

SPECIAL REPORT

The EBMT activity survey 2009: trends over the past 5 years

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Six hundred and twenty-four centers from 43 countries reported a total of 31 322 hematopoietic SCT (HSCT) to this 2009 European Group for Blood and Marrow Transplantation (EBMT) survey with 28 033 first transplants (41% allogeneic, 59% autologous). The main indications were leukemias (31%; 92% allogeneic), lymphomas (58%; 12% allogeneic), solid tumors (5%; 6% allogeneic) and non-malignant disorders (6%; 88% allogeneic). There were more unrelated than HLA-identical sibling donors (51 vs 43%) for allogeneic HSCT; the proportion of peripheral blood as stem cell source was 99% for autologous and 71% for allogeneic HSCT. Allogeneic and autologous HSCT continued to increase by about 1000 HSCT per year since 2004. Patterns of increase were distinct and different. In a trend analysis, allogeneