cell transplantation activity survey

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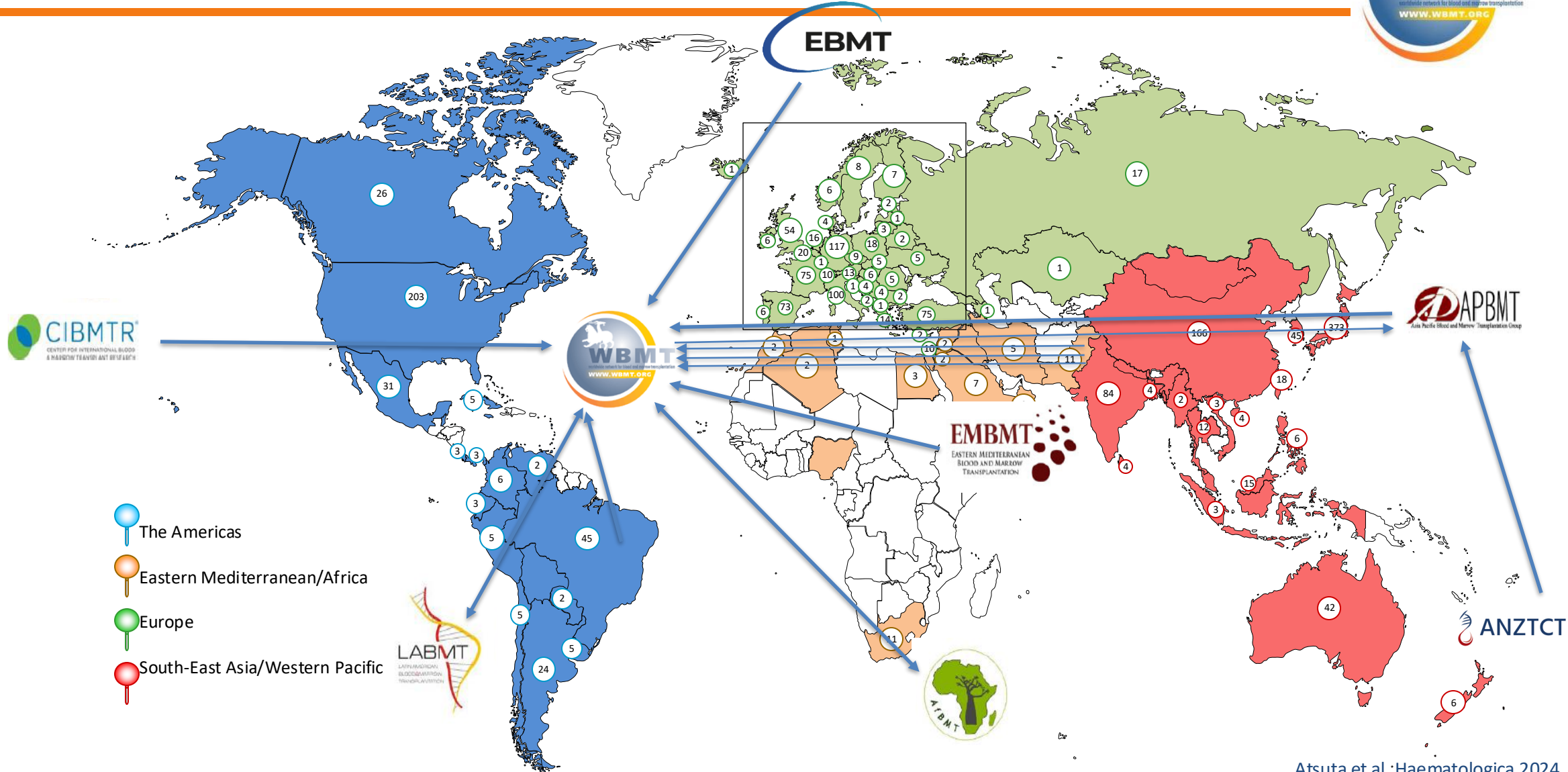


*Worldwide Network for Blood and Marrow Transplantation
NGO in official relations with World Health Organization*



HCT worldwide 2018

1768 HCT centers from 94 countries



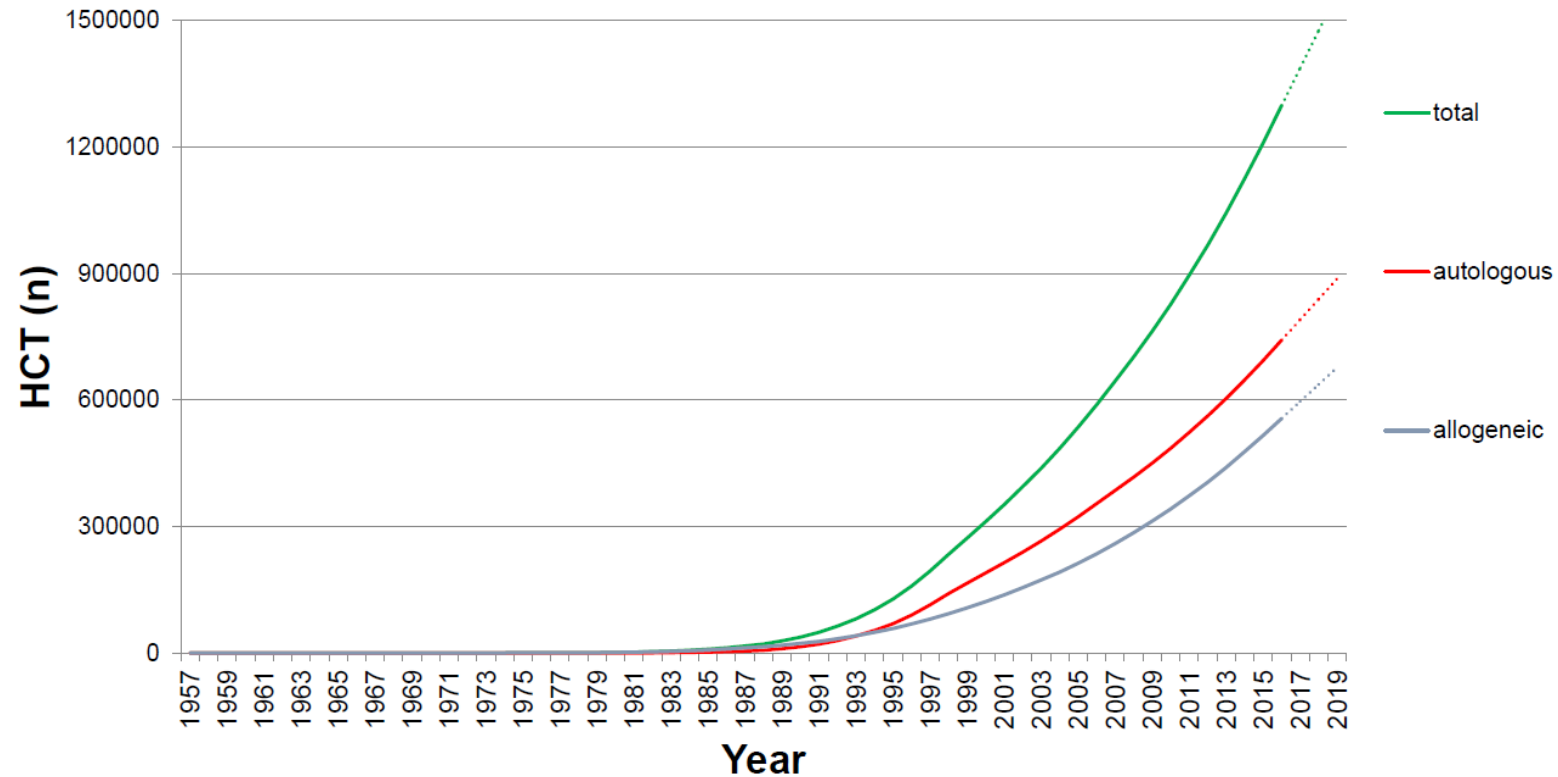
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Worldwide Network for Blood and Marrow Transplantation
 NGO in official relations with World Health Organization

