

SPECIAL REPORT

The EBMT activity survey 2006 on hematopoietic stem cell transplantation: focus on the use of cord blood products

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This report describes the hematopoietic stem cell transplantation (HSCT) activity in Europe in 2006 by indication, donor type and stem cell source. It illustrates differences compared to previous years and concentrates on the use of cord blood transplants. In 2006, there were 25 050 first HSCT, 9661 allogeneic (39%), 15 389 autologous (61%) and 3690 additional re- or multiple transplants reported from 605 centers in 43 participating countries. Main indications were leukemias (7963 (32%; 85% allogeneic)); lymphomas (14 169 (56%; 89% autologous)); solid tumors (1564 (6%; 95% autologous)); non-malignant disorders (1242 (5%; 90% allogeneic)) and non-classified 'others' (112 (1%)). There was an increase in allogeneic HSCT of 9% when compared to 2005, while autologous HSCT numbers remained similar. There were 544 allogeneic cord blood HSCT, which corresponds to 5% of all allogeneic HSCT. The majority, 67%, were used for patients with leukemia. The highest percentage of cord blood transplants, 27%, was seen for inherited disorders of metabolism. No autologous cord blood transplants were reported. The highest increase in allogeneic HSCT was observed for AML, which comprises 31% of all allogeneic HSCT. Numbers of autologous HSCT remained similar in most main indications. This data provide an update of the current HSCT experience in Europe.

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Introduction

In 1990, the European Group for Blood and Marrow Transplantation (EBMT) introduced the activity survey as a novel instrument to capture comprehensive information on transplant numbers and to distribute this information rapidly.¹ All EBMT members and affiliated teams report since then on an annual basis their number of patients transplanted by indication, stem cell source and donor type. By now, it has evolved as a mandatory self-reporting system and forms an integral part of the comprehensive quality assurance program Joint Accreditation Committee of the ISCT and EBMT (JACIE) (<http://www.JACIE.org>). It provides the basis for counseling on the individual patient level as well as for health-care institutions and administrative agencies in the field of stem cell transplantation.²

Besides a report of the data from the past years, the activity survey has focused each year on a different aspect of hematopoietic stem cell transplantation (HSCT). This includes the description of trends, the introduction of new techniques or the changes in techniques as well as the analysis of economic factors related to HSCT.^{3–6} In 2006, the focus was on the use of cord blood as stem cell source.⁷ The first report of a successful cord blood transplant for a patient with Fanconi's anemia gave the basis for the building of cord blood banks all over the world.⁸ By 2007, nearly 300 000 cord blood products are available for use together with the more than 11 million unrelated donors from the 75 stem cell donor registries worldwide (www.bmdw.org). Carefully conducted retrospective analyses have confirmed the value of cord blood transplants under well-defined conditions compared to other family donor transplants or unrelated transplants.^{9–15} The present report gives now most recent information on the use of cord blood transplants in Europe in 2006 within the context and in comparison with other stem cell sources.

Patients and methods

Data collection and validation

Participating teams reported their data for 2006 by indication, stem cell source and donor type as listed in

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Table 1. Data were validated by three independent systems: through confirmation by the reporting team, which received a computer printout of the entered data; by selective comparison with MED-A data sets in the ProMISE data capture system of the EBMT (www.msbi.nl/Promise) and by cross-checking with national registries where they exist. Onsite visits of selected teams were part of the quality control program (www.jacie.org).

Teams

In total, 615 active transplanting teams in 43 countries (38 European and 5 affiliated countries) were contacted for the 2006 report, of which 605 reported their numbers. This corresponds to a 98% return rate of active teams and includes 498 active EBMT member teams reporting to the survey. Ten teams known by the investigators to have been performing HSCT in 2006 were also contacted, but chose not to reply or, for unknown reasons, failed to reply in spite of several efforts to reach them. No major transplant team in Europe is missing from this list. All contacted teams are listed in the Appendix in alphabetical order according to country, city and EBMT center code. We received information that in 2006 no blood or marrow transplants were performed in the following European countries: Albania, Andorra, Armenia, Georgia, Liechtenstein, Malta, Moldavia, Monaco, San Marino and The Vatican. Non-European countries include, by EBMT tradition, Algeria, Iran, Israel, Saudi Arabia, South Africa and Tunisia. Their data are in part included in some of the analyses.

Definitions

Transplant numbers. The EBMT survey focused, as in previous years, on the number of patients treated for the first time with HSCT. Information on additional transplants, for instance, a second, third or fourth HSCT in a patient with a previous HSCT was collected by disease category only for those patients with a planned double allogeneic after autologous transplants; for all other situations this information was collected generically only. The following definitions were used:¹⁶ *Re-transplants* (autologous or allogeneic) were defined as an unplanned HSCT for rejection or relapse after a first HSCT. *Multiple transplants* were defined as being part of a planned double or triple autologous or allogeneic transplant protocol. Information on stem cell source was collected as bone marrow, peripheral blood or cord blood. Combined bone marrow, peripheral blood and cord blood transplants were reported as peripheral blood HSCT. The possibility for reporting cord blood transplants by indication and donor type was introduced for the first time in this year's survey. Information on reduced intensity conditioning was collected as a total for each team only and not for individual transplants. Definitions for reduced intensity conditioning (RIC) HSCT followed the recently published definitions.

Transplant rates. Transplant rates were computed as number of HSCT per 10 million inhabitants as previously defined.² Transplant rates refer to the number of transplants in a given country compared to its own population. The survey cannot make adjustments for patients who cross

borders and receive their HSCT in a foreign country. Population data were obtained from the US census office (<http://www.census.gov>).

Economic factors. Economic factors considered in the analysis followed the previously defined rules. Countries were categorized by their gross national income per capita according to the World Bank definitions into high-income (Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Slovenia, Spain, Sweden, Switzerland and UK), middle-income (Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland and Slovakia) and low-income countries (Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Macedonia, Romania, Russia, Serbia and Montenegro, Ukraine and Turkey). The latter category refers to the World Bank definition of 'lower middle income' (<http://www.worldbank.org>) as previously used.

Non-European countries that traditionally participate in the EBMT activity survey (Algeria, Iran, Israel, Saudi Arabia, South Africa and Tunisia) are included in the overall data presentation. They were not included in the analysis on economic factors. The same applies to Iceland and Luxemburg, because of some missing data over the time span.

Results

Participating teams

Of the 605 teams reporting HSCT in 2006, 361 (60%) did both allogeneic and autologous transplants; 227 (37%) restricted their activity to autologous, 8 teams (1%) to allogeneic transplants only. Nine teams (2%) reported having performed no transplants in 2006.

In total, 211 teams (34%) did fewer than 20 HSCT in 2006, 210 teams (35%) between 20 and 50 HSCT, 132 teams (22%) between 50 and 100 HSCT and 52 teams (9%) > 100 HSCT.

In total, 136 teams reported at least one cord blood HSCT in 2006 and 23 teams reported > 5.

Number of HSCT in 2006

First transplants 2006. A total of 25 050 first transplants, 9661 (39%) allogeneic and 15 389 (61%) autologous were carried out in 2006 (Table 1). Overall, this corresponds to a slight increase in the number of HSCT compared to 2005, when there were 24 168 first transplants. Number of allogeneic HSCT increased by 9% from 8890 in 2005 to 9661 in 2006, while the number of autologous HSCT remained similar; 15 278 in 2005 and 15 389 in 2006.

Additional transplants 2006

There were 1557 re-transplants (772 allogeneic/785 autologous) and 2133 additional planned multiple transplants (71 allogeneic/2062 autologous). Thus, there were a total of 28 740 HSCT procedures; 10 504 allogeneic (37%) and 18 236 autologous (63%) transplants were performed in 2006. This corresponds to an overall increase of 93 re-transplants (74 allogeneic and 19 autologous) or 6% as

Table 1 Number of patients treated in Europe during the year 2006 with a first hematopoietic stem cell transplant listed by indication, donor type and stem cell source

	Donor source																	
	No. of patients																	
	Allogeneic									Autologous			Total					
	Family						Unrelated											
	HLA-id			Non-id			Twin						BM			Allogeneic		
	BM	PBPC	Cord	BM	PBPC	Cord	BM	PBPC	Cord	BM	PBPC	Cord	only	PBPC	Cord	Allogeneic	Autologous	Total
<i>Leukemias</i>	793	2449	14	46	300	2	5	23	646	2181	325	78	1101	0	6784	1179	7963	
Acute myeloid leukemia	275	1248	4	20	166		0	15	237	913	142	64	747	0	3020	811	3831	
First complete remission	198	834	2	8	48			10	111	379	54	49	632		1644	681	2325	
Not first complete remission	77	414	2	12	118			5	126	534	88	15	115		1376	130	1506	
Acute lymphatic leukemia	310	433	6	17	67	2	2	5	255	464	129	6	145	0	1690	151	1841	
First complete remission	189	271	3	5	17	2	1	2	125	249	56	3	93		920	96	1016	
Not first complete remission	121	162	3	12	50		1	3	130	215	73	3	52		770	55	825	
Chronic myeloid leukemia	99	237	0	3	16	0	0	2	57	196	10	0	13	0	620	13	633	
Chronic phase	73	163		2	4			2	40	87	2		4		373	4	377	
Not first chronic phase	26	74		1	12				17	109	8		9		247	9	256	
MDS including sec. AL	83	286	2		36		1	1	63	363	31	1	37		866	38	904	
MPS	21	93	2	5	10		2		24	130	7		9		294	9	303	
Chronic lymphatic leukemia	5	152		1	5				10	115	6	7	150		294	157	451	
<i>Lymphoproliferative disorders</i>	88	790	0	4	48	0	2	8	69	554	34	95	12 477	0	1597	12572	14 169	
Plasma cell disorders—MM	20	255		1	8		2	3	13	184	3	20	5918		489	5938	6427	
Plasma cell disorders—other	3	7		1						4		1	251		15	252	267	
Hodgkin's lymphoma	14	120		1	15				17	85	8	28	1742		260	1770	2030	
Non-Hodgkin's lymphoma	51	408		1	25			5	39	281	23	46	4566		833	4612	5445	
<i>Solid tumors</i>	13	29	2	1	22	0	3	0	4	10	1	77	1402	0	85	1479	1564	
Neuroblastoma	7	1	2	1	9		2		3			37	295		25	332	357	
Soft tissue sarcoma	1	1			7		1					9	63		10	72	82	
Germinal tumors		1			1				1	1		7	299		4	306	310	
Breast cancer		8			4					3			134		15	134	149	
Ewing	2	2								3		9	237		7	246	253	
Renal cancer		6								2		1	7		8	8	16	
Melanoma		2													2	0	2	
Colon cancer														5	0	5	5	
Other solid tumors	3	8			1					1	1	14	362		14	376	390	
<i>Non-malignant disorders</i>	399	195	29	47	64	2	1	1	195	93	89	5	122	0	1115	127	1242	
Bone marrow failure—SAA	164	100	3	6	6		1	1	59	36	14				390	0	390	
Bone marrow failure—other	32	21	3	4	4				21	16	15				116	0	116	
Hemoglobinopathies—thal	92	52	19	7	12				19	6	1	1	2		208	3	211	
Hemoglobinopathies—other	26	7	1		1				4						39	0	39	
Immune deficiencies	64	9	2	19	35	2			69	23	35	3			258	3	261	
Inherited disorders of metabolism	19	3	1	11	6				18	9	23		2		90	2	92	
Autoimmune disease	2	3							5	3	1	1	118		14	119	133	
Others	17	20		1	2				18	13	9	1	31		80	32	112	
Total	1310	3483	45	99	436	4	11	32	932	2851	458	256	15 133	0	9661	15 389	25 050	

Abbreviations: BM = bone marrow; MDS = myelodysplastic syndromes; MM = multiple myeloma; MPS = myeloproliferative disorders; PBPC = peripheral blood precursor cells; SAA = severe aplastic anemia; sec. AL = secondary acute leukemia; thal = thalassemia.

compared to 2005. Regarding the planned double autologous–allogeneic HSCT, there were a total of 531 procedures. Compared to 2005, when there was a total of 671 planned double autologous–allogeneic HSCT, this corresponds to a decrease of 21%. Main indications for the planned double transplant programs were, as in the previous year, multiple myeloma, non-Hodgkin's lymphoma and Hodgkin's disease.^{17–20}

Transplant rates in 2006. There were marked differences in transplant rates between European countries and countries affiliated with EBMT as presented in Figure 1.

These differences relate to all transplants (Figure 1a), to allogeneic HSCT (Figure 1b) and to autologous HSCT (Figure 1c). Differences between Eastern and Western European countries have been previously reported. Of interest to note is that countries with similar total transplant rates had similar transplant rates for allogeneic HSCT as well as for autologous HSCT.

Disease indications

Indications for HSCT in 2006 are listed in detail in Table 1. Main indications were *lymphoproliferative disorders* with 14 169 patients (56%), 1597 patients with allogeneic HSCT

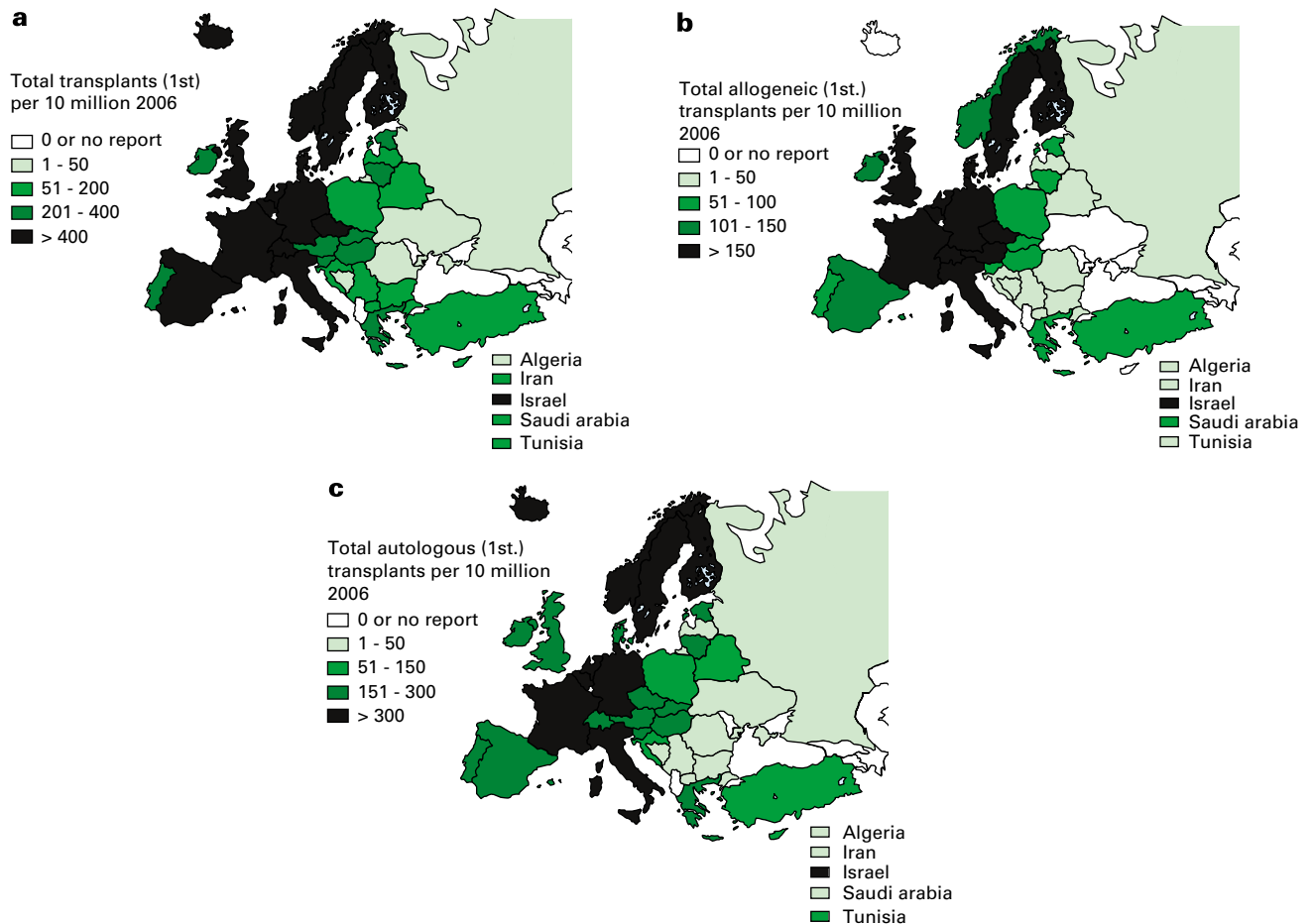


Figure 1 Transplant rates (number of HSCT per 10 million inhabitants) in European countries in 2006. (a) All HSCT combined, (b) allogeneic HSCT only and (c) autologous HSCT only.

(11%), 12 572 with autologous HSCT (89%); *leukemias* with 7963 patients (32%), 6784 patients with allogeneic (85%), 1179 with autologous (15%) HSCT; *solid tumors* with 1564 patients (6%), 85 with allogeneic HSCT (6%), 1479 with autologous HSCT (95%) and *non-malignant disorders* with 1242 patients (5%), 1115 with allogeneic HSCT (90%), 127 with autologous HSCT (10%). The latter, autologous HSCT for non-malignant disorders predominantly include patients (119) with autoimmune disorders. An additional 112 patients (1%), 80 with allogeneic HSCT and 32 with autologous HSCT were listed as 'other indications'.

Stem cell source

Of the 15 389 autologous first transplants, 256 (2%) were bone marrow derived, 15 133 (98%) from peripheral blood stem cells or from combined bone marrow and peripheral blood stem cell transplants (Table 1). Of the 9661 allogeneic first transplants, 24% were bone marrow, 71% were peripheral blood and 5% were cord blood transplants (Figure 2). This corresponds to a slight decrease in the proportion of peripheral blood as stem cell source

compared to the 74% in 2005. The proportion of peripheral blood as stem cell source varied depending on donor type. It was 72% for HLA-identical sibling donor transplants, 67% for unrelated donors, 81% for HSCT from other family members and, 74% for twin donors. Within allogeneic HSCT, the only disease indications with more bone marrow than peripheral blood donors as stem cell source were bone marrow failure syndromes (57% bone marrow) and congenital disorders (58% bone marrow) (Figure 2a). The proportion of main indications varied as well within the three stem cell sources. Non-malignant disease represented about a quarter of all indications for bone marrow and cord blood, but only a small fraction among the peripheral blood transplants (Figure 2b).

Donor type

For the 9661 allogeneic first transplants, HLA-identical siblings were used as donors for 4838 (50%) of the recipients, other family members for 539 (5.5%) of the recipients, a syngeneic twin for 43 (0.5%) of the recipients and an unrelated volunteer donor for 4241 (44%) of the recipients.

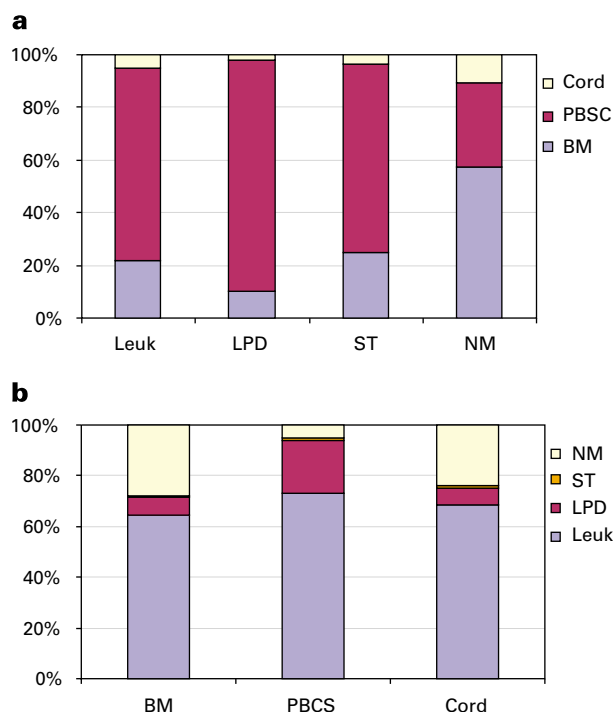


Figure 2 Main indications and stem cell source for 9661 allogeneic HSCT in Europe 2006. **(a)** Proportion of the main indications among the stem cell sources, bone marrow (BM), peripheral blood (PBSC) and cord blood (cord). **(b)** Proportion of stem cell source among the four main indications: leukaemia (Leuk); lymphoproliferative disorder (LPD); solid tumor (ST) and non-malignant disorder (NM).

Conditioning

Numbers of RIC HSCT continued to increase from 3301 in 2005 to 3530 in 2006 at the same rate as allogeneic HSCT. They were used in 34% of all allogeneic HSCT. This information is collected only in a generic way; no information on disease distribution is possible by the activity survey.

Cord blood transplants

A total of 544 allogeneic HSCT were cord blood transplants compared to 395 in 2005, 283 in 2004 and 86 in 1997 when this item was introduced into the activity survey. The development over the last 10 years, and the massive increase in the last four years, is illustrated in Figure 3. This increase was largely observed in countries of the high-income World Bank category. Of the 507 cord blood HSCT reported as first transplants, the majority, 458 (90.5%), were from unrelated donors. There were 45 (9%) HLA-identical and 4 (0.5%) non-identical family transplants. There were no autologous cord blood transplants reported.

Overall, the 544 cord blood transplants correspond to 5% of all allogeneic HSCT. However, there were marked differences in the use of cord blood depending on disease indication (Table 2). Of the 507 cord blood HSCT reported by indication, a higher proportion was for non-malignant disorders (total 11%), specifically for congenital bone marrow failure syndromes (7%), immune deficiencies

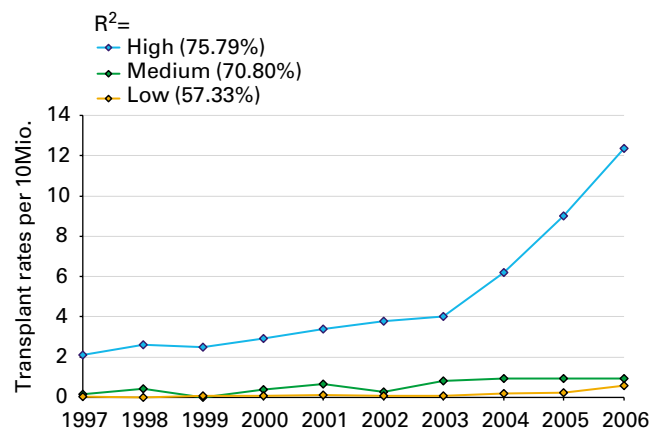


Figure 3 Evolution of cord blood HSCT in Europe from 1997 to 2006. Curves reflect means of weighted transplant rates per 10 million inhabitants according to World Bank category; high, medium and low incomes (see text) of the participating countries.

Table 2 Absolute number of cord blood HSCT by disease indication and their relative use among the allogeneic HSCT

	Allogeneic HSCT	N. cord blood HSCT	% cord blood HSCT
<i>Leukemias</i>	6784	341	5
Acute myeloid leukemia	3020	146	5
First complete remission	1644	56	3
Not first complete remission	1376	90	7
Acute lymphoblastic leukemia	1690	137	8
First complete remission	920	61	7
Not first complete remission	770	76	10
Chronic myeloid leukemia	620	10	2
Chronic phase	373	2	1
Not first chronic phase	247	8	3
MDS including sec. AL	866	33	4
MPS	294	9	3
Chronic lymphocytic leukemia	294	6	2
<i>Lymphoproliferative disorders</i>	1597	34	2
Plasma cell disorders	504	3	1
Hodgkin's lymphoma	260	8	3
Non-Hodgkin's lymphoma	833	23	3
<i>Solid tumors</i>	85	3	4
<i>Non-malignant disorders</i>	1115	120	11
Bone marrow failure—SAA	390	17	4
Bone marrow failure—other	116	18	16
Hemoglobinopathies	247	21	9
Immune deficiencies	258	39	15
Inherited disorders of metabolism	90	24	27
Autoimmune disease	14	1	7
<i>Others</i>	80	9	11
Total	9661	507	5

Abbreviations: HSCT = hematopoietic stem cell transplantation; MDS = myelodysplastic syndromes; MPS = myeloproliferative disorders; N. cord = number of cord blood HSCT; SAA = severe aplastic anemia; sec. AL = secondary acute leukemia.

(15%) or inherited disorders of metabolism (27%). Cord blood was rarely used for solid tumors (4%) and lymphoproliferative disorders (2%). Cord blood was used

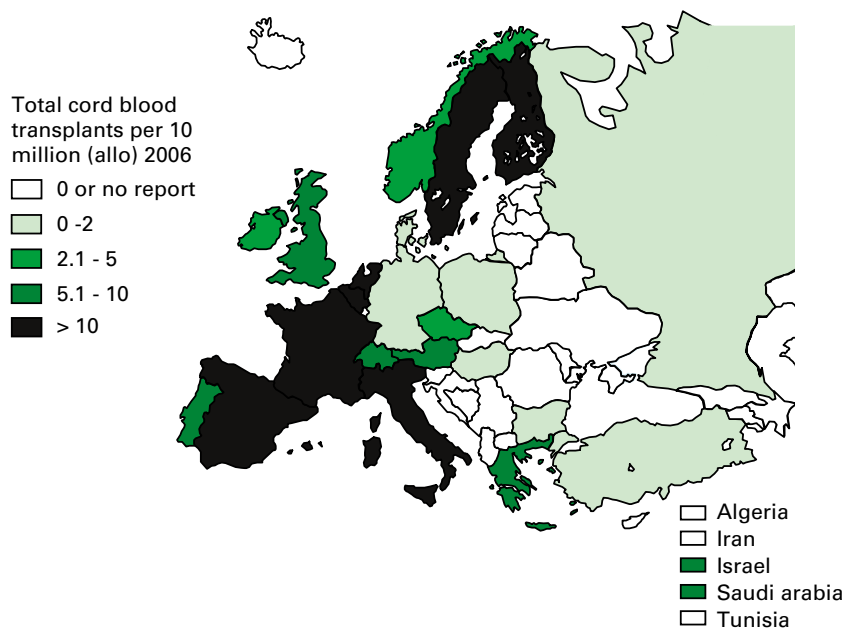


Figure 4 Cord blood HSCT in Europe. Transplant rates (number of cord blood HSCT per 10 million inhabitants) in participating European countries in 2006.

more frequently in advanced leukemias than in early leukemia's.

There were also major differences in the use of cord blood HSCT between the European countries. This refers to absolute numbers compared to the population (cord blood transplant rates) (Figure 4) as well as to the proportion of cord blood as stem cell source among the allogeneic HSCT (data not shown).

Donor lymphocyte infusions

There were 1920 patients reported as having received donor lymphocyte infusions in 2006. This corresponds to about two-thirds of the number of reported patients with RIC HSCT. No information on the disease indication of those patients with DLI is available from the activity survey.

Major changes over the last decade

Allogeneic HSCT. The ongoing increase in allogeneic HSCT continued at the same rate as has been observed over the last decade for almost all indications (Figure 5). Clear increases were seen in the acute leukemias, as illustrated for AML (Figure 5a) and ALL (Figure 5b). There were stable numbers for CML and lymphoproliferative disorders when compared to 2005.

Autologous HSCT. In contrast to the development in allogeneic HSCT, numbers in general remained stable for autologous HSCT overall (Figure 6) as illustrated for plasma cell disorders (PCD) (Figure 6a). However, the continuing decline in autologous HSCT for ALL is still evident (Figure 6b).

Discussion

This report presents the current state of the art of HSCT in Europe in 2006. It documents the diversity of the procedure, which includes autologous and allogeneic stem cells from the three main sources, bone marrow, peripheral blood and cord blood for a broad range of malignant and non-malignant disorders.²¹ Allogeneic HSCTs continue to increase for most indications in all countries and in countries with high and middle income by World Bank categories. This increase is most pronounced in patients with acute leukemia and is observed in related and unrelated HSCT as well. In contrast to allogeneic HSCT, numbers of autologous HSCT remained similar in most disease indications when compared to 2005.

For the first time since the introduction of the EBMT activity survey, detailed information was collected concerning cord blood transplants. The data confirm the increasing use of cord blood in general. They permit a rapid presentation of current use by indication and donor type. The data show marked differences in cord blood use between European countries. These differences are not explained solely by economic factors such as gross national income per capita or World Bank category. Most likely, these differences reflect the activities of the major cord blood banks in Europe and the impact of their leaders on the transplant activities with their countries.

There are a few notable findings. Cord blood is preferentially used for non-malignant, mainly congenital disorders. This reflects one selective advantage of cord blood. Its use is optimal in small children, which guarantees a high cell dose per kilogram body weight. It reflects as well the specific advantage of cord blood compared to other stem cell sources in the reduced incidence of GvHD. In

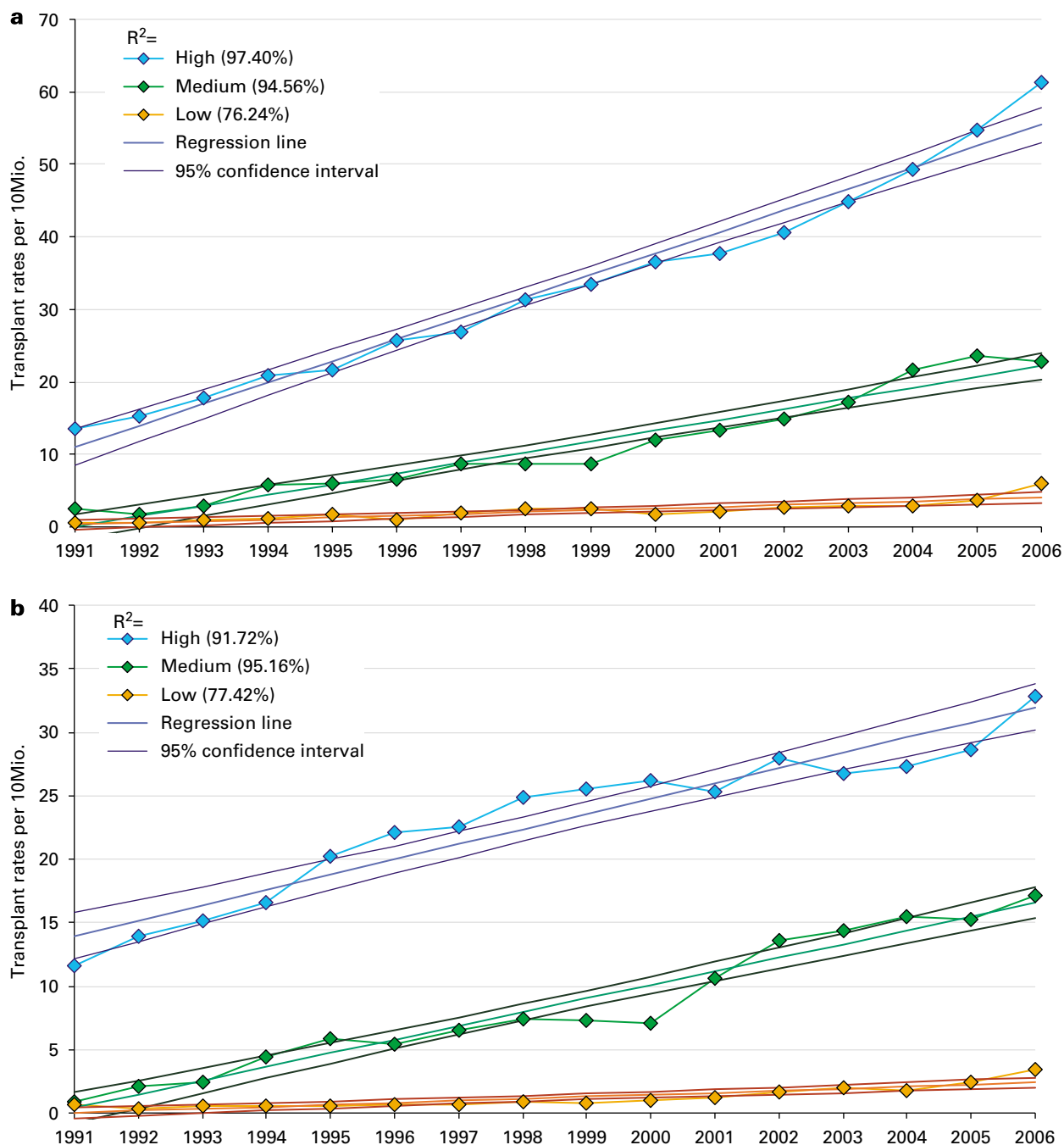


Figure 5 Evolution of allogeneic HSCT in Europe from 1991 to 2006 by selected disease indication and World Bank category; high, medium and low incomes (see text). Curves reflect means of weighted transplant rates per 10 million inhabitants \pm 95% confidence limits. (a) AML and (b) ALL.

non-malignant disorders, absence of GvHD is never deleterious since no graft-versus-disease effect is required.¹¹

The most frequent use of cord blood overall was for acute leukemias. The rapid increase in use might be due to the introduction of new technologies, for example, the use of double cord blood products to increase the number of stem cells given or the use of combined haploidentical cord blood transplants.^{22–25} The survey does not provide data on these technologies; reports from the registries need to be analyzed to confirm this hypothesis. The fact that more

cord blood HSCTs were used for advanced acute leukemias than for early leukemias might reflect this attitude and might reflect some of the reservations concerning general use of cord blood HSCT instead of an HLA-identical sibling or well-matched unrelated HSCT. It is also important to note that none of the teams reported an autologous cord blood HSCT in 2006.

As usual, the activity survey does not provide any outcome data. This is not the purpose of this data collection, whose focus is on the rapid dissemination of

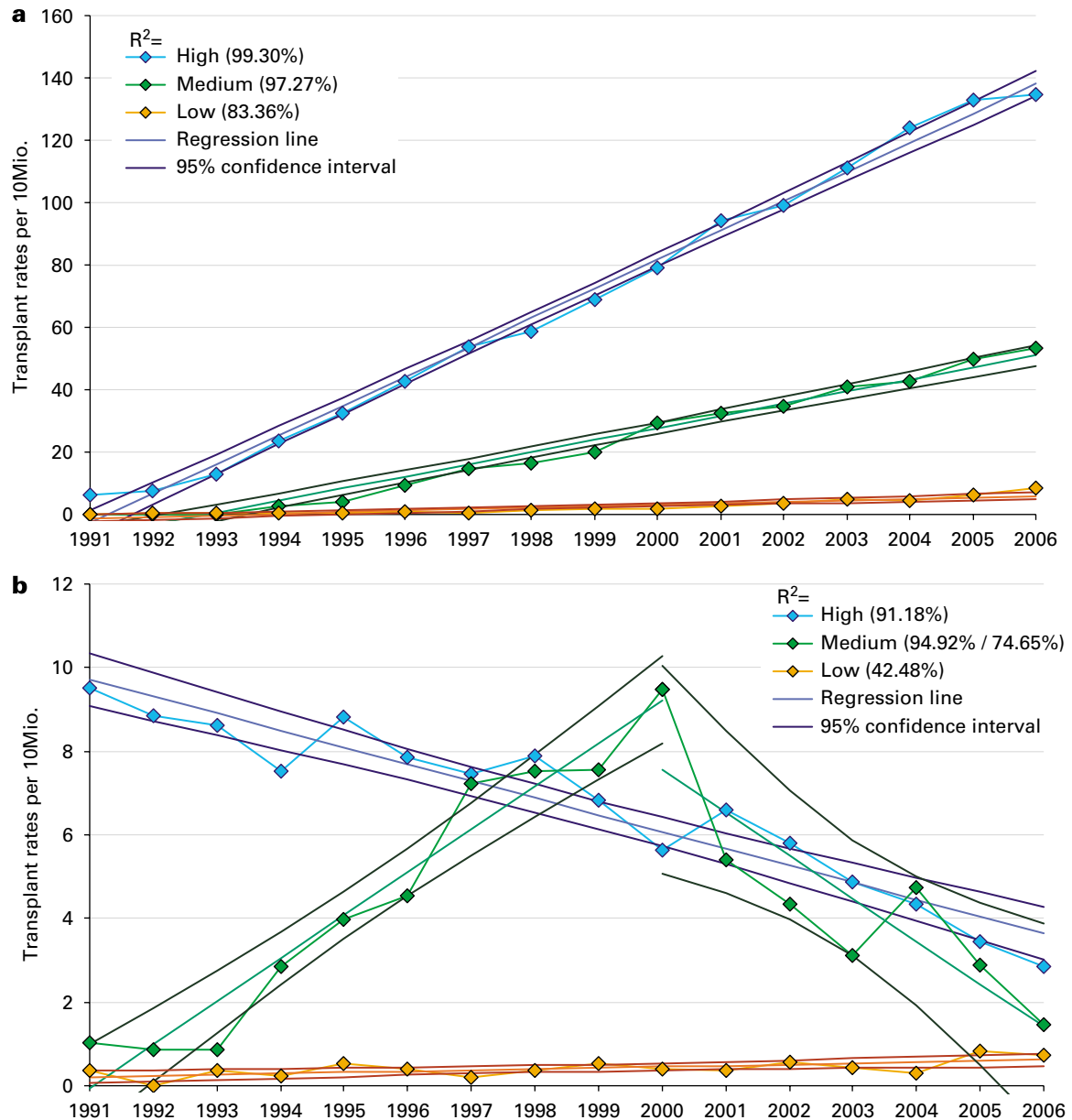


Figure 6 Evolution of autologous HSCT in Europe from 1991 to 2006 by selected disease indication and World Bank category; high, medium and low incomes (see text). Curves reflect means of weighted transplant rates per 10 million inhabitants \pm 95% confidence limits. (a) Plasma cell disorders and (b) ALL.

trends. Outcome data will be reported later and elsewhere. In contrast, this data give a clear overview on the *status quo* in 2006 and on the developments to be expected in the near future. As such, they provide a basis for patient counseling and health-care planning.

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References

- Gratwohl A. Bone marrow transplantation activity in Europe 1990. Report from the European Group for Bone Marrow Transplantation (EBMT). *Bone Marrow Transplant* 1991; **8**: 197–201.
- Gratwohl A, Baldomero H, Horisberger B, Schmid C, Passweg J, Urbano-Ispizua A *et al*. Current trends in haematopoietic stem cell transplantation in Europe. *Blood* 2002; **100**: 2374–2386.
- Gratwohl A, Baldomero H, Frauendorfer K, Urbano-Ispizua A. Activity survey 2004 and changes in disease indication over the last 15 years. *Bone Marrow Transplant* 2006; **37**: 1069–1085.
- Gratwohl A, Passweg J, Baldomero H, Horisberger B, Urbano-Ispizua A, for the Accreditation Committee of the European Group for Blood and Marrow Transplantation (EBMT). Economics, health care systems and utilisation of haematopoietic stem cell transplants in Europe. *Br J Haematol* 2002; **117**: 451–468.
- Gratwohl A, Baldomero H, Schwendener A, Gratwohl M, Urbano-Ispizua A, Frauendorfer K. Haematopoietic stem cell transplants for chronic myeloid leukemia in Europe. Impact of cost considerations. *Leukemia* 2006; **21**: 383–386.
- Gratwohl A, Baldomero H, Schmid O, Horisberger B, Bargetzi M, Urbano-Ispizua A. Change in stem cell source for hematopoietic stem cell transplantation in Europe. *Bone Marrow Transplant* 2005; **36**: 575–590.
- Schoemans H, Theunissen K, Maertens J, Boogaerts M, Verfaillie C, Wagner J. Adult umbilical cord blood transplantation: a comprehensive review. *Bone Marrow Transplant* 2006; **38**: 83–93.
- Gluckman E, Broxmeyer HA, Auerbach AD, Friedman HS, Douglas GW, Devergie A *et al*. Hematopoietic reconstitution in a patient with Fanconi's anemia by means of umbilical-cord blood from an HLA-identical sibling. *N Engl J Med* 1989; **321**: 1174–1178.
- Rocha V, Labopin M, Sanz G, Arcese W, Schwerdtfeger R, Bosi A *et al*. Transplants of umbilical-cord blood or bone marrow from unrelated donors in adults with acute leukemia. *N Engl J Med* 2004; **351**: 2276–2285.
- Arcese W, Rocha V, Labopin M, Sanz G, Iori AP, de Lima M *et al*. Unrelated cord blood transplants in adults with hematologic malignancies. *Haematologica* 2006; **91**: 223–230.
- Gluckman E, Rocha V. Donor selection for unrelated cord blood transplants. *Curr Opin Immunol* 2006; **18**: 565–570.
- Eapen M, Rubinstein P, Zhang MJ, Stevens C, Kurtzberg J, Scaradavou A *et al*. Outcomes of transplantation of unrelated donor umbilical cord blood and bone marrow in children with acute leukaemia: a comparison study. *Lancet* 2007; **369**: 1947–1954.
- Urbano-Ispizua A. Risk assessment in haematopoietic stem cell transplantation: stem cell source. *Best Pract Res Clin Haematol* 2007; **20**: 265–280.
- Takahashi S, Ooi J, Tomonari A, Konuma T, Tsukada N, Oiwa-Monna M *et al*. Comparative single-institute analysis of cord blood transplantation from unrelated donors with bone marrow or peripheral blood stem-cell transplants from related donors in adult patients with hematologic malignancies after myeloablative conditioning regimen. *Blood* 2007; **109**: 1322–1330.
- Laughlin MJ, Eapen M, Rubinstein P, Wagner JE, Zhang MJ, Champlin RE *et al*. Outcomes after transplantation of cord blood or bone marrow from unrelated donors in adults with leukemia. *N Engl J Med* 2004; **351**: 2265–2275.
- Ljungman P, Urbano-Ispizua A, Cavazzana-Calvo M, Demirer T, Dini G, Einsele H *et al*. Allogeneic and autologous transplantation for hematological diseases, solid tumours and immune disorders: definitions and current practice in Europe. *Bone Marrow Transplant* 2006; **37**: 439–449.
- Moreau P, Harousseau JL, Attal M. Allografting or autografting for myeloma. *N Engl J Med* 2007; **356**: 2646–2648.
- Garban F, Attal M, Michallet M, Hulin C, Bourhis JH, Yakoub-Agha I *et al*. Prospective comparison of autologous stem cell transplantation followed by dose-reduced allograft (IFM99-03 trial) with tandem autologous stem cell transplantation (IFM99-04 trial) in high-risk *de novo* multiple myeloma. *Blood* 2006; **107**: 3474–3480.
- Corso A, Mangiacavalli S, Barbarano L, Alessandrino EP, Cairoli R, Morra E *et al*. Limited feasibility of double transplant in multiple myeloma: results of a multicenter study on 153 patients aged <65 years. *Cancer* 2007; **109**: 2273–2278.
- Bruno B, Rotta M, Patriarca F, Mordini N, Allione B, Carnevale-Schianca F *et al*. A comparison of allografting with autografting for newly diagnosed myeloma. *N Engl J Med* 2007; **356**: 1110–1120.
- Copelan EA. Haematopoietic stem-cell transplantation. *N Engl J Med* 2006; **354**: 1813–1826.
- Haspel RL, Ballen KK. Double cord blood transplants: filling a niche? *Stem Cell Rev* 2006; **2**: 81–86.
- Lekakis L, Giralt S, Couriel D, Shpall EJ, Hosing C, Khouri IF *et al*. Phase II study of unrelated cord blood transplantation for adults with high-risk hematologic malignancies. *Bone Marrow Transplant* 2006; **38**: 421–426.
- Fernandez MN, Regidor C, Cabrera R, Garcia-Marco J, Briz M, Fores R *et al*. Cord blood transplants: early recovery of neutrophils from co-transplanted sibling haploidentical progenitor cells and lack of engraftment of cultured cord blood cells, as ascertained by analysis of DNA polymorphisms. *Bone Marrow Transplant* 2001; **28**: 355–363.
- Brunstein CG, Barker JN, Weisdorf DJ, DeFor TE, Miller JS, Blazar BR *et al*. Umbilical cord blood transplantation after nonmyeloablative conditioning: impact on transplantation outcomes in 110 adults with hematologic disease. *Blood* 2007; **110**: 3064–3070.

Appendix 2006

List of transplant centers in 2006

(Total first HSCT (total all HSCT) N allogeneic first HSCT/N autologous first HSCT)

Albania: no report

Andorra: no report

Armenia: no report

Algeria: (one team: 155 (162) 100/55)

Alger, Centre Pierre et Marie Curie, CIC 703, R Hamladji (155 (162) 100/55)

Austria: (13 teams: 315 (391) 133/182)

Graz, Karl Franz University Hospital (onco), CIC 278 (0 (0) 0/0)
 Graz, Karl Franz University Hospital (hem), CIC 308, W Linkesch (51 (55) 25/26)
 Graz, Universitäts-Kinderklinik (hem, onco), CIC 593, Ch Urban (4 (8) 1/3)
 Innsbruck, Universitätsspital (hem, onco), CIC 271, G Gastl, D Nachbaur (54 (66) 34/20)
 Klagenfurt, General Hospital Klagenfurt, D Geissler, M Heisteringer (12 (12) 0/12)
 Linz, AO Krankenhaus (onco), 1 Medizin, MA Fridrik (5 (5) 0/5)
 Linz, AOK der Elisabethinen, Internal Medicine, CIC 594, D Lutz, O Krieger (36 (47) 16/20)
 Salzburg, LKA Salzburg (onco), CIC 356, R Greil (27 (40) 0/27)
 Vienna, AKH, Universitätsklinik für Innere Medizin I (onco), CIC 227, HT Greinix, P Kalhs (67 (75) 39/28)
 Vienna, St Anna Kinderspital (hem, onco), CIC 528, H Gadner, C Peters (30 (35) 18/12)
 Vienna, Hanusch-Krankenhaus (hem, onco), CIC 743, E Koller (8 (12) 0/8)
 Vienna, Donauespital, CIC 767, W Hinterberger (4 (5) 0/4)
 Vienna, Wilhelminenspital (hem, onco), CIC 828, H Ludwig (17 (31) 0/17)

Azerbaijan: (one team: no report)

Baku, Azerbaijan Central Clinic Hospital, CIC 186, S Dincer (no report)

Belarus, Republic of: (two teams: 108 (114) 28/80)

Minsk, Belorussian Center (hem, onco, peds), CIC 591, O Aleinikova (42 (45) 19/23)
 Minsk, Hospital no. 9, N Milanovitch (66 (69) 9/57)

Belgium: (21 teams: 584 (667) 253/331)

Antwerpen, Stuivenberg ZH, CIC 339, P Zachée (38 (43) 23/15)
 Antwerpen-Edegem, University Antwerpen (hem), CIC 996, W Schroyens (33 (42) 17/16)
 Antwerpen, AZ Middelheim (hem), CIC 783, R de Bock (8 (9) 0/8)
 Brugge, AZ St Jan (hem), CIC 506, D Selleslag, A Van Hoof, J Van Droogenbroeck, K Van Eygen (50 (58) 23/27)
 Brussels, Institut Jules Bordet and the Children's University Hospital, CIC 215, D Bron, E Sariban, C Devalck, A Ferster (38 (43) 28/10)
 Brussels, Clinique Universitaires St Luc (hem, ads), CIC 234, A Ferrant (51 (57) 28/23)
 Brussels, Clinique Universitaire St Luc (peds), CIC 234, C Vermeylen (10 (10) 7/3)
 Brussels, Cliniques Universitaires St Luc, (onco), JP Machiels (no report)
 Brussels, Hôpital Erasme (hem), CIC 596, W Feremans, A Kentos, M Lambermont, A Dewewere (22 (25) 0/22)
 Brussels, University Hospital (hem, onco), CIC 630, B Van Camp, A Schots (23 (30) 6/17)
 Charleroi, Hôpital Notre-Dame (hem, onco), CIC 349, M André (18 (21) 3/15)
 Charleroi, University Hospital (hem), CIC 804, A Triffet (2 (2) 0/2)
 Gent, University Hospital (hem, ads, peds), CIC 744, LA Noens (51 (55) 23/28)
 Haine St Paul, Hôpital de Jolimont (hem), CIC 234, A Delannoy, C Ravoot, N Straetmans (18 (18) 2/16)
 Hasselt, Virgajesse Ziekenhuis (hem), CIC 632, D Vanstraelen, G Bries, V Madoe (27 (31) 0/27)
 Leuven, University Hospital Gasthuisberg (hem, ads, peds), CIC 209, J Maertens, MA Boogaerts, P Vandenberghe (88 (97) 56/32)

Liège, CHR La Citadelle (hem, onco), CIC 353, B De Prijck (9 (9) 0/9)

Liège, University Hospital Sart-Tilman (hem), CIC 726, Y Béguin (55 (69) 30/25)

Roeselare, H Hartziekenhuis (hem, onco), CIC 646, F Van Aelst, J Tytgat, J Demol (16 (16) 4/12)

Wilrijk, Sint Agustinos GVA (hem), CIC 715, J Lemmens (6 (6) 0/6)

Yvoir, Clinique universitaire de Mont-Godinne (hem), CIC 234, C Doyen (21 (26) 3/18)

Bosnia-Herzegovina: (two teams: 6 (6) 1/5)

Sarajevo, Clinical Centre University Sarajevo (hem), CIC 198, A Sofic-Hafizovic (0 (0) 0/0)

Tuzla, University Clinical Centre of Tuzla (hem), CIC 647, M Malesevic (6 (6) 1/5)

Bulgaria: (two teams: 38 (38) 9/29)

Sofia, Pediatric Hospital for Oncohematology and Bone Marrow Transplantation (peds hem-onco), CIC 346, D Bobev, B Avramova, M Yordanova (20 (20) 9/11)

Sofia, National Centre of Hematology and Transfusiology BMT, CIC 859, G Michailov (18 (18) 0/18)

Croatia: (two teams: 32 (33) 6/26)

Zagreb, Clinic Hospital 'Merkur', CIC 159, B Jaksic, H Minigo (32 (33) 6/26)

Zagreb, Clinical Hospital Center, CIC 302, B Labar, D Nemet, M Msrac (no report)

Cyprus: (one team: 8 (8) 0/8)

Nicosia Makarios Hospital III (hem), CIC 575, A Papatryphonos (8 (8) 0/8)

Czech Republic: (nine teams: 450 (518) 161/289)

Brno, Masaryk University Hospital (ads, peds, hem, onco), CIC 597, J Vorlicek, J Mayer, Z Koristek (101 (127) 24/77)

Hradec Kralové, Charles University (hem), CIC 729, S Filip, M Blaha (48 (57) 20/28)

Olomouc, University Hospital (hem, onco), CIC 574, K Indrak (50 (56) 16/34)

Pilsen, Faculty Hospital (hem, onco), CIC 718, V Koza (73 (80) 31/42)

Prague, Clinical Haematology, Charles University, CIC 318, T Kozak (41 (44) 0/41)

Prague, Thomayer Memorial Hospital, CIC 375, J Abrahamova, J Nepomucká (3 (3) 0/3)

Prague, University Hospital Motol (peds, hem, onco), CIC 656:2, P Sedlacek (30 (32) 26/4)

Prague, Institute of Hematology and Blood Transfusion, A Vitek, P Kobylka CIC 656:1 (51 (55) 44/7)

Prague, Charles University, CIC 745, M Trneny (53 (64) 0/53)

Denmark: (four teams: 248 (276) 92/156)

Aalborg, Aalborg Hospital (hem/clin immunology), CIC 848, J Baech, I Christiansen (18 (19) 0/18)

Aarhus, Amtssygehus (hem) and Skejby Hospital, CIC 634 + 510, E Segel, B Moeller (50 (54) 0/50)

Copenhagen, Rigshospitalet (hem), CIC 206, N Jacobsen (152 (173) 92/60)

Copenhagen, Herlev Hospital (hem), University, CIC 568, B Jensen (28 (30) 0/28)

Estonia: (two teams: 33 (33) 10/23)

Tallinn, North Estonian Regional Hospital, K Vaht (12 (12) 0/12)

Tartu, University Hospital (hem, onco), CIC 746, H Everaus, A Kaare (21 (21) 10/11)

Finland: (seven teams: 293 (309) 119/174)

Helsinki, Children's Hospital, CIC 219, U Pihkala, S Vettenranta (28 (30) 23/5)

Helsinki, University Central Hospital, Department of Medicine, CIC 515, T Ruutu (107 (109) 74/33)

Helsinki, University Hospital (onco), CIC 833, H Joensuu, R Janes (23 (23) 0/23)

Kuopio, Department of Medicine, University Hospital, CIC 396, E Jantunen, T Nousiainen (33 (34) 0/33)

Oulu, University Central Hospital (hem, onco), CIC 690, P Koistinen, T Turpeenniemi-Hujanen (31 (32) 0/31)

Tampere, University Hospital (ads, peds), CIC 635, E Koivunen, T Lehtinen, R Silvennoinen, M Arola (29 (36) 0/29)

Turku, University Central Hospital, CIC 225, K Remes (42 (45) 22/20)

France: (72 teams: (3636 (4105) 1135/2501)

Amiens, CHU Amiens, CIC 955, G Damaj (39 (40) 0/39)

Angers, Centre Hospitalier, CIC 650, N Ifrah, S François (60 (68) 25/35)

Argenteuil, Hopital Victordupouy (hem), CIC 199, L Sutton (24 (26) 0/24)

Besançon, Hôpital Jean Minjot & Hôpital St Jacques (ads, peds), CIC 233, P Herve, E Deconinck, P Rohrlisch (86 (92) 42/44)

Bordeaux, Hôpital des Enfants (hem, onco), A Notz-Carrere (13 (13) 3/10)

Brest, Hôpital Morvan (hem), D Gillet (75 (89) 22/53)

Caen, Centre Hospitalier Régional, CIC 251, O Reman (33 (36) 10/23)

Caen, Hôpital Cote de Nacre (peds, hem, onco), P Boutard (1 (1) 0/1)

Caen, Centre Régional François Baclesse, C Fruchart (20 (26) 0/20)

Clermont Ferrand, Centre Jean Perrin and CHU Hotel Dieu (ads, peds), CIC 273, J-O Bay, F Dèmeocq, P Travade (88 (111) 24/64)

Colmar, Hôpital Civil, B Audhuy (11 (12) 0/11)

Corbeil Essonne, Hôpital Gilles de Corbeil, A Devidas (14 (14) 0/14)

Créteil, Hôpital H Mondor (hem), CIC 252, C Cordonnier, M Kuentz (47 (50) 19/28)

Dijon, Hôpital d'Enfants, D Caillot (78 (86) 0/78)

Dunkerque, Centre Hospitalier (hem), M Wetterwald (9 (12) 0/9)

Grenoble, Centre Hospitalier A Michallon (ads, peds), CIC 270, JY Cahn, F Garban, P Drillat, D Plantaz (74 (80) 39/35)

Lille, Hôpital Claude Huriez, CIC 277, F Bauters, JP Jouet (96 (109) 44/52)

Lille, Hôpital Jeanne de Flandre, CIC 963, J Dalle, B Nelken (1 (1) 0/1)

Lille, Centre Oscar Lambret (onco), Dr Depadt, Dr Defachelles (11 (18) 0/11)

Lille, Centre Hospitalier Saint Vincent, N Cambier (10 (12) 0/10)

Limoges, Centre Hospitalier Dupuytren (ads, hem), CIC 977, D Bordessoule, P Turlure (41 (50) 0/41)

Lyon, Centre Léon Bérard, CIC 241, P Biron, T Philip (55 (64) 0/55)

Lyon, Hôpital Edouard Herriot, CIC 671, M Michallet, E Wattel, A Thiebaut, F Nicolini, J Troncy, X Thomas (53 (65) 37/16)

Lyon Sud (Pierre Benite), Centre Hospitalier, B Coiffier (81 (96) 0/81)

Lyon, Hôpital Debrousse, CIC 806, Y Bertrand, V Mialou (25 (27) 25/0)

Marseille, Inst. Paoli-Calmettes, CIC 230, D Blaise (294 (341) 66/228)

Marseille, Hôpital d'Enfants de la Timone (onco), CIC 301, C Coze, JL Bernard, J Frayfer (11 (14) 0/11)

Meaux, Centre Hospitalier de Meaux, C Soussain (8 (8) 0/8)

Metz, Thionville Hôpital Notre-Dame de Bon-Secours (hem), V Dorvaux, B Christen (35 (37) 0/35)

Montpellier, CHU de Montpellier Hôpital Arnaud de Villeneuve, F Bernard (17 (17) 10/7)

Montpellier, CHR Lapeyronie (hem), CIC 926, JF Rossi (139 (166) 48/91)

Mulhouse, Hôpital du Hasenrain, B Drénou, M Ojeda (10 (10) 0/10)

Nancy, Vandoeuvre-les-Nancy, Hôpital d'Enfants, P Bordigoni (46 (51) 38/8)

Nancy, Vandoeuvre-les-Nancy, CHU Nancy-Brabois (hem), P Lederlin, F Witz (46 (48) 0/46)

Nantes, Hotel Dieu (hem), CIC 253, P Chevallier, JL Harousseau (184 (196) 67/117)

Nice, Hôpital de l'Archet (including Hopital Lenval) (peds), CIC 523, N Gratecos, JP Cassuto, D de Ricaud (42 (46) 26/16)

Nice, Centre Antoine Lacassagne, A Thyss (19 (19) 0/19)

Paris, Hôpital Necker (ads, hem), CIC 160, B Varet, C Bélanger, A Veil (79 (83) 37/42)

Paris, Hôpital Necker des enfants malades (allo), CIC 201, A Fischer (29 (34) 28/1)

Paris, Hôpital St Louis (hem, allo, ads, peds), CIC 207 + CIC 748, G Socié, E Gluckman, H Esperou (106 (109) 105/1)

Paris, Hôpital St Louis (auto), CIC 805, G Gisselbrecht (55 (55) 1/54)

Paris, Hôpital St Louis (auto-leuk), CIC 960, H Dombret, L Degos, P Rousselot (4 (4) 0/4)

Paris, Hôpital St Louis (auto immuno-Haem), J-P Fermand (58 (58) 0/58)

Paris, Hôpital St Antoine (hem), CIC 213, C Gorin, L Fouillard (43 (51) 12/31)

Paris, Hôpital D'enfants Armand-Trousseau, CIC 213, G Leverger, A Auvergnon, L Douay (10 (10) 0/10)

Paris, Hôtel Dieu (hem), CIC 222, Z Marjanovic (74 (80) 38/36)

Paris, Hôpital Pitié Salpêtrière (hem), CIC 262, J-P Vernant, V Leblond, N Dedhin (96 (104) 43/53)

Paris, Institut Curie (ads/onco/peds), CIC 702, J Michon (30 (35) 0/30)

Paris, Hôpital Tenon (onco), CIC 747, JP Lotz (23 (46) 0/23)

Paris, Hôpital Robert Debré, K Yakouben, A Baruchel (24 (24) 24/0)

Paris, Hôpital Européen GP, JM. Andrieu, C Le Maignan (3 (3) 0/3)

Paris, Hôpital d'Instruction des Armées Percy, Clamart, T de Revel, G Nedellec (47 (55) 24/23)

Paris, Hôpital Cochin (auto), F Dreyfus, M Quarre (35 (38) 0/35)

Pessac, Hôpital Haut-Lévêque, CHU Bordeaux, CIC 267, N Milpied, G Marit, R Tabrizi (165 (198) 67/98)

Poitiers, Hôpital la Milettrie, CIC 264, M Renaud (80 (87) 45/35)

Pontoise, Hospital René Dubois (hem, onco), CIC 961, H Gonzalez (14 (19) 0/14)

Reims, Hospital Robert Debré (hem, onco), CIC 959, A Delmer, B Pignon, C Himberlin (40 (48) 0/40)

Rennes, CHRU, Clinique Médical Infantile, E Le Gall, V Gandemer (9 (10) 5/4)

Rennes, Hôpital de Pontchaillou (hem), T Lamy (82 (85) 26/56)

Roubaix, Hôpital V. Provo (hem), I Plantier-Colcher (12 (17) 0/12)

Rouen, Centre Henri Becquerel, CIC 941, H Tilly, P Lenain (68 (79) 17/51)

Rouen, Hôpital Charles Nicolle, JP Vannier (12 (14) 6/6)

St Cloud, Centre René Huguenin, CIC 551, M Janvier (28 (29) 0/28)

Strasbourg, Hôpital de Haute-pierre, B Lioure (82 (101) 30/52)

Strasbourg, Hospices Civils, Service de Pédiatrie 5, P Lutz (13 (18) 9/4)

Toulouse, Hôpital de Purpan (hem), CIC 624, M Attal, J-C Nogaro (13 (13) 4/9)

Toulouse, Hôpital de Purpan (peds), CIC 624, H Rubie (112 (122) 29/83)

Tours, Hôpital Bretonneau (onco), CIC 272, P Colombat (50 (57) 0/50)
 Valenciennes, Hosp. De Valenciennes, M Simon (19 (19) 0/19)
 Villejuif, Institut G Roussy (peds), CIC 503, O Hartmann, D Valteau-Couanet (72 (94) 0/72)
 Villejuif, Institut G Roussy (ads, hem), CIC 666, J-H Bourhis, C Boccaccio, J-M Vantelon (150 (150) 40/110)
 Villejuif, Hôpital Paul Brousse, B Delmas-Marsalet (3 (5) 0/3)

Georgia: no report

Germany: (108 teams: 4619 (5856) 2049/2570)

Aachen, Universitätsklinikum RWTH (hem, onco), Med Klinik IV, CIC 348, R Osieka, G Gehbauer (14 (21) 0/14)
 Augsburg, Zentralklinikum (hem, onco), Med Klinik II, G Schlimok, M Sandherr (32 (37) 16/16)
 Bad Saarow, Humaine Klinikum, G Schultze, U Wruck, K Senftleben (13 (24) 0/13)
 Berlin, Universitätsklinikum der HU Charité Campus Virchow Klinikum (peds), CIC 336, G Gaedicke, W Ebell, J Köhl (32 (39) 24/8)
 Berlin, Universitätsklinikum der HU Charité Campus Virchow Klinikum (ads, hem, onco), CIC 807, B Dörken, R Arnold (93 (116) 53/40)
 Berlin, HELIOS Klinikum Berlin, Robert-Rössle Klinik (hem, onco), CIC 518, W-D Ludwig, R Bargon (26 (37) 0/26)
 Berlin, Universitäts-Klinik der FU Benjamin Franklin (hem, onco), CIC 590, L Uharek, E Thiel (71 (92) 39/32)
 Bielefeld, Franziska Hospital (hem, onco), HJ Weh, A Zumsprekel (5 (5) 0/5)
 Bochum, Knappschafts-Krankenhaus (hem, onco), CIC 124, W Schmiegell, C Teschendorf (35 (47) 35/0)
 Bonn, Rheinische Friedrich-Wilhelms Universität (ads, hem, onco), T Sauerbruch, I Schmidt-Wolf (21 (36) 0/21)
 Bonn, Rheinische Friedrich-Wilhelms Universität (peds, hem, onco), U Bode, C Hasan (8 (14) 0/8)
 Braunschweig, Städtisches Klinikum (hem, onco), CIC 674, B Wörmann, T Gabrysiak (15 (26) 0/15)
 Bremen, Zentralkrankenhaus St Jürgenstrasse, CIC 602, B Hertenstein, H Rasche, H Thomssen (23 (38) 7/16)
 Bremen, DIAKO (hem, onco), KH Pflüger, T Wolff (15 (20) 0/15)
 Chemnitz, Krankenhaus Küchwald (hem), CIC 104, M Hänel, G Geissler (46 (70) 1/45)
 Cottbus, Carl-Thiem Klinikum, Med Klinik II (hem), H Steinhauer, N Peter (21 (33) 0/21)
 Dessau, Städtisches Klinikum Dessau (hem, onco), M Plauth, A Florschütz (13 (18) 0/13)
 Dortmund, St Johannes Hospital (hem, onco), H Plelken, M Hindahl (7 (7) 0/7)
 Dresden, Universitätsklinikum Carl Gustav Carus (hem, onco), CIC 808, G Ehninger, M Bornhäuser (155 (177) 95/60)
 Duisburg, St Johannes Hospital, CIC 519, C Aul, R Hartwig (23 (33) 0/23)
 Düsseldorf, Heinrich-Heine Universität; Medizinische Klinik (hem, onco) und St Antonius Hospital, Eschweiler (hem, onco), CIC 390, R Haas, G Kobbe, R Fuchs (95 (115) 48/47)
 Düsseldorf, Heinrich-Heine Universität; Zentrum für Kinderheilkunde, CIC 651, U Göbel, D Dilloo (33 (39) 19/4)
 Erlangen, Universität Erlangen-Nürnberg (hem, onco), Med Klinikum III, CIC 809:1, W Rösler (34 (39) 18/6)
 Erlangen, Universitäts-Klinik für Kinder und Jugendliche (hem, onco), CIC 809:2, W Holter (15 (17) 11/4)
 Essen, Universitätsklinikum (ads, peds), CIC 259, DW Beelen, R Peceny, W Havers, B Kremens, O Basu (178 (190) 163/15)
 Essen, Evangelisches Krankenhaus Essen-Werden GmbH (hem, onco), CIC 784, W Heit, M Wattad (59 (64) 16/43)
 Essen, Universitätsklinikum (hem), C Dührsen, R Noppeney (19 (26) 0/19)

Essen, West German Cancer Center, S Seeber, T Moritz (27 (61) 0/27)
 Frankfurt, KH Nordwest, A Knuth, E Jäger (6 (6) 0/6)
 Frankfurt, Klinikum Frankfurt (Oder), CIC 190, M Kiehl (10 (23) 0/10)
 Frankfurt a. M., Universitätsklinikum d. JW Goethe (hem, onco, peds), CIC 138, T Klingebiel (25 (28) 18/7)
 Frankfurt a. M., JW Goethe-Universität (ads), CIC 297, D Hoelzer, H Martin (72 (87) 32/40)
 Frankfurt/Mainz, Städtisches Klinikum (ads), HG Derigs, T Flohr (9 (11) 0/9)
 Frankfurt/Mainz, Onkologische Gemeinschaftspraxis, CIC 193, W Knauf (8 (12) 0/8)
 Freiburg i. Br., Universitätsklinik (ads, hem, onco), Med Klinik I, CIC 810, R Mertelsmann, J Finke, M Engelhardt (167 (188) 95/72)
 Freiburg i. Br., Universitäts-Kinderklinik (hem, onco), CIC 810, C Niemeyer, U Duffner (23 (35) 18/5)
 Gießen, Universitäts-Kinderklinik (hem, onco), CIC 326, A Reiter, W Wössmann (13 (14) 9/4)
 Göttingen, Georg-August Universität (hem, onco), CIC 552, L Trümper, B Glass (79 (93) 38/41)
 Greifswald, Ernst-Moritz-Arndt Universität (ads + peds), CIC 530, G Dölken, W Krüger (33 (42) 17/11)
 Gütersloh, Städt. Krankenhaus (hem, onco), C Gropp, S Rösel (3 (3) 0/3)
 Hagen, Kath. Krankenhaus (hem, onco), CIC 536, H Eimermacher, W Lindemann (19 (25) 0/19)
 Halle, Martin Luther Universität (hem, onco, ads), CIC 338, G Behre, H-J Schmoll, M Christopeit (59 (75) 23/36)
 Halle, Martin Luther Universität (hem, onco, peds), CIC 654, G Horneff, J Föll (4 (4) 2/4)
 Hamburg, KH St George (hem, onco), CIC 153, N Schmitz, P Dreger (36 (43) 5/31)
 Hamburg, Allgemeines Krankenhaus Altona (hem, onco), CIC 366, D Braumann, H Salwender (43 (69) 0/43)
 Hamburg, Eppendorf-Krankenhaus (hem, onco, ads, peds) CIC 614, AR Zander, N Kröger (137 (154) 117/20)
 Hamburg, Eppendorf-Krankenhaus (hem, onco, ads), Med Klin II, CIC 673, C Bokemeyer (36 (65) 0/36)
 Hameln, Kreiskrankenhaus Hameln (hem, onco), H Schmidt, K Buhrmann (11 (20) 1/10)
 Hamm, St Marien Hospital (hem, onco), H Dürk, H Pelz (8 (12) 0/8)
 Hamm, Evangelisches Krankenhaus (hem, onco), CIC 509, L Balleisen (30 (30) 0/30)
 Hannover, Medizinische Hochschule (hem, onco, ads), CIC 295, A Ganser, B Hertenstein (83 (103) 57/26)
 Hannover, Medizinische Hochschule (hem, onco, peds), CIC 295, K Welte, K Sykora (26 (29) 20/6)
 Hannover, KH Siloah, CIC 342, H Kirchner, M Sosada (16 (16) 0/16)
 Heidelberg, Ruprecht-Karls Universitäts-Poliklinik (hem, onco), CIC 524, P Deger, AD Ho, U Hegenbart (233 (327) 75/158)
 Homburg/Saar, Universität des Saarlandes (hem, onco), CIC 785, M Pfreundschuh, J Schubert (69 (96) 18/51)
 Idar-Oberstein, Klinik für Hämato-/Onkologie, CIC 592, AA Fauser, L Kraut (23 (25) 14/9)
 Jena, Klinik der FSU (hem, onco), Innere Medizin II, CIC 533, K Hoeffken, HG Sayer (75 (64) 24/30)
 Jena, Klinikum der FSU (hem, onco), Universitäts-Kinderklinik, CIC 750, F Zintl, D Fuchs (22 (23) 12/10)
 Kaiserslautern, Westpfalz-Klinikum (hem), CIC 357, H Link, F-G Hagmann (7 (9) 0/7)
 Karlsruhe, Städtisches Klinikum (hem, onco), CIC 290, M Bentz, S Wilhelm (23 (37) 0/23)
 Kassel, Städtische Kliniken (hem, onco), M Wolf, E Steinhauer (11 (14) 0/11)

Kiel, Christian-Albrechts-Universität (hem, onco), CIC 256, M Gramatzki, R Repp (97 (125) 50/47)

Köln, Universitäts-Klinik (ads, peds), CIC 534, M Hallek, V Diehl, Ch Scheid, F Berthold, T Simon (100 (117) 34/66)

Krefeld, Klinikum Krefeld, Med Klinik III, T Frieling, S Helmer (8 (11) 0/8)

Leipzig, Universitäts-Klinik (hem, onco), CIC 389, D Niederwieser, W Pönisch, R Krahl (175 (186) 127/48)

Lemgo, Klinikum Lippe, HP Lohrmann, C Constantin (7 (10) 0/7)

Lübeck, Med. Universität (ads), CIC 367:1, H Fehm, S Peters (17 (30) 0/17)

Lübeck, Med. Universität (peds), CIC 367:2, P Bucky, P Temming (1 (1) 0/1)

Lübeck, Städtisches KH Sud (hem, onco), Dr Heer-Sonderhoff, S Fetscher, A Heer-Sonderhoff (15 (25) 0/15)

Magdeburg, Otto-von-Guericke Universität (hem, onco), CIC 359, A Franke, M Koenigsmann (18 (23) 0/18)

Mainz, Johannes-Gutenberg-Universität (hem), Med. Klinik III, CIC 786, K Kolbe, D Wehler (87 (90) 40/47)

Mannheim, III Med. Klinik, R Hehlmann, J Hastka, E Lengfelder (24 (28) 0/24)

Marburg, Med. Universitätsklinik der Philipps Universität (hem, onco), CIC 645, A Neubauer, J Beyer (49 (68) 25/24)

Minden/Westfallen, Med. Klinik (hem, onco), H Bodenstein, HJ Tischer (16 (22) 0/16)

Mönchengladbach, KH Maria Hilf II, U Graeven, D Kohl (13 (25) 0/13)

Munich, Klinikum Grosshadern der LMU (ads, hem, onco) CIC 513, H-J Kolb, WHiddemann (116 (131) 66/50)

Munich, Klinikum Innenstadt der LMU (peds, hem, onco), CIC 513, Professor Borkhard (25 (27) 18/7)

Munich, SKH München-Harlaching (hem, onco), CIC 664, M Hentrich, R Hartenstein (16 (26) 0/16)

Munich, Städt Krankenhaus Schwabing (hem, onco, peds), CIC 189, S Burdach, A Wawer, M Nathrath (9 (12) 6/3)

Munich, Klinikum Innenstadt der LMU, M Reincke, C Straka (40 (59) 0/40)

Munich, SKH München-Schwabing (hem, onco), Ch Nerl, C Waterhaus, N Fischer (21 (36) 0/21)

Munich, Klinikum rechts der Isar (hem, onco), CIC 558, C Peschel, C v Schilling (47 (65) 13/34)

Münster, Westfälische Wilhelms-Universitäts Kinderklinik (hem, onco), CIC 505, H Jürgens, J Vormoor (30 (39) 13/7)

Münster, Westfälische Wilhelms-Universitäts Klinik (hem, onco), Innere Med. CIC 680, W Berdel, J Kienast (105 (129) 52/53)

Neuss, Lukaskrankenhaus (hem, onco), P Czygan, J Streuss (0 (0) 0/0)

Nürnberg, Städt Klinikum (hem, onco), CIC 625, M Wilhelm, H Wandt, K Schäfer (87 (98) 41/46)

Oldenburg, Klinikum Oldenburg (hem, onco), CIC 749, B Metzner, C Köhne (43 (66) 0/43)

Osnabrück, Klinik Osnabrück (hem, onco), CIC 101, R Peceny, HJ Hartlapp (9 (11) 0/9)

Potsdam, Klinikum Ernst von Bergmann (hem, onco), CIC 106, G Maschmeyer, R Pasold, A Haas (21 (25) 0/21)

Regensburg, Universitäts Klinikum (hem, onco), CIC 787, E Holler, A Reichle (106 (144) 51/55)

Rostock, Universitäts Klinikum (hem, onco), CIC 585, M Freund, J Casper (50 (78) 24/26)

Rotenburg-Wümme, Diakonie Klinikum, Dr Meinhardt (22 (22) 0/22)

Siegen, St Marien Krankenhaus (hem, onco), CIC 135, W Gassmann, T Gaska (18 (32) 0/18)

Stuttgart, Robert-Bosch-Krankenhaus (hem, onco), CIC 145, W Aulitzky, S Martin (50 (62) 8/42)

Stuttgart, Olgahospital (hem, onco), Pädiatrisches Zentrum, CIC 701, J Treuner, E Koscielniak (1 (1) 0/1)

Stuttgart, Bürgerhospital and Katharinenhospital (onco), H Mergenthaler, W Grimminger, J Schleicher (14 (25) 1/13)

Stuttgart, Diakonissen Krankenhaus, E Heidemann, M Bichler (14 (24) 0/14)

Tübingen, Medizinische Universitäts-Klinik (hem, onco), CIC 223, L Kanz, H Einsele, C Faul (124 (169) 72/52)

Tübingen, Medizinische Universitäts-Klinik (hem, onco), Abteilung Pädiatrie, CIC 535, R Handgretinger, D Niethammer, J Greil (44 (53) 33/11)

Ulm, Medizinische Universitäts-Klinik (hem, onco), CIC 204, H Döhner, D Bunjes (118 (137) 64/54)

Ulm, Kinderklinik der Universität, CIC 204, K Debatin, W Friedrich, A Schultz (35 (42) 31/4)

Villingen, Klinikum Villingen-Schwenningen, W Brugger, F Köhles, W Willenbacher (21 (25) 0/21)

Wiesbaden, Deutsche Klinik für Diagnostik, CIC 311, R Schwerdtfeger, M Schleuning, H Baurmann (90 (105) 84/6)

Wiesbaden, Dr Horst-Schmidt Klinikum (hem, onco), CIC 586, N Frickhofen, B Jung (18 (27) 0/18)

Wuppertal, HELIOS Klinikum Wuppertal (hem, onco), A Ragha-vachar (0 (0) 0/0)

Würzburg, Universitätsklinikum Würzburg (hem, onco, ads), CIC 712, K Wilms, F Weissinger, P Reimer (159 (194) 46/113)

Würzburg, Universitätsklinikum Würzburg (peds), CIC 196, P Schlegel (13 (18) 10/3)

Greece: (12 teams: 274 (304) 105/169)

Alexandroupolis, Thrace University Medical School (hem), CIC 681, G Bourikas, D Pantelidou (1 (1) 0/1)

Athens, Laikon General Hospital, CIC 328, Y Rombos, D Boutsis, V Kalotychou (19 (20) 0/19)

Athens, Medical Center (hem), CIC 603, A Pigadito (1 (1) 0/1)

Athens, University of Athens, CIC 604, I Dervenoulas (20 (20) 0/20)

Athens, Evangelismos Hospital (hem), CIC 622, D Karakassis, N Harhalakis, E Nikiforakis (72 (80) 39/33)

Athens, General Hospital G Gennimatas (hem), CIC 638, A Zomas (4 (4) 0/4)

Athens, Diagnosis & Therapy Centre 'Hygeia' (hem), Maroussi, CIC 643, G Karianakis (11 (11) 0/11)

Athens, Hellenic Cancer Institute St Savas (onco), CIC 751, A Efremidis, G Koumakis, M Stamatellou, K Papanastassiou, I Fillis (30 (39) 6/24)

Athens, 'Aghia Sophia' Children's Hospital, CIC 752, S Graphakos, G Vessalas (27 (27) 18/9)

Crete, University Hospital of Heraklion (peds, hem-onco), CIC 352, M Kalmanti (0 (0) 0/0)

Patras, University Medical School (hem), CIC 281, NC Zoumbos, A Spyridonidis, A Symeonidis, M Tiniakou (23 (31) 7/16)

Thessaloniki, The George Papanicolaou General Hospital (hem), CIC 561, AS Fassas (69 (66) 70) 35/31)

Hungary: (five teams: 255 (260) 74/181)

Budapest, National Medical Centre (hem ads), CIC 556, T Masszi, P Reményi (82 (82) 30/52)

Budapest, Szent Laszlo Hospital (peds), CIC 824, G Kriván, E Torbvágyi, L Lengyel (72 (75) 34/38)

Debrecen, University of Debrecen, CIC 648, A Kiss (35 (36) 0/35)

Miskolc, Postgraduate Medical School (peds), CIC 599, N Kalman, G Marton (24 (24) 10/14)

Pécs, University of Pécs, Internal Medicine, CIC 682, H Losonczy, M Dávid, Á Szomor (42 (43) 0/42)

Iceland: (one team: 14 (14) 0/14)

Reykjavik, National University Hospital (hem), CIC 605, S Reykdal (14 (14) 0/14)

Iran: (two teams: 364 (365) 236/128)

Shiraz, Nemazee Hospital (hem, onco), CIC 188, M Ramzi (40 (40) 22/18)
Teheran, Shariati Hospital (hem, onco), CIC 633, A Ghavamzadeh (324 (325) 214/110)

Ireland: (six teams: 152 (158) 59/93)

Cork, University Hospital (hem), O Gilligan (7 (7) 0/7)
Cork, Regional Hospital, M Cahill (5 (5) 0/5)
Dublin, St James's Hospital (hem), CIC 257, P Browne (101 (104) 47/54)
Dublin, St Vincent's Hospital (hem, onco), CIC 541, J Crown, K Murphy (10 (10) 0/10)
Dublin, Our Lady's Hospital of Sick Children, Crumlin, CIC 774, A O'Meara (18 (18) 12/6)
Galway, University College Hospital, M Murray (11 (14) 0/11)

Israel: (seven teams: 499 (566) 274/225)

Haifa, Rambam Medical Center (hem, ads, peds), CIC 345, J Rowe (107 (116) 53/54)
Jerusalem, Hadassah University Hospital (ads, peds), CIC 258, R Or, S Slavin: (115 (136) 71/44)
Petach-Tikva, Children's Medical Center, CIC 755, J Stein (29 (32) 20/9)
Rehovot, Kaplan Hospital (hem), CIC 327, A Berribi (10 (10) 0/10)
Tel Aviv, Sourasky Medical Center, CIC 161, E Naparstek (23 (25) 13/10)
Tel Hashomer, Chaim Sheba Medical Center (hem, onco, ads) CIC 754, A Nagler, A Shimoni (184 (212) 96/88)
Tel Hashomer, Chaim Sheba Medical Center (hem, onco, peds) CIC 572, A Toren, H Golan, B Bielorai (31 (35) 21/10)

Italy: (95 teams: 3781 (4620) 1264/2517)

Alessandria, SS Antonio e Biagio e C Arrigo (hem), CIC 825, A Levis, A Allione, M Pini, F Salvi (32 (45) 11/21)
Ancona, Ancona University Hospital (hem), CIC 788, A Olivieri, P Leoni (49 (58) 13/36)
Ascoli Piceno, Mazzoni Hospital, CIC 119, P Galieni (21 (30) 1/20)
Avellino, AOS Giovanni Di Guglieimo (hem), CIC 789, N Cantore, G Storti (23 (24) 8/15)
Avezzano, Ospedale Civile di Avezzano, F Recchia (4 (4) 0/4)
Aviano, CRO Aviano (onco), CIC 162, M Michieli, M Rupolo, M Mazzucato, F Lollo (36 (41) 0/36)
Bari, Università degli Studi di Bari (hem), CIC 649, V Pavone, V Liso (33 (33) 13/20)
Bergamo, Ospedale Riuniti, CIC 658, A Rambaldi (79 (95) 33/46)
Bologna, St Orsola-Malpighi (hem, onco), CIC 240, G Bandini, F Bonifazi, M Baccarani (125 (166) 42/83)
Bologna, St Orsola-Malpighi, Oncologia Medica, CIC 657, A Martoni, C Zamagni (0 (0) 0/0)
Bologna, Poli. S Orsola, Clinica Pediatrica III, CIC 790, A Pession (31 (33) 17/14)
Bolzano, Ospedale S Maurizio (hem), CIC 299, M Casini, P Fabris, P Coser (44 (78) 12/32)
Brescia, Ospedali Civili, CIC 288, G Rossi, C Almici (76 (129) 0/76)
Brescia, Università degli Studi di Brescia (peds), CIC 741, F Porta, A Ugazio (21 (22) 16/5)
Brindisi, Ospedaliere 'A Di Summa', Perrino Hospital (hem), CIC 920, G Quarta, S Pinna (12 (12) 1/11)
Cagliari, Ospedale A Businco (hem), CIC 791, P Dessalvi (54 (58) 21/33)
Cagliari, BMT Center CIC 811, G La Nasa (32 (34) 10/22)
Cagliari, Ospedale per le Microcitemie (peds), CIC 812, F Argioli, A Cao (11 (14) 10/1)
Catania, Ospedale Ferrarotto (hem), CIC 792, R Giustolisi, G Milone (55 (60) 18/37)

Cremona, Ospedale Maggiore (hem), Medicina II, CIC 226, S Morandi, P Spedini, M Tajana, C Fiamenghi (11 (15) 0/11)
Cuneo, Hospital S Croce E Carle (hem), CIC 606, A Gallamini, N Mordini (26 (33) 11/15)
Ferrara, St Anna Hospital (hem), CIC 330, F Lanza, S Moretti, GM Rigolin, A Cuneo (20 (26) 0/20)
Firenze, Ospedale di Careggi (hem), CIC 304, A Bosi, S Guidi (87 (94) 21/66)
Firenze, Azienda Ospedale 'A Meyer' (peds), CIC 600, G Bernini (13 (16) 5/8)
Forlì, Morgagni-Pierantoni Hospital (onco), CIC 298, GL Frassinetti, D Amadori (no report)
Genova, Università, CIC 139, F Patrone, A Ballestrero (40 (46) 0/40)
Genova, Ospedale S Martino (hem), CIC 217, A Bacigalupo, (91 (100) 77/14)
Genova, Istituto Giannina Gaslini (hem, onco), CIC 274, G Dini (40 (55) 22/18)
Genova, Ospedaliere Universitaria San Martino (hem), CIC 987, A Carella (50 (55) 15/35)
Latina, Ospedale S Maria Goretti, CIC 379, A De Blasio, E Zappone (20 (24) 0/20)
Messina, Policlinico Universitario (onco), CIC 669, V Pitini (9 (12) 0/9)
Milano, Ospedale di Niguarda (onco ST), CIC 184, S Siena, P Pedrazzoli, R Schiavo (33 (49) 3/30)
Milano, Ospedale Maggiore di Milano, CIC 265, G Lambertenghi Delilieri (37 (48) 8/29)
Milano, Ospedale Fatebenefratelli e Oftalmico (onco), CIC 269, A Scanni, C Bianchi, D Pedretti (1 (2) 0/1)
Milano, Ospedale di Niguarda (hem), CIC 294, P Marengo, R Cairoli, G Grillo (76 (79) 16/60)
Milano, Istituto Europeo di Oncologia, CIC 331, G Martinelli (56 (68) 4/52)
Milano, Ist Clinico Humanitas (hem-onco), CIC 354, L Castagna, A Santoro (67 (84) 12/55)
Milano, Istituto Nazionale Tumori (ads, onco, peds), CIC 616, P Corradini, A Gianni, R Luksch (127 (161) 22/105)
Milano, S Carlo Borromeo Hospital (onco), CIC 683, L Tedeschi (6 (7) 0/6)
Milano, Istituto Scientifico HS Raffaele, CIC 813, F Ciceri, M Bregni (133 (205) 73/60)
Modena, University of Modena (hem, onco), CIC 543, F Narni, A Donelli, G Torelli (44 (57) 9/35)
Monza, Ospedale S Gerardo (peds), CIC 279, C Uderzo (25 (27) 20/5)
Monza, Ospedale S Gerardo de 'Tintori, CIC 544, P Pioltelli, E Pogliani (42 (45) 15/27)
Napoli, AORNA Cardarelli, Div. Di Oncologia, CIC 313, C Battista, G Pacilio, B Chiurazzi, G Iodice (12 (12) 0/12)
Napoli, Hospital 'Pausilipon' (hem peds), V Poggi, M Ripaldi (17 (20) 11/6)
Napoli, Cardarelli Hospital (hem), CIC 607, F Ferrara (55 (66) 0/55)
Napoli, Cardarelli Hospital (hem), CIC 837, V Mettievier (22 (24) 0/22)
Napoli, Federico II University (hem), CIC 766, B Rotoli, C Selleri, G De Rosa (39 (46) 13/26)
Napoli, National Cancer Institute (hem, onco), CIC 839, A Pinto, G Marcacci (19 (26) 0/19)
Noale, Civic Hospital (onco), CIC 563, O Vinante, G Azzarello (4 (4) 0/4)
Nuoro, Ospedale San Francesco (hem), CIC 793, A Gabbas, A Palmas (1 (1) 0/1)
Orbassano, Ospedale San Luigi Orbassano, CIC 378, G Saglio, A Guerrasio (27 (37) 3/24)
Padova, Centro Leucemie Infantili, CIC 285, C Messina, S Cesaro, L Zanesco, S Varotto (29 (35) 17/12)

Padova, Istituto Oncologia Veneto (IVO), Oncologia Medica II, CIC 319, S Aversa, S Monfardini (10 (12) 0/10)

Palermo, Ospedale die Bambini (pedshem, onco), CIC 109, D Caselli (15 (15) 5/10)

Palermo, Ospedale V Cervello (hem), CIC 392, R Scimè, A Cavallaro (48 (58) 21/27)

Palermo, Ospedale 'La Maddalena' (hem, onco), CIC 692, M Musso, F Porretto, A Crescinanno (56 (67) 14/42)

Palermo, Div. di Ematologia con Trapianto di Midullo, Uni degli studi di Palermo (hem), CIC 814, E Iannitto (9 (12) 0/9)

Parma, Cattedra di Ematologia, University of Parma, CIC 245, V Rizzoli, M Mangoni (17 (21) 1/16)

Pavia, Policlinico S Matteo (hem), CIC 286, EP Alessandrino (84 (85) 25/59)

Pavia, Policlinico St Matteo (hem, onco, peds), CIC 557, F Locatelli (102 (110) 93/9)

Pavia, Policlinico St Matteo (onco), CIC 562, M Danova (0 (0) 0/0)

Pavia, Fondazione S Maugeri (onco), CIC 771, A Zambelli, G Robustelli della Cuna (12 (14) 1/11)

Perugia, Policlinico Monteluca (onco), CIC 573, AM Liberati, F Grignani (5 (9) 0/5)

Perugia, Policlinico Monteluca (hem), Università, CIC 794, MF Martelli, F Aversa, A Tabilio (111 (114) 52/59)

Pesaro, Ospedale San Salvatore, CIC 529, G Visani, G Lucarelli (32 (39) 16/16)

Pescara, Ospedale Civile (hem), CIC 248, P di Bartolomeo (50 (54) 40/10)

Piacenza, Ospedale Civile (hem, onco), CIC 163, L Cavanna (20 (24) 5/15)

Pisa, University of Pisa (peds, hem, onco), CIC 795, C Favre (21 (22) 14/7)

Pisa, University of Pisa (ads, hem, onco), CIC 132, M Petrini, F Papineschi (59 (72) 16/43)

Ravenna, Ospedale Civile (hem, onco), CIC 306, G Rosti (36 (43) 0/36)

Reggio di Calabria, Azienda Ospedale 'Riuniti e Morelli', CIC 587, P Iacopino, G Console (83 (98) 26/57)

Reggio Emilia, Arcispedale S Maria Nuova (hem), CIC 660, L Gugliotta (24 (27) 8/16)

Rimini, Ospedale Infermi Rimini (hem, onco), P Fattori (15 (18) 0/15)

Rionero in Vulture, Centro di Riferimento Oncologico della Basilicata (hem), CIC 185, P Musto, N Di Renzo (5 (6) 1/4)

Roma, Università 'La Sapienza' (hem), Faculty I, CIC 232, R Foa, G Meloni (107 (128) 26/81)

Roma, Ospedale S Camillo (hem), CIC 287, I Majolino, A Locasciulli (41 (42) 19/22)

Roma, Università Cattolica (hem), CIC 307, S Cuore, S Sica, G Leone (59 (68) 19/40)

Roma, Universitario Tor Vergata (hem) CIC 756, Ospedale Bambino Gesù (hem), Regina Elena Cancer Institute (hem, onco), Università 'La Sapienza' (hem) Faculty II, W Arcese, S Amadori, P De Fabritiis, G De Rossi, MC Petti, G Avvisati, B Monarca, L Annino (122 (146) 43/79)

Roma, Ospedale Bambino Gesù (onco), CIC 796, A Donfrancesco, A Jenkner, A Castellano, L De Sio, R Cozza, P Fidani, C De Laurentis (23 (29) 0/23)

San Giovanni Rotondo, Hospital Casa Sollievo Sofferenza (hem), CIC 526, N Cascavilla, M Corsetti, M Greco (50 (65) 20/30)

Sassari, Università Di Sassari (hem) CIC 870, M Longinotti (8 (10) 0/8)

Siena, Ospedale Sclavo (hem), CIC 321, F Lauria (29 (37) 9/20)

Taranto, Ospedale Nord (hem), CIC 332, P Mazza, G Palazzo, B Amurri (46 (50) 13/33)

Torino, Azienda Ospedaliera S Giovanni, CIC 231, M Falda, F Locatelli (76 (99) 35/14)

Torino, Ospedale Regina Margherita (peds), CIC 305, F Fagioli, E Vassallo (40 (52) 20/20)

Torino, Ospedale Mauriziano Umberto I, IRCC, CIC 377, M Aglietta, A Capaldi, F Carnevale (18 (24) 10/8)

Torino, Ospedale S Giovanni (hem), CIC 696, M Boccadoro, M Massaia, C Tarella, B Benedetto, D Caracciolo, A Pileri (77 (128) 15/62)

Tricase (Lecce), Hospital C Panico, CIC 652, V Pavone (22 (25) 4/18)

Trieste, Istituto per l'Infanzia, Clinical Pediatrica, CIC 525, M Andolina (23 (23) 15/18)

Udine, Policlinico Universitario (hem), CIC 705, R Fanin (79 (94) 37/42)

Venezia, Ospedale Civile Riuniti di Venezia (hem), CIC 502, T Chiesi, M Vespignani, M Chinello (17 (23) 3/14)

Verbania-Pallanza, UOA Oncologia Medica, Ospedale di Verbania, CIC 385, A Luraschi (8 (8) 0/8)

Verona, Policlinico di Borgo Roma (hem, onco), CIC 623 + CIC 514, G Perona, F Benedetti, G Cetto (55 (75) 20/35)

Vicenza, Ospedale S Bortolo (hem), CIC 797, R Raimondi, F Rodeghiero (50 (59) 15/35)

Latvia: (one team: 14 (14) 3/11)

Riga, Clinic Linezers, CIC 583, S Lejniece (14 (14) 3/11)

Lebanon: (one team) Beirut, American University of Beirut, CIC 369, A Bazarbachi

Liechtenstein: no report

Lithuania: (two teams: 90 (110) 33/60)

Vilnius, University Hospital Santariskiu Klinikos (hem), CIC 644, A Slobinas, I Trociukas (81 (97) 30/51)

Vilnius, University Children's Hospital (hem, onco), CIC 508, J Rascon (12 (13) 3/9)

Luxemburg: no report

Macedonia: (one team: 14 (17) 4/10)

Skopje, Medical Faculty (hem), CIC 381, B Georgievski (14 (17) 4/10)

Malta: no report

Moldova: no report

Monaco: no report

Netherlands: (13 teams: 860 (919) 357/503)

Amsterdam, Academic Medical Center (ads, peds), CIC 247, J van der Lelie, H van den Berg (peds) (44 (52) 14/30)

Amsterdam, Free University Hospital (hem), CIC 588, GJ Ossenkoppele (97 (104) 43/54)

Amsterdam, The Netherlands Cancer Institute, CIC 976, S Rodenhuis, J Baars (26 (39) 0/26)

Enschede, The Medisch Spectrum Twente, CIC 360, Dr Schaafsma (15 (15) 0/15)

Groningen, University Hospital (hem), CIC 546, G van Imhoff (66 (70) 6/60)

The Hague, Haga Hospital (Leyenburg), CIC 547, PW Wijermans (26 (28) 0/26)

Leiden, University Medical Centre (ads, peds), CIC 203, R Willemze, M Egeler (99 (105) 76/23)

Maastricht, University Hospital (hem, onco), CIC 565, HC Schouten, J Wagstaff (73 (78) 19/54)

Nieuwegein, St Antonius Hospital, CIC 200, D Biesma, G Veth, O de Weerd (18 (20) 0/18)

Nijmegen, University Hospital (ads, peds, onco), CIC 237, A Schattenberg, P Hoogerbrugge (105 (112) 51/54)

Rotterdam, Dr Daniel den Hoed Cancer Center, CIC 246, JJ Cornelissen (149 (151) 59/90)

Utrecht, University Hospital (hem, ads, peds), CIC 239, LF Verdonck, NM Wulffraat (130 (133) 89/41)

Zwolle, Isala Kliniecken/Sophia Ziekenhuis, CIC 548, M von Marwijk Kooy (12 (12) 0/12)

Norway: (six teams: 205 (217) 62/143)

Bergen, Haukeland Universitets Sjukehus, CIC 197, P Ernst (31 (35) 6/25)

Oslo, Rikshospitalet Radiumhospitalet, CIC 235, D Albrechtsen, L Brinch (75 (78) 53/22)

Oslo, Rikshospitalet Radiumhospitalet (onco), CIC 782, G Lauritzen, S Kvaloy (41 (46) 3/38)

Oslo, Ulleval Universitets Sykehus (hem), F Wisløff, J-MTangen (29 (29) 0/29)

Tromsø, University Hospital of Northern Norway (hem), IM Dahl (8 (8) 0/8)

Trondheim, St Olavs Hospital, J Hammerstrom, A Waage (21 (21) 0/21)

Poland: (17 teams: 774 (866) 281/493)

Bydgoszcz, Nicolars Copernicus University (peds, hem, onco), CIC 764, M Wysocki, J Stycinski (20 (22) 5/15)

Gdansk, Medical University (hem), CIC 799, A Hellmann (54 (54) 17/37)

Katowice, Silesian Medical Academy (hem), CIC 677, J Holowiecki (136 (167) 57/79)

Krakow, Jagiellonian University (hem), CIC 553, A Skotnicki (43 (49) 6/37)

Krakow, Polish-American Children's Hospital, JUMC, CIC 507, J Gozdziak (8 (8) 4/4)

Lodz, Medical University of Lodz (hem), CIC 171, T Robak (20 (21) 0/20)

Lublin, Children's University Hospital (hem, onco), CIC 678, J Kowalczyk (16 (16) 11/5)

Lublin, University Medical School (hem, onco), CIC 695, A Dmoszynska, M Wach, A Walter-Croneck, W Legiec (54 (55) 5/49)

Poznan, Institute of Pediatrics, CIC 641, J Wachowiak (28 (29) 23/5)

Poznan, K Marcinkowski University (hem), CIC 730, M Komarnicki (68 (69) 23/45)

Warsaw, Institute of Haematology and Blood Transfusion, CIC 693, B Marianska, L Konopka, B Nasilowska, K Halaburda, M Szczepinski (28 (30) 17/11)

Warsaw, Maria Sklodowska-Curie, Centre of Oncology, CIC 800, J Walewski (59 (61) 0/59)

Warsaw, Central Hospital Military Medical Academy (hem, onco), CIC 816, P Rzepecki, K Sulek, C Szczylik (34 (43) 8/26)

Warsaw, Central Clinical Hospital (hem, onco), CIC 954, W Wiktor-Jedrzejczak, A Deptala, M Rokicka (59 (80) 16/43)

Wroclaw, Lower Silesian Centre for Cellular Transplantation with National Bone Marrow Donor Registry, CIC 538, A Lange (52 (61) 28/24)

Wroclaw, Medical Academy (hem), CIC 699, K Kuliczowski (29 (29) 9/20)

Wroclaw, University of Medicine (peds, hem, onco), CIC 817, A Chybicka (66 (72) 52/14)

Portugal: (six teams: 285 (331) 88/197)

Coimbra, University Hospital, CIC 164, N Costa (23 (25) 0/23)

Lisbon, Instituto Portugues de Oncologia, CIC 300, M Abecasis, F Leal Costa (65 (70) 25/40)

Lisbon, Hospital de Santa Maria, CIC 636, J Alves do Carmo, F de Lacerda (34 (40) 16/18)

Lisbon, Hospital de St Antonio dos Capuchos, CIC 826, A Botelho de Sousa (42 (54) 0/42)

Porto, Instituto Portugues de Oncologia, CIC 291, P Pimentel, F Campilho (94 (102) 47/47)

Porto, Hospital S Joao (hem onco), CIC 329 (merged with CIC 572), JE Guimaraes, F Principe (27 (40) 0/27)

Romania: (three teams: 52 (58) 9/43)

Bucharest, Fundeni University Hospital (hem), CIC 296, AD Moicean, D Colita, C Arion (25 (28) 5/20)

Targu-Mures, Sectia Clinica de Hematologie, CIC 178, I Benedek (21 (22) 4/17)

Timisoara, University of Medicine (Ill peds, hem/onco), CIC 174, M Serban, C Jinca (6 (8) 0/6)

Russia: (17 teams: 333 (358) 112/221)

Ekaterinburg, City Hospital no. 7, AB Loginov (no report)

Ekaterinburg, Regional Hospital no. 1, TS Konstantinova, VA Shalaev (23 (28) 5/18)

Moscow, Russian Children's Hospital (hem), CIC 694, A Maschan, E Skorobogato, E Pachanov (43 (50) 35/8)

Moscow, Cancer Research Center, CIC 757, KN Melkova (35 (35) 1/34)

Moscow, Institute of Biophysics, AE Baranov (10 (15) 0/10)

Moscow, Cancer Research Center (peds, hem/onco), G Mentrevich (27 (27) 8/19)

Moscow, Research Hematology Center of RAS, VG Savtchenko (35 (39) 20/15)

Moscow, Main Military Clinical Hospital (hem), SV Shamansky (23 (27) 0/23)

Moscow, City Clinical Hospital no. 38, NA Obidina (0 (0) 0/0)

Novosibirsk, Insitute of Clinical Immunology, CIC 376, I Lisukov (45 (45) 0/45)

Samara, Regional Hospital, VA Rossiev (8 (8) 1/7)

St Petersburg, Clinical Center for Advanced Medical Tech, CIC 370, E Podoltseva, V Soldatenkov, O Rysanyanskaya (no report)

St Petersburg, Military Medical Academy (hem), CIC 520, A Novik (no report)

St Petersburg, Research Institute of Hematology, KM Abdulkadrov (14 (14) 0/14)

St Petersburg, State Pavlov Medical University (hem), CIC 725, BV Afanassiev, L Zubarovskaya (55 (55) 42/13)

St Petersburg, Leningrad Regional Clinical Hospital, IS Zyuzgin (7 (7) 0/7)

Yaroslavl, Regional Clinical Hospital (hem), VA Lapin (8 (8) 0/8)

San Marino: no report

Saudi Arabia: (two teams: 218 (232) 153/65)

Riyadh, King Faisal Specialist Hospital and Research Centre (onco, ads, hem), CIC 397.1, M Al Jurf (113 (118) 62/51)

Riyadh, King Faisal Specialist Hospital and Research Centre (peds, hem, onco), CIC 397.2, M Ayas (105 (114) 91/14)

Serbia and Montenegro: (four teams: 59 (67) 18/41)

Belgrade, Mother and Child Health Institute, CIC 358, D Vujic (12 (12) 6/6)

Belgrade, Clinical Centre of Serbia (hem), CIC 373, J Bila, D Antic (10 (11) 0/10)

Belgrade, Military Medical Academy (hem), CIC 582, D Stamatovic (29 (36) 12/17)

Novi Sad, Institute of Internal Diseases, Clinical Centre of Novi Sad (hem), CIC 655, S Popoviae (8 (8) 0/8)

Slovakia: (five teams: 144 (150) 31/113)

Bansra Bystrica, Roosevelt Hospital (hem), CIC 333, I Markuljak, E Kralikova (14 (15) 0/14)

Bratislava, National Cancer Institute, CIC 560, J Lakota (70 (70) 6/64)

Bratislava, University Hospital (hem), CIC 610, M Mistrik (31 (35) 17/14)

Bratislava, University Hospital, 2nd Children's Clinic, CIC 684, S Sufliarska, J Horáková, I Bodova (11 (12) 8/3)

Kosice, University Hospital LF UP JS (hem), CIC 984, E Tothova (18 (18) 0/18)

Slovenia: (one team: 75 (85) 18/57)

Ljubljana, University Medical Centre (hem), CIC 640, J Pretnar (75 (85) 18/57)

South Africa: (one team)

Cape Town, Constantiaberg Medi Clinic (hem), CIC 772, P Jacobs, L Wood

Spain: (65 teams: 1803 (1927) 595/1208)

Alicante, Hospital General, C Rivas-Gonzales (19 (19) 0/19)

Barcelona, Hospital Clinic (hem, onco), CIC 214, E Montserrat, E Carreras (90 (93) 50/40)

Barcelona, Santa Creu I Sant Pau (adults), CIC 260, J Sierra, S Brunet (94 (103) 48/46)

Barcelona, Santa Creu I San Pau (peds), CIC 260, I Badell Serra, J Cubells-Riero (11 (13) 4/7)

Barcelona, Hospital Vall d'Hebron, Materno Infantil, CIC 527:1, J Sanchez de Toledo Codina (45 (46) 30/15)

Barcelona, Hospital General Vall d'Hebron, CIC 527:2, A Julia-Font, J Zuazu (24 (25) 6/18)

Barcelona, Hospital Mutua de Terrasa (hem-onco), T Marti (10 (10) 0/10)

Barcelona, Hospital Universitario Germans Trias i Pujol, CIC 613, J Ribera (53 (53) 18/35)

Barcelona, Hospital Sant Joan de Deu, CIC 668, J Estella Aguado (8 (8) 0/8)

Barcelona, Hospital Duran i Reynals (hem), Institut Catala d'Oncologia, CIC 759, R Duarte Palomino, C Ferra, J Berlanga, A Fernández (31 (31) 16/15)

Caceres, Hospital San Pedro de Alcantara, M Luz Amigo Lozano (10 (11) 0/10)

Cadiz, Hospital del SAS de Jerez (hem), CIC 612, A Leon (24 (27) 7/17)

Cadiz, Hospital Universitario 'Puerta del Mar' (hem), CIC 679, J Gil (5 (5) 0/5)

Canary Isles, Las Palmas, Hospital Insular (hem), CIC 335, J Gonzalez-San Miguel (7 (8) 0/7)

Canary Isles, Las Palmas, Hospital Materno-Infantil (hem, onco), J Lodos Rojas, A Molinés (3 (3) 0/3)

Canary Isles, Las Palmas, Hospital Universitario de Gran Canaria 'Dr Negrin', CIC 537, T Molero, R Mataix, C Campo, S Jiménez (17 (17) 5/12)

Canary Isles, Tenerife, Hospital Universitario de Canarias, L Hernandez Nieto, MT Hernandez Garcia (22 (22) 0/22)

Canary Isles, Tenerife, Hospital NS De la Candelaria, J Garcia-Talavera, J Breña, P Rios Rull (8 (8) 0/8)

Castellon de La Plana, Hospital General de Castellon (hem), R Garcia-Boyero (8 (8) 0/8)

Cordoba, Hospital Reina Sofia (hem), CIC 238, A Torres Gomez (57 (62) 22/35)

Cruces-Barakaldo, Hospital de Cruces (hem), CIC 393, I Zuazua-Verde, F Floristan (30 (36) 0/30)

Galdakao, Hospital de Galdakao (hem), CIC 975, J Ojanguren, K Atutxa (16 (16) 0/16)

Granada, Hospital Virgen de la Nieves (hem), CIC 559, JM de Pablos Gallego (26 (28) 6/20)

Jaen, Hospital Ciudad de Jaen (hem), A Alcamal (11 (11) 0/11)

La Coruna, Complejo Hospitalario Juan Canalejo, CIC 361, FJ Batlle, C Ramirez, P Torres, R Rodriguez, R Varela (38 (41) 4/34)

Lérida, Hospital Arnau de Villanova, J Macia (5 (5) 0/5)

Lugo, Hospital Xeral-Calde, M Gonzales-Lopez (7 (7) 0/7)

Madrid, Hospital de la Princesa (hem), CIC 236, JM Fernández Rañada, A Figuera, A Alegre (45 (51) 28/17)

Madrid, Hospital Doce de Octubre, CIC 382, JJ Lahuerta (hem), H Cortés Funes (onco), J Lopez Perez (peds) (64 (66) 10/54)

Madrid, Hospital Ramon y Cajal (ads), CIC 615, J Odriozola, J Pérez de Oteyza, J Lopez, J Garcia Larana (30 (30) 8/22)

Madrid, Hospital Ramon y Cajal (peds), CIC 615, A Munoz Villa (4 (4) 3/1)

Madrid, Clinica Puerta de Hierro (hem), CIC 728, MN Fernandez, JR Cabrera Marin (22 (28) 12/10)

Madrid, Hospital Nino Jesus (peds, onco), CIC 732, MA Diaz (39 (48) 30/9)

Madrid, Hospital Universitario San Carlos (hem), CIC 733, J Diaz Mediavilla, L Llorente, R Martinez (28 (28) 0/28)

Madrid, Hospital La Paz Infantil (hem, onco) and Hospital General La Paz (ads), CIC 734, A Martinez-Rubio, A Sastre, F Hernandez Navarro, M Canales (43 (46) 25/18)

Madrid, Unidad de TMO-ONC 4, Hospital Gregorio Maranon, CIC 819, JL Diez Martin (40 (45) 19/21)

Madrid, Clinica Moncloa (hem), JM Fernandez-Ranada, A Escudero (13 (13) 0/13)

Madrid, Clinica Ruber, JM Fernandez-Ranada, A Escudero (17 (17) 0/17)

Madrid, Hospital Universitario de Getafe (hem), F Oña Compan, N Somolinos (7 (8) 0/7)

Madrid, Fundacion Jimenez Diaz (hem, onco), CIC 309, JL Lopez-Lorenzo, F Lobo, M Callejas (15 (15) 0/15)