Worldwide HCT activity since 1957

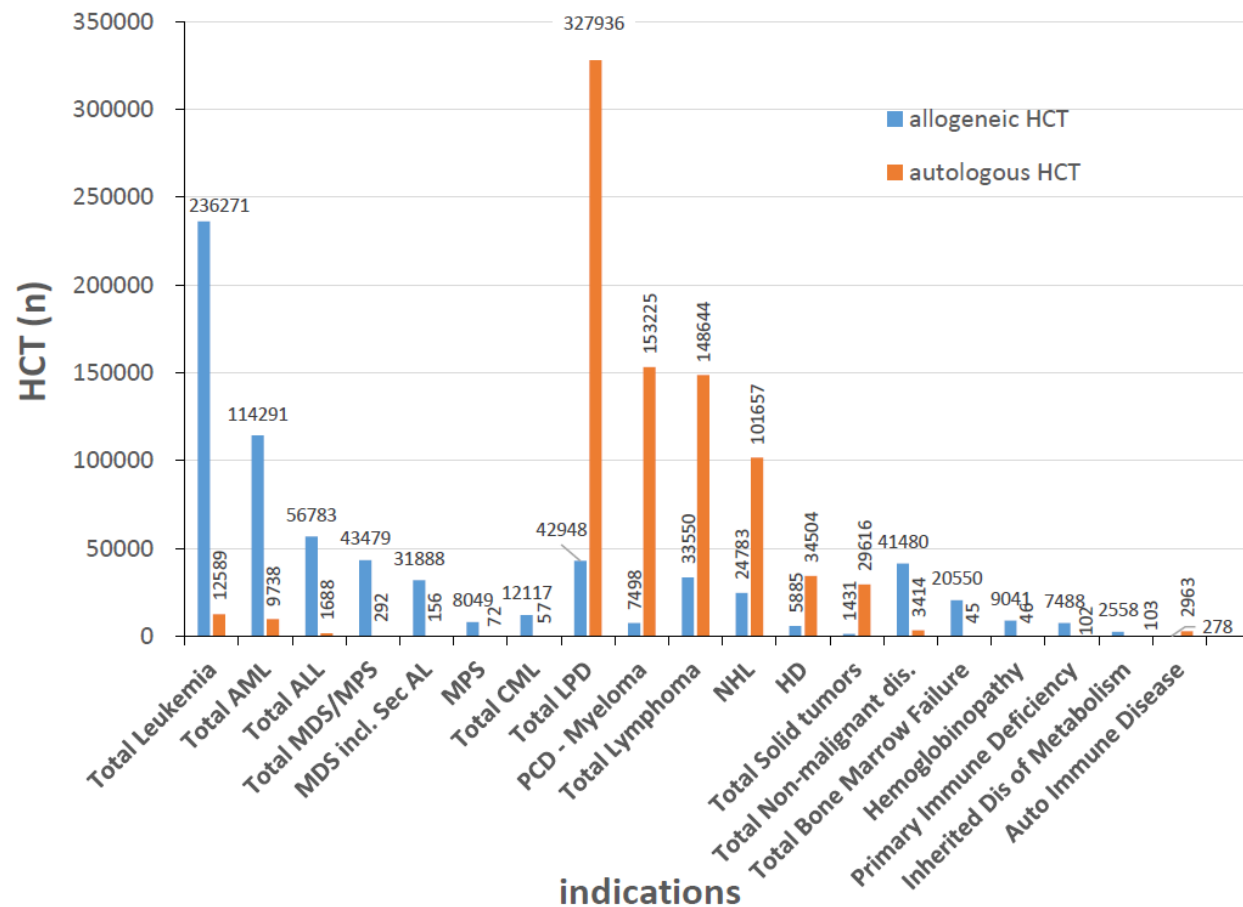


suppl. Figure S1

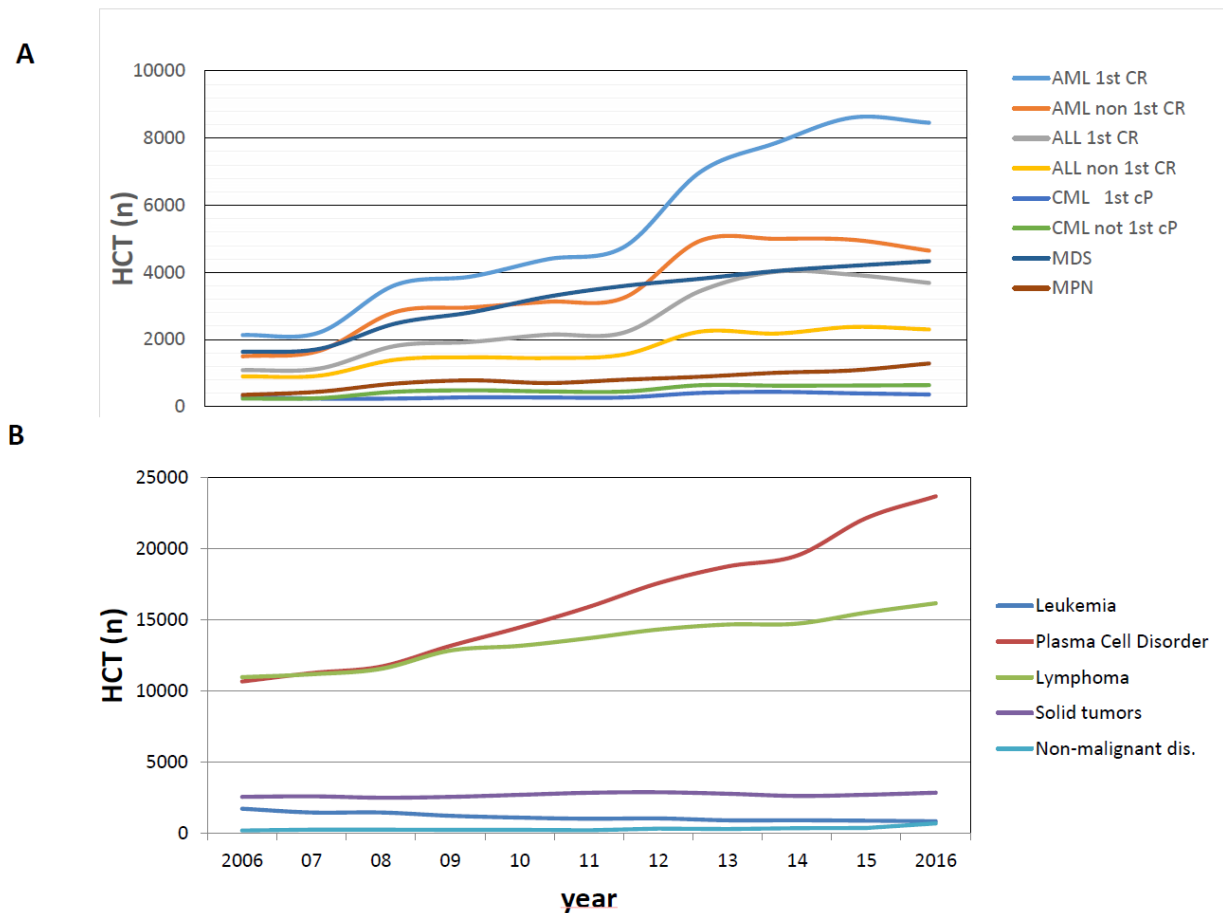


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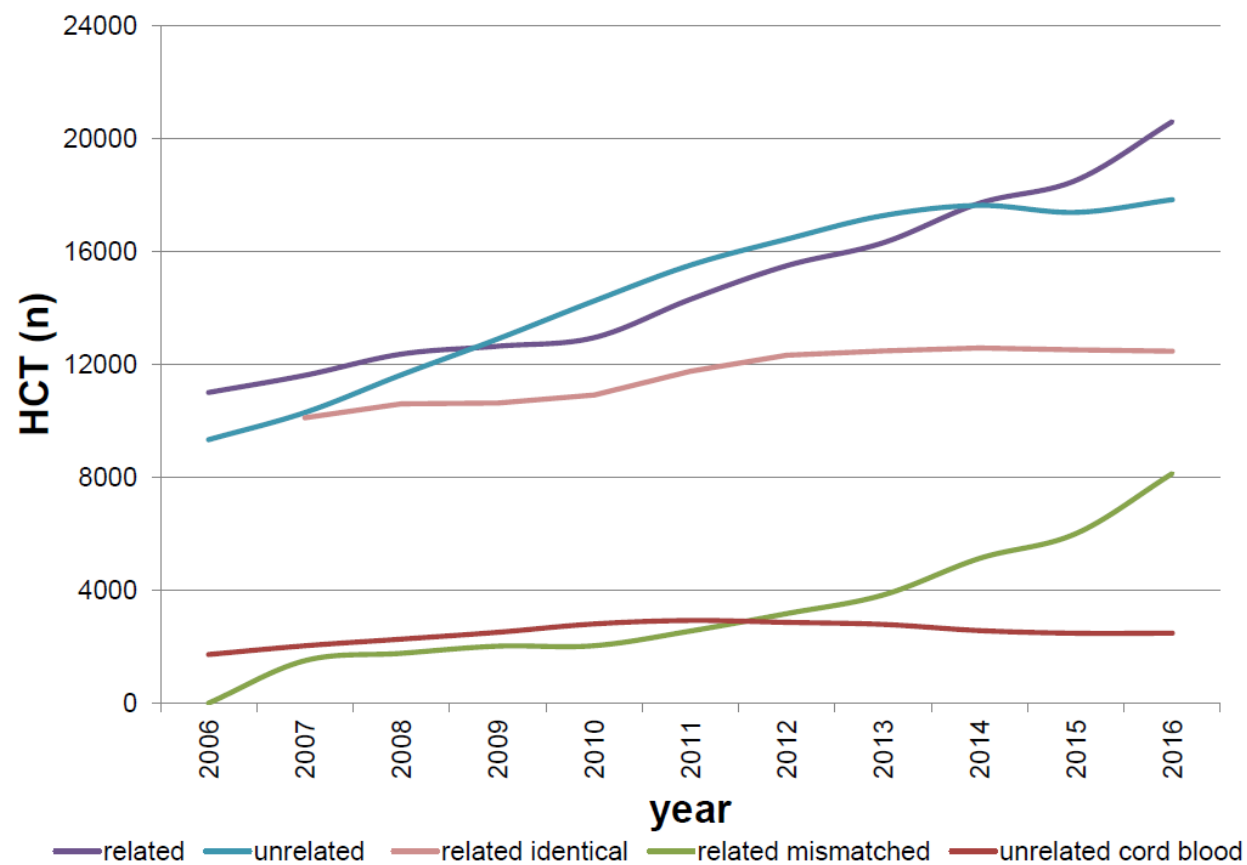
suppl. Figure S2



Suppl. Figure S4



suppl. Figure S5

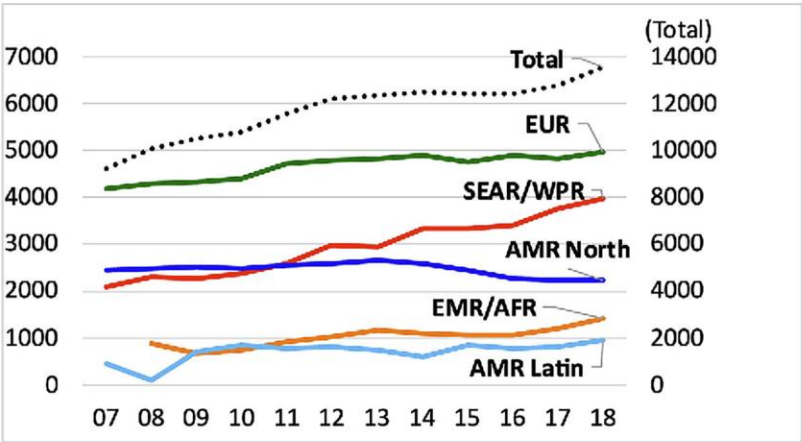


Important trends to watch

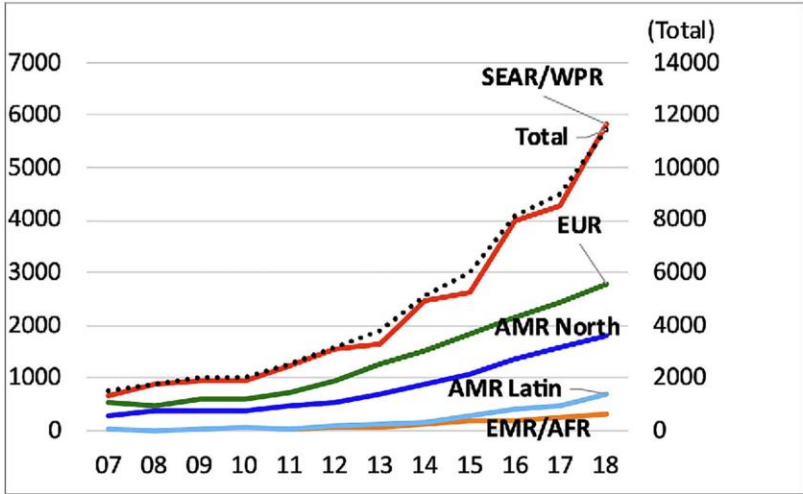


Figure 3. Trend of the numbers of allogeneic HCT from HLA-identical sibling donors, other related donors, or unrelated donors by World health Organization regions. (A) Allogeneic HCT from (HLA)-identical siblings has seen limited growth from 2007 to 2018. (B) HCT from other related donors increased from 2007 to 2018 in all regions. (C) Trend of HCT from unrelated donors differed among regions. (D) The global trend of unrelated cord blood transplantation showed decrease since 2011 in all regions except South-East Asian region and Western Pacific region (SEAR/WPR).

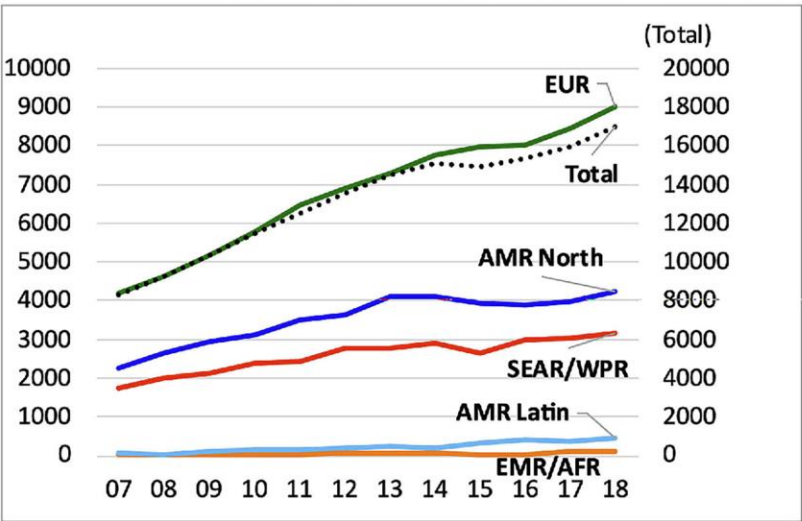
A



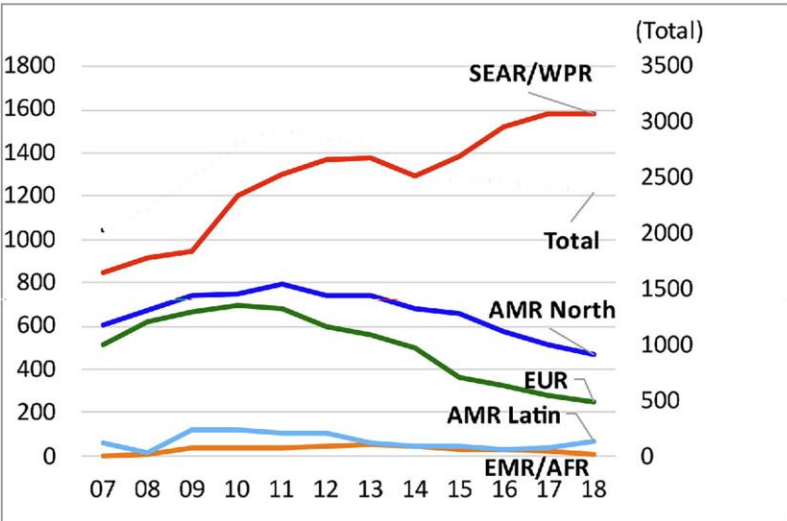
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C

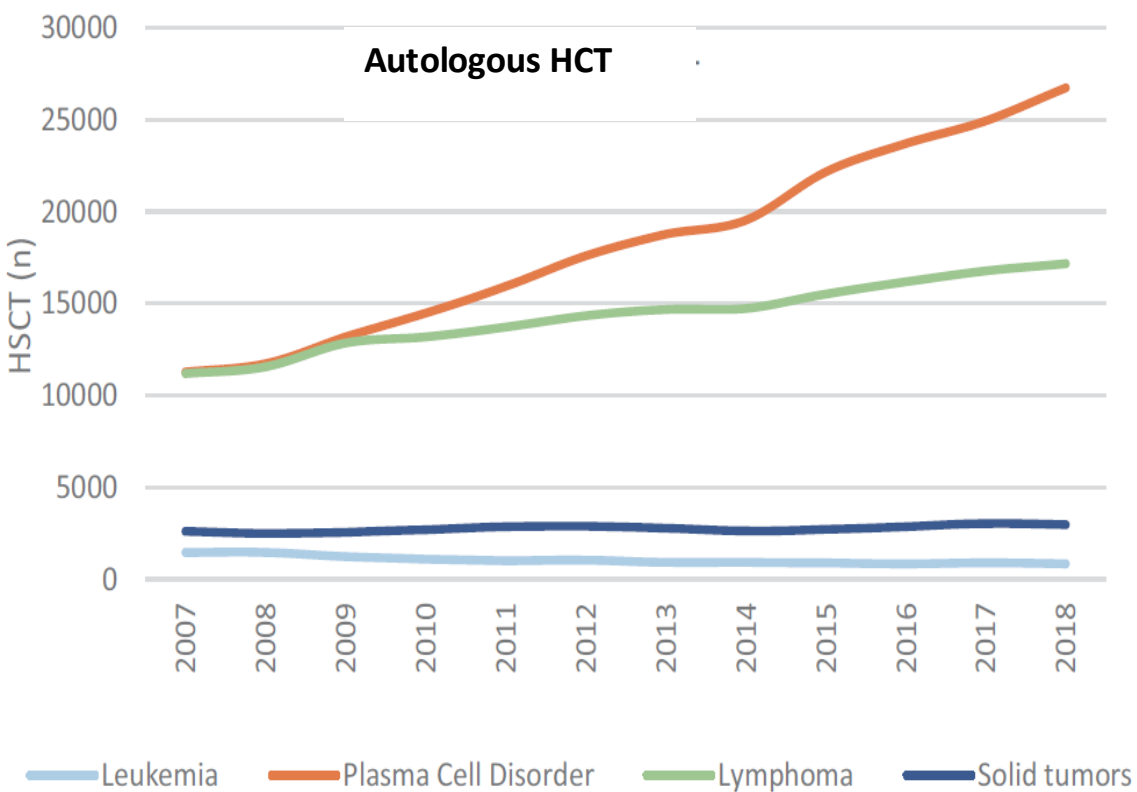
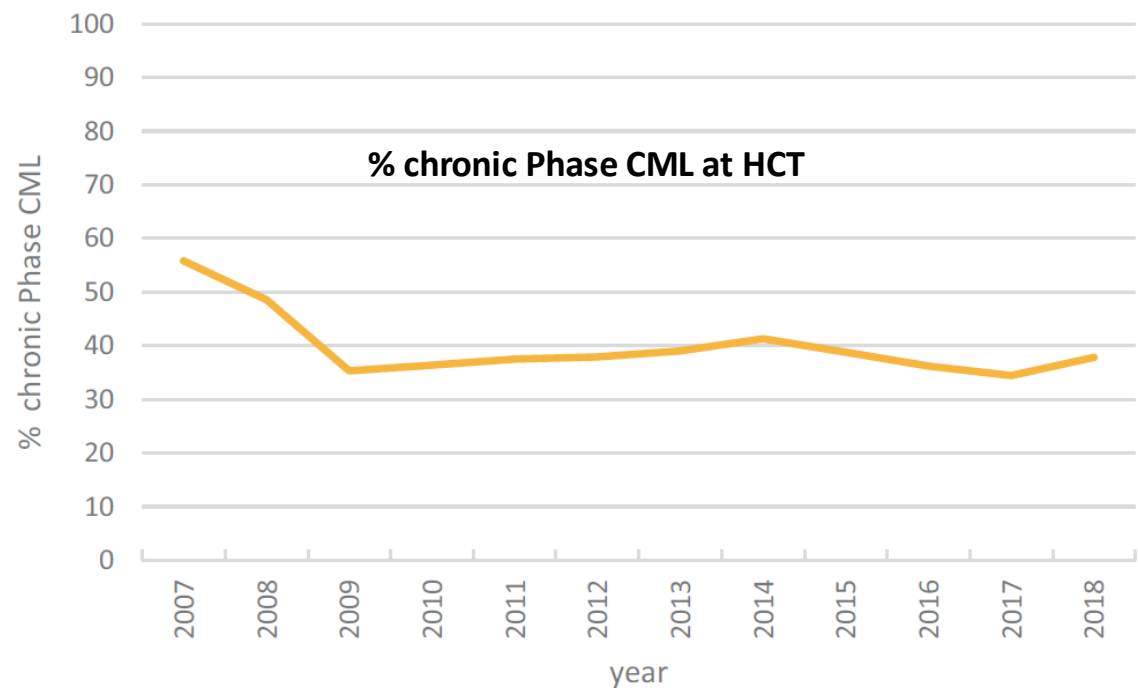