Malaga, Carlos Haya Hospital (hem), CIC 576, M Gonzalez, M Pascual (55 (55) 15/40)

Murcia, Hospital Univ. 'Virgen de la Arrixaca', CIC 323, A Morales-Lazaro, MJ Majado-Martinez (21 (22) 0/21)

Murcia, Hospital Morales Meseguer, CIC 735, JM Moraleda Jimenez, V Vicente-Garcia, I Heras (48 (52) 24/24)

Orense, Hospital Cristal-Pinor (hem), J-L Sastre-Moral (12 (15) 0/12)

Oviedo, Hospital Covadonga (hem), CIC 642, D Carrera Fernandez (26 (26) 11/15)

Palma de Mallorca, Hospital Son Dureta (hem), CIC 722, J Besalduch, M Canaro (25 (34) 11/14)

Palma de Mallorca, Hospital son Llatzer, CIC 110, J Bargay-Lleonart (14 (15) 0/14)

Pamplona, Hospita de Navarra (hem), CIC 577, M Orue, MJ Uriz (24 (24) 0/24)

Pamplona, Clinica Universitaria de Navarra, CIC 737, J Rifon (34 (36) 8/26)

Pontevedra, Hospital Montecelo (onco), CIC 549, M Constela (1 (1) 0/1)

Salamanca, Hospital Clinico (hem), CIC 727, D Caballero (83 (83) 31/52)

San Sebastian, Hospital Nostra Senora de Aranzazu, CIC 598, R Lasa, J Marin, D Martinez (32 (35) 5/27)

Santander, Hospital Universitario M de Valdecilla (hem), CIC 242, A Iriondo, E Conde (52 (63) 22/30)

Santiago de Compostela, Hospital Xeral de Galicia (hem), CIC 570, JL Bello (20 (22) 5/15)

Sevilla, Hospital Universitario Virgen del Rocio, CIC 769, I Espigadot (52 (56) 25/27)

Tarragona, Hospital de Tarragona Joan XXIII (hem), A Llorente Cabrera (11 (11) 0/11)

Valencia, Hospital Clinico Universitario (hem, onco), CIC 282, J Garcia-Conde, C Solano (61 (65) 22/39)

Valencia, Hospital Infantil La Fe (peds, onco), CIC 653, V Castel, A Verdeguer, JM Fernandez (27 (27) 11/16)

Valencia, Hospital Universitario La Fe (hem), CIC 663, MA Sanz, GF Sanz (80 (87) 46/34)

Valencia, Hospital Doctor Peset (hem), P Ribas Garcia (8 (8) 0/8)

Valencia, Instituto Valenciano de Oncologia, V Guillen (3 (3) 0/3)

Valladolid, Hospital Rio Hortega, CIC 611, J Garcia Frade (18 (20) 0/18)

Vigo, Hospital Xeral-Cies, A Martinez-Dalmau (25 (27) 4/21)

Zaragoza, Clinico Universitario Lozano Blesa (hem, onco), CIC 531, L Palomera, M Gutierrez, A Tres, J Mayordomo (12 (12) 0/12)

Zaragoza, Hospital Miguel Servet (hem + onco) M Giralt, G Pérez-Lugmus, D Rubio-Félix, A Anton (13 (13) 4/9)

Sweden: (eight teams: 555 (604) 198/357)

Goteborg, CHECT (ads + peds), CIC 289, M Brune, A Fasth (112 (124) 38/74)

Linköping, University Hospital (hem), CIC 740, N Theorin (35 (39) 7/28)

Lund, University Hospital (hem), CIC 283, S Lenhoff (90 (94) 33/57)

Malmö, University Hospital, T Ahlgren (7 (7) 0/7)

Örebro, University Hospital (hem, onco), CIC 738, U Tidefelt (15 (20) 0/15)

Stockholm (Huddinge), Karolinska University Hospital (hem, onco), CIC 212, P Ljungman (147 (159) 73/74)

Umea, Norrland University Hospital, CIC 731, A Wahlin, V Lazarevic, J Lindh, B Markevårn (52 (56) 14/38)

Uppsala, University Hospital (ads + peds), CIC 266, G Oberg (97 (105) 33/64)

Switzerland: (nine teams: 314 (427) 137/204)

Aarau, Kantonsspital (hem, onco), CIC 316, M Wernli, M Bargetzi (23 (30) 0/23)

Basel, Kantonsspital (hem, onco), CIC 202, A Gratwohl, T Kühne, R Herrmann (76 (101) 61/15)

Bellinzona, Ospedale San Giovanni (hem, onco), CIC 829, F Cavalli, M Ghielmini, L Leoncini (13 (17) 0/13)

Bern, Inselspital (ads, peds, hem, onco), CIC 221, K Leibundgut, C Zwicky, M Fey, T Pabst (42 (57) 0/42)

Geneva, Hôpital Cantonal Universitaire (hem, onco), CIC 261, J Passweg, Y Chalandon, P Wacker (34 (38) 34/0)

Lausanne, CHUV (hem, onco), CIC 820, M Schapira, T Kovacsics, S Leyvraz, N Ketterer (52 (65) 0/52)

St Gallen (hem, onco), Kantonsspital, CIC 324, U Hess (13 (18) 0/13)

Zurich, University Hospital (ads, hem, onco), CIC 208, U Schanz, C Renner (70 (82) 27/43)

Zurich, University Hospital (peds, hem, onco), CIC 334, R Seger (18 (19) 15/3)

Tunisia: (one team: 97 (113) 44/53)

Tunis, Centre National de Greffe de Moelle Osseuse, CIC 183, B Othman-Tarck (97 (113) 44/53)

Turkey: (26 teams: 790 (823) 394/396)

Adana Yuregir, Baskent University Adana Research and Training (hem), CIC 589, H Ozdogu (7 (7) 3/4)

Ankara-Sihhiye, Hacettepe University (hem), CIC 168, H Goker, O Ozcebe, I Haznedaroglu, S Dundar (14 (14) 13/1)

Ankara-Besevler, Gazi University (hem), CIC 169, G Sucak (58 (69) 35/23)

Ankara, Hacettepe University, Institute of Oncology, CIC 292, E Kansu, Y Koc, E Ozdemir (29 (30) 3/26)

Ankara-Etlük, GATA BMT Center, CIC 372, F Arpacı, A Özet, C Beyan, A Ural (60 (60) 21/39)

Ankara, Ihsan Dogramaci Childrens Hospital, CIC 399, A Tuncer, D Ucan (24 (26) 24/0)

Ankara, University School of Medicine Ibni Sina Hospital (hem), CIC 617, G Gürman, M Arat (114 (121) 63/51)

Ankara, University of Ankara (peds), CIC 620, E Unal (20 (20) 15/5)

Ankara, Numune Education and Research Hospital, CIC 691, M Ayli (42 (42) 19/23)

Antalya, Akdeniz University Hospital (peds), CIC 618, MA Yesilipek, V Hazar, A Kupesiz (37 (39) 34/3)

Antalya, Akdeniz University Hospital (hem), CIC 685, L Undar (27 (32) 13/4)

Aydin, Adnan Menderes University Medical Faculty (hem), CIC 187, Z Bolaman (4 (4) 0/4)

Balcali (Adana), Cukurova University Hospital (peds, onco), CIC 821:1, A Tanyeli (6 (8) 6/0)

Balcali (Adana), Cukurova University Hospital (ads, onco), CIC 821:2, B Sahin (16 (16) 0/16)

Bornova-Izmir, Ege University Medical Faculty (peds), CIC 621, S Kansoy (17 (17) 17/0)

Bornova-Izmir, Ege University Medical Faculty (ads, hem), CIC 628, S Cagiran (66 (67) 15/51)

Eskisehir, Osmangazi University, CIC 686, Z Güblas (32 (32) 12/20)

Istanbul, Marmara University (hem), Altunizade, CIC 714, T Akoglu (no report)

Istanbul, University of Istanbul, CIC 760, S Kalayoglu-Besisik (34 (35) 18/16)

Istanbul, Cerrahpasa Medical School, CIC 761, B Ferhanoglu, T Soysal, M Cem Ar (42 (42) 13/29)

Istanbul, University of Istanbul Pediatric BMT Unit (peds, hem, onco), CIC 400, S Anak, O Gulyuz (12 (12) 9/3)

Istanbul, GATA Haydarpasa Egitim Hast (hem, onco), CIC 687, A Öztürk (0 (0) 0/0)

Istanbul, Yeditepe University Hospital (hem, onco), CIC 919, Y Koc (36 (37) 21/15)

Izmir, Dokuz Eylul University (onco), CIC 688, H Ozsan, U Yilmaz (18 (18) 1/17)

Kayseri, Erciyes University Hospital (hem, onco), CIC 627, A Unal, M Cetin (56 (56) 34/22)

Trabzon, Karadeniz Technical University (hem), CIC 170, E Ovali (19 (19) 5/14)

Ukraine: (two teams: 27 (31) 0/27)

Kiev, Kiev City BMT Center, CIC 176, E Karamanesht, V Khomenko, I Korenkova, S Borodkin (27 (31) 0/27)

Kiev, Kiev Regional Oncologic Hospital (peds, hem, onco), CIC 177, S Donska, O Ryzhak (no report)

United Kingdom: (52 teams: 2447 (2588) 1016/1431)

Aberdeen, The Royal Infirmary (hem), CIC 344, DJ Culligan (16 (16) 5/11)

Bangor, Gwynedd Hospital (hem, onco), CIC 736, D Edwards (16 (17) 0/16)

Bath, Royal United Hospital (hem), CIC 619, C Knechtli (14 (14) 0/14)

Belfast, Belfast City Hospital (hem), CIC 268, F Jones, TCM Morris, P Abram (43 (46) 7/36)

Birmingham, Heartlands Hospital (hem), CIC 284, DW Milligan (33 (37) 12/21)

Birmingham, Queen Elizabeth Hospital (hem), CIC 387, C Craddock, P Mahendra (143 (146) 70/73)

Birmingham, The Birmingham Childrens Hospital (hem), CIC 781, PJ Darbyshire (42 (43) 31/11)

Bournemouth, Royal Bournemouth Hospital (hem), Poole Hospital, Dorset Cancer Centre and Salisbury District Hospital, CIC 765, S Killick, J Cullis (23 (26) 0/23)

Bristol, Royal Hospital for Children (allo, ads, peds), CIC 386:1, JM Cornish, D Marks (66 (67) 64/2)

Bristol, Avon Haematology Unit (auto), CIC 386:2, R Evelyn, J Bird (24 (27) 0/24)

Cambridge, Addenbrooke's Hospital (hem), CIC 566, C Crawley, RE Marcus, J Craig, H Balsdon, T Chapman (76 (78) 26/50)

Cardiff, University Hospital of Wales (hem), CIC 303, KMO Wilson, AK Burnett, JA Whittaker, CH Poynton (68 (72) 31/37)

Cheltenham, Cheltenham General Hospital, CIC 398, E Blundell (20 (20) 0/20)

Coventry, University Hospital & Warwickshire NHS Trust, J Mills (17 (20) 0/17)

Dudley, The Dudley Group of Hospitals NHS Trust (hem), CIC 405, S Fernandes (3 (3) 0/3)

Dundee, Ninewells Hospital (hem), CIC 719, D Meiklejohn (7 (7) 0/7)

Edinburgh, Western General Hospital, (hem) CIC 228, PRE Johnson, J Davies, F Scott, PH Roddie, P Shepherd (37 (37) 10/27)

Exeter, Royal Devon and Exeter Hospital (hem), CIC 571, C Rudin (12 (13) 0/12)

Glasgow, Royal Infirmary, CIC 244, IG McQuaker, A Parker (79 (80) 40/39)

Glasgow, The Western Infirmary (hem), CIC 325, T Fitzsimons (25 (25) 0/25)

Glasgow, Royal Hospital for Sick Children (hem), CIC 707, B Gibson (17 (19) 12/5)

Leeds, St James's University Hospital, The General Infirmary, Pinderfields Hospital CIC 254, G Cook, S Kinsey, MC Galvin (113 (118) 32/81)

Leicester, Royal Infirmary (hem), CIC 713, AE Hunter (64 (65) 18/46)

Liverpool, Royal Liverpool University Hospital (hem), CIC 501, RE Clark, A Pettitt (52 (53) 16/36)

Liverpool, Alder Hay, CIC 773, M Caswell (11 (11) 7/4)

London, Hammersmith Hospitals NHS Trust, CIC 205, J Apperley, E Olavarria, E Kanfer, A Rahemtulla, R Szydlo (105 (122) 30/75)

London, Royal Free Hospital (hem), CIC 216, S Mackinnon (69 (70) 43/26)

London, Royal Marsden Hospital (hem), CIC 218, M Potter (149 (160) 58/91)

London, University College Hospital (hem), CIC 224, K Thomson (131 (134) 51/80)

London, Great Ormond Street Hospital, CIC 243, P Veys (54 (64) 42/12)

London, The London Clinic (hem), CIC 263, M Potter, P Gravett (8 (10) 2/6)

London, St George's Hospital (hem), CIC 539, J Marsh, S Ball, EC Gordon-Smith (24 (26) 14/10)

London, Guy's Hospital (hem), CIC 721, M Kazmi (44 (45) 15/29)

London, King's College (hem), CIC 763, A Pagliuca (108 (116) 72/36)

London, St Bartholomew's, CIC 768 and the Royal London Hospital, J Gribben, J Cavenagh, S Agrawal, T Lister (82 (92) 29/53)

London, St Mary's Hospital, CIC 866, J de La Fuente (11 (11) 11/0)

Manchester, Royal Children's Hospital, CIC 521, R Wynn (32 (33) 29/3)

Manchester, The Royal Infirmary, CIC 601, JA Yin (37 (39) 29/8)

Manchester, Christie Hospital (hem), CIC 780, E Liakopoulou (65 (76) 24 (41))

Newcastle upon Tyne, Royal Victoria Infirmary and the Sunderland Royal Hospital, CIC 276, GH Jackson, SJ Proctor, P Taylor, A Cant, R Skinner PJ Carey (86 (89) 41/45)

Norwich, Norfolk and Norwich Hospital (hem), CIC 391, M Lawes, G Turner (10 (10) 0/10)

Nottingham, City Hospital, CIC 717, N Russell, JL Byrne, AP Haynes, A McMillan (119 (125) 51/68)

Oxford, John Radcliffe Hospital (hem, onco), Headington and Wycombe General, CIC 255, TJ Littlewood, C Bunch, C Mitchell, C Hatton, G Hall, J Wainscoat (72 (74) 30/42)

Plymouth, Derriford Hospital, CIC 823, MD Hamon (45 (47) 13/32)

Salford, Hope Hospital, JB Houghton (3 (3) 0/3)

Sheffield, Royal Hallamshire Hospital—J Snowdon; Weston Park Hospital—L Evans; Rotherham General Hospital—H Barker and the Children's Hospital—A Vora, CIC 778:1/2/3 (63 (68) 27/36)

Somerset, Taunton and Somerset Hospital, S Bolam, SA Johnson (10 (10) 0/10)

Southampton, CRC Wessex, CIC 704, K Orchard, A Duncombe, J Kohler (74 (79) 24/50)

Stoke-on-Trent, University Hospital of North Staffordshire (hem), CIC 394, R Chasty (8 (8) 0/8)

Swansea, Singleton Hospital, Skett, S Al Ismail (9 (9) 0/9)

Swindon, Great Western Hospital (hem), CIC 608, NE Blesing, A Gray, S Green, A Koster (8 (8) 0/8)

Total Europe 2006: 25 050 (28 740) 9661/15 389
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