D



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Important trends to watch



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Transplant rate (TR) by world region and HCT type (2007 - 2018)

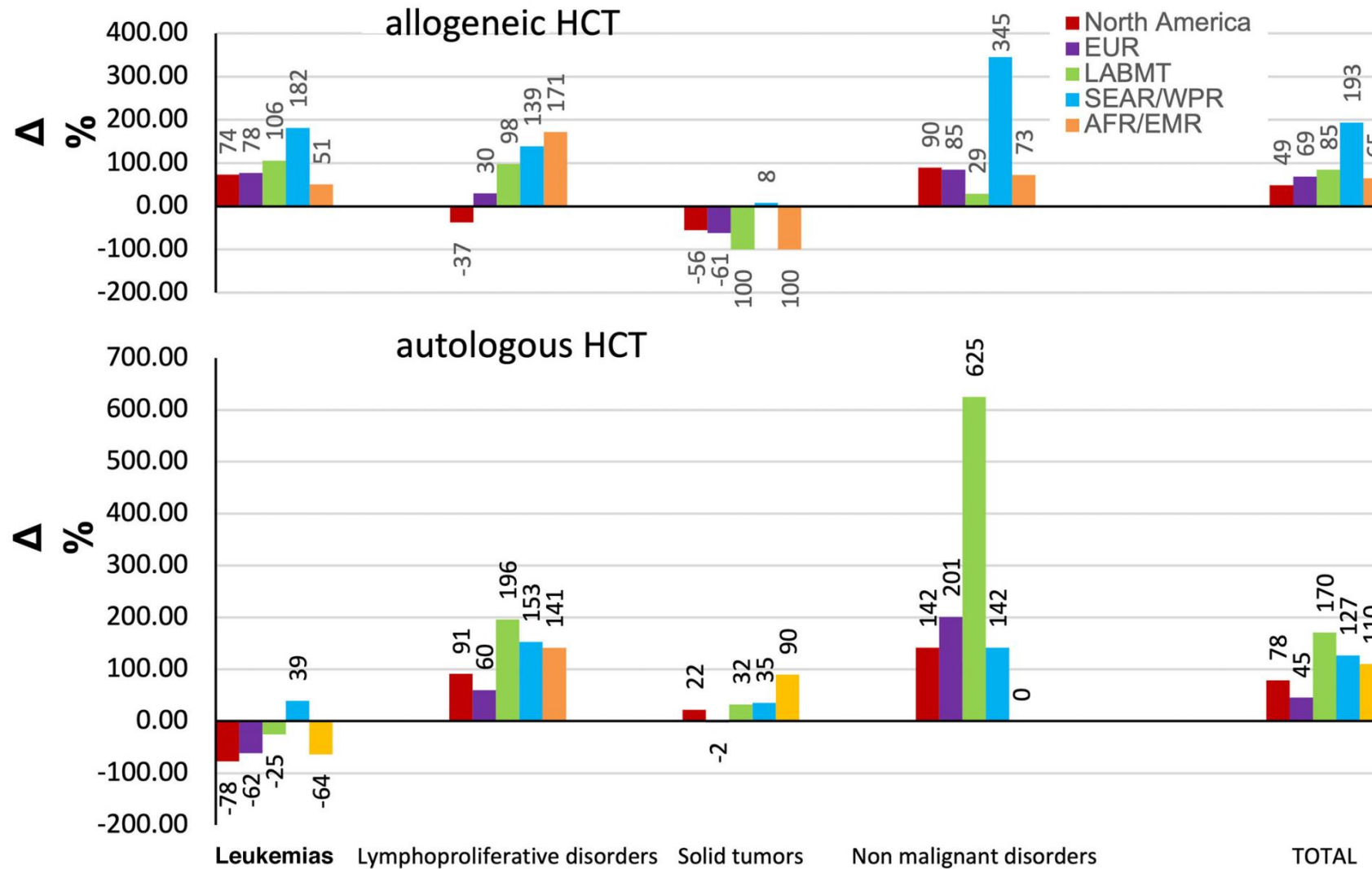


Indications	Autologous HCT							Allogeneic HCT							HCT	
	2018						2007	2018						2007	2018	2007
	EUR	EMR AFR	SEAR WPR	AMR North	AMR Latin	Total	Total	EUR	EMR AFR	SEAR WPR	AMR North	AMR Latin	Total	Total	Total	Total
Malignant disease																
Acute myeloid leukemia	273	20	254	30	45	622	1,081	6,472	533	5,302	3,417	586	16,310	7,359	16,932	8,440
Acute lymphoblastic leukemia	68	6	67	11	13	165	177	2,695	315	3,125	1,416	720	8,271	4,038	8,436	4,215
Chronic myeloid leukemia	0	0	1	0	0	1	8	339	46	280	246	99	1,010	1,142	1,011	1,150
MDS/MPN	1	0	3	1	1	6	45	2,988	103	1,858	1,792	206	6,947	2,569	6,953	2,614
Chronic lymphocytic leukemia	10	0	2	8	0	20	115	189	3	31	125	15	363	614	383	729
Other leukemia	0	0	6	7	7	20	35	0	1	208	113	22	344	164	364	199
Plasma cell disorder	12,582	699	3,793	8,114	1,565	26,753	11,267	403	13	94	52	4	566	828	27,319	12,095
Lymphoma	8,279	588	3,389	3,778	1,134	17,168	11,182	1,724	74	877	515	130	3,320	2,387	20,488	13,569
Solid tumors	1,468	135	476	668	232	2,979	2,600	42	5	49	5	7	108	119	3,087	2,719
Non-malignant disease																
Bone marrow failure	5	0	0	0	2	7	2	791	273	1,623	338	251	3,276	1,310	3,283	1,312
Hemoglobinopathy	8	0	2	7	0	17	3	448	283	747	329	20	1,827	425	1,844	428
Primary immune deficiency	7	0	0	13	1	21	5	601	110	179	261	75	1,226	479	1,247	484
Inherited disease of metabolism	6	0	27	6	0	39	5	182	23	81	65	8	359	161	398	166
Autoimmune disease	546	5	54	27	159	791	214	17	3	7	10	1	38	21	829	235
Other non-malignant disease	0	0	1	0	4	5	27	0	6	82	82	16	186	147	191	174
Other disease	19	2	36	9	0	66	39	140	57	44	21	12	274	141	340	180
Totale	23,272	1,455	8,111	12,679	3,163	48,680	26,805	17,031	1,848	14,587	8,787	2,172	44,425	21,904	93,105	48,709

HCT: hematopoietic cell transplantation; MDS: myelodysplastic syndromes; MPN: myeloproliferative neoplasms; EUR: European region; EMR: Eastern Mediterranean region; AFR: African region; SEAR: South-East Asian region; WPR: Western Pacific region; AMR: region of Americas.

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Percentage in-/decrease of Hematopoietic Cell Transplantation activity by indication and region (2007 - 2016)



Transplant rate (TR) by world region and HCT type (2016)



region	Hematopoietic cell transplantation (HCT)		
	allogeneic	autologous	Total
USA/Canada	227	334	561
Europe	181	258	439
LABMT	30	47	77
Asia Pacific	34	20	54
Eastern Mediterranean	22	14	36
Africa	5	5	9

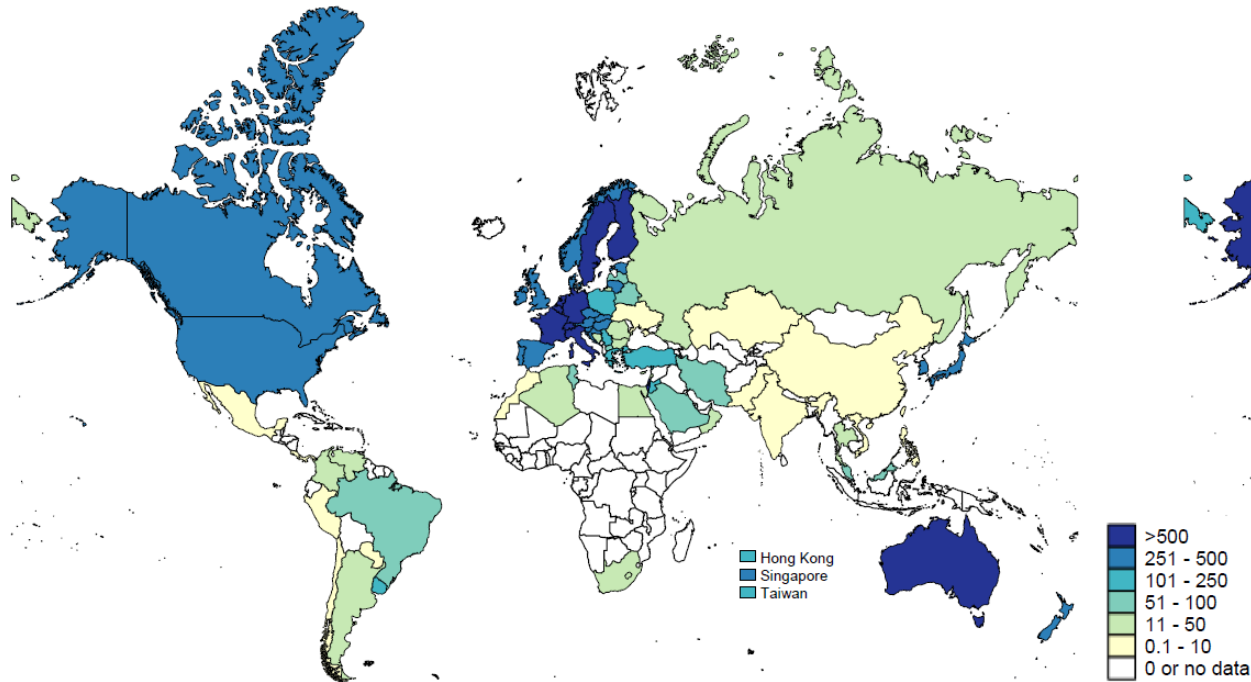
TR, HCT / 10 million population

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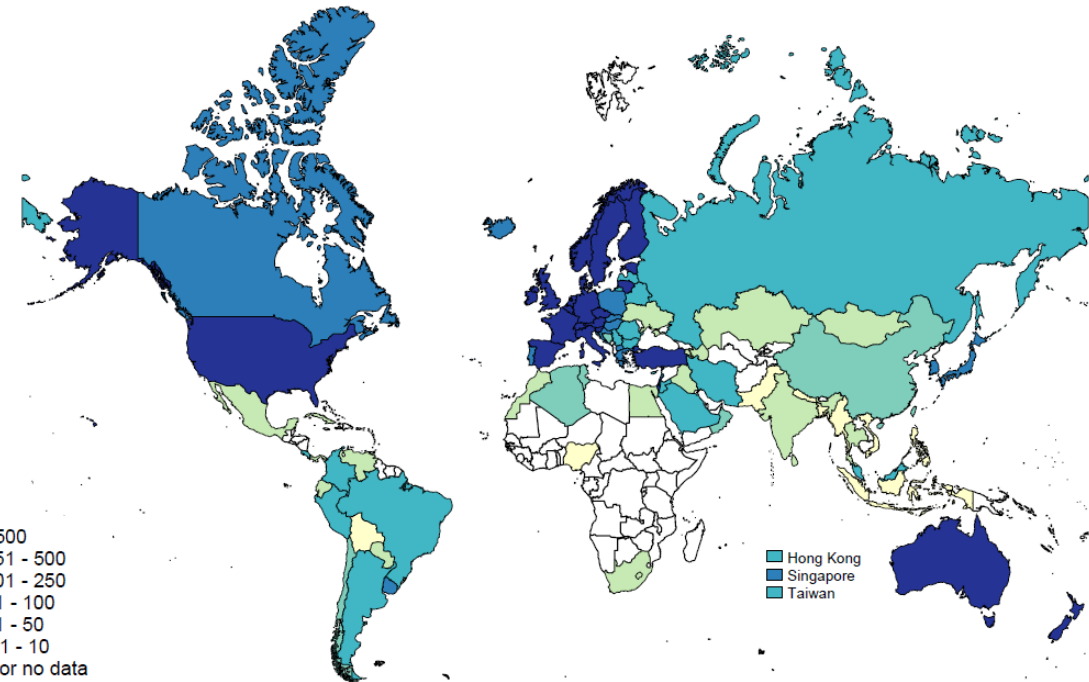
Total HCT by world region and year



2007

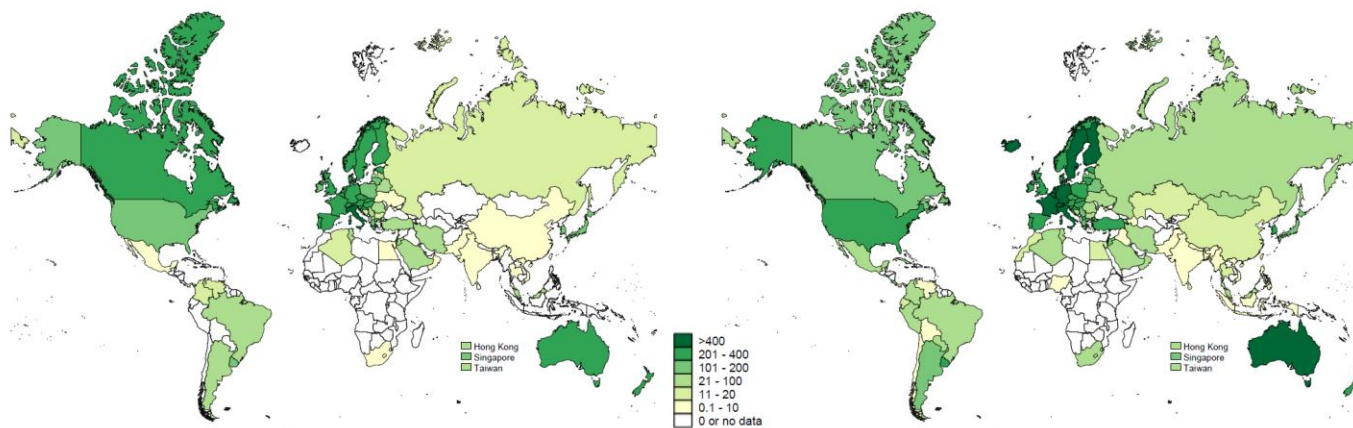


2018

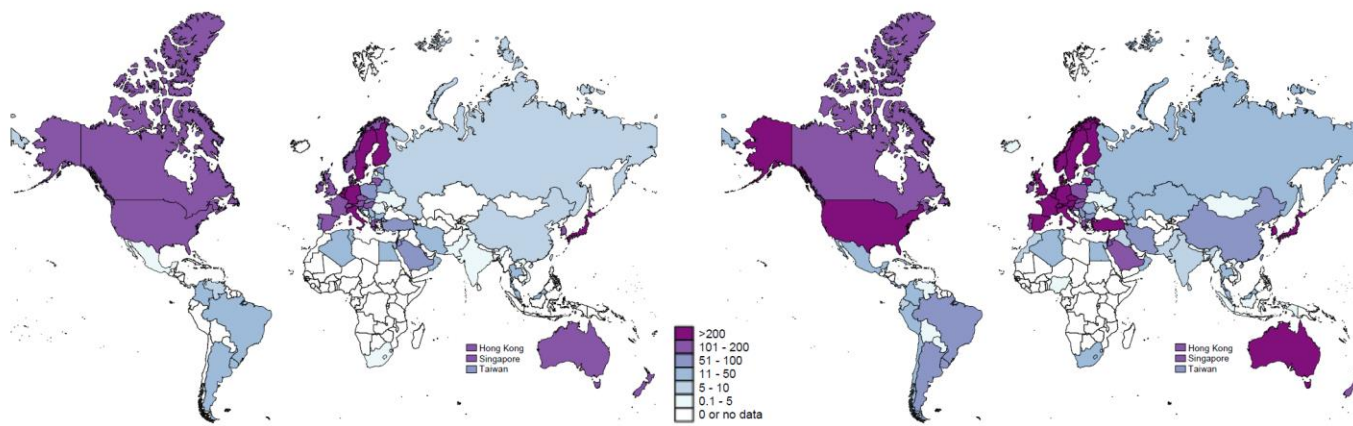


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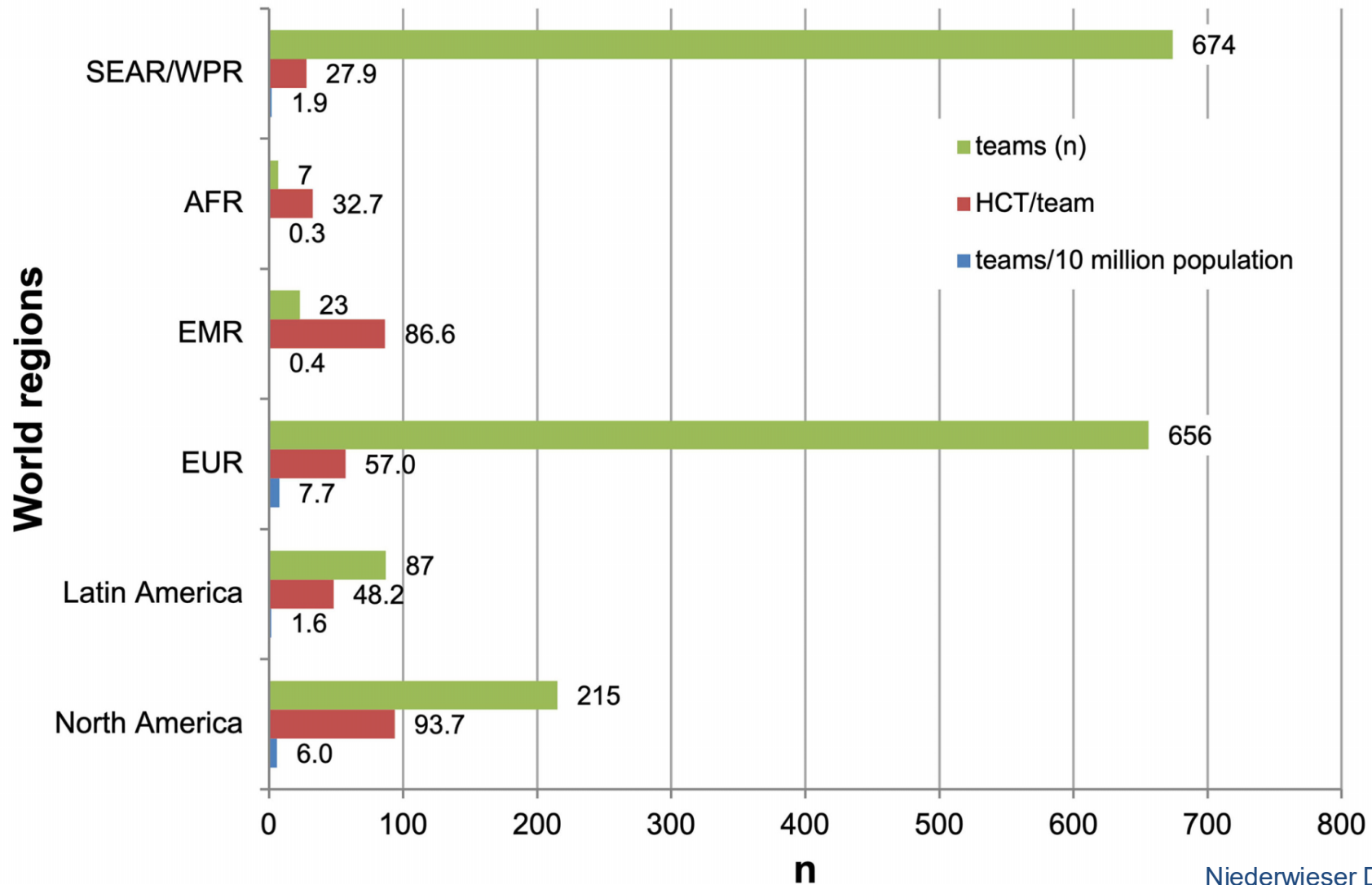
B. Autologous HCT in 2007 (left) and 2018 (right)



C. Allogeneic HCT in 2007 (left) and 2018 (right)



Number of Teams, HCT/teams and teams/10 milion population



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Most recent completed survey (2018)



- 1768 reporting centres (+33%) from 89 countries.
- 93105 total HCT (+99% from 2017)
- 44425 allogeneic (+118% from 2017)
 - 25059 family donors
 - 11461 haploidentical donors (46%)
 - 19366 unrelated donors
- 48680 autologous (+86% from 2017)
- Total 2006-2018: 408,611 allogeneic (46%)
469,272 autologous
877,883 total HCT

Based on quality controls and contacts with regulatory agencies or national offices, the response rate for allogeneic HCT was estimated to be >95% and for autologous HCT 80–90%.

2019 onwards.....



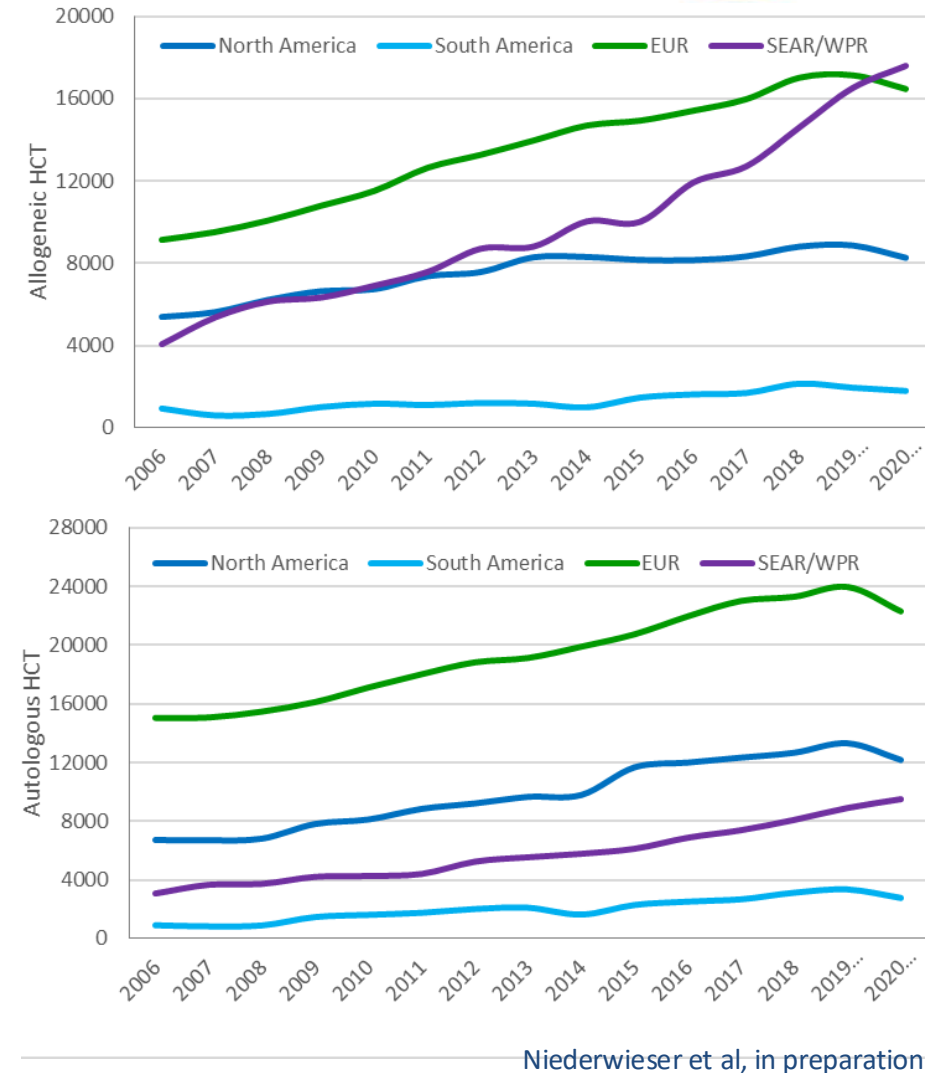
•2019-2020: preliminary data

- Ca. 90% reported
- 2019: 94 529 total HCT: 44 746 allogeneic, 49 783 autologous
- 2020: 91 273 total HCT: 44 272 allogeneic, 47 001 autologous

Difference: -3256 HCT: -474 allogeneic, -2782 autologous

•Trends observed 2006-2020

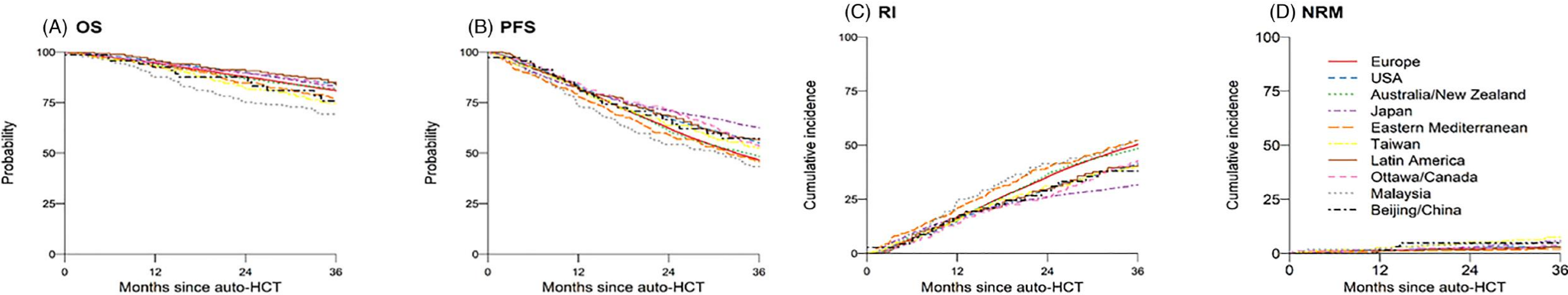
- Continued increase in all regions in the numbers of transplants reported for both allogeneic and autologous HCT until 2019
- SARS-CoV-2 pandemic: clear drop in activity in most regions: exception SEAR/WPR.



Niederwieser et al, in preparation

WBMT outcome analysis with help of member registries

n=61797



	Months since auto-HCT					Months since auto-HCT			
Europe:37459	25066	19611	14251		Europe: 35614	21286	13637	8077	
USA:16217	15306	13886	11177		USA: 16201	13362	10427	7212	
Australia/New Zealand:3164	2666	2072	1648	Australia/New Zealand: 2082	1661	1101	752		
Japan:3122	2715	2359	1787	Japan: 2758	2070	1647	1134		
Eastern Mediterranean: 543	381	307	207	Eastern Mediterranean: 504	310	211	124		
Taiwan: 524	349	189	120	Taiwan: 518	302	140	82		
Latin America: 339	308	284	255	Latin America: 290	230	188	151		
Ottawa/Canada: 188	161	149	130	Ottawa/Canada: 164	139	116	87		
Malaysia: 169	148	127	116	Malaysia: 164	120	89	71		
Beijing/China: 72	58	40	25	Beijing/China: 70	53	30	16		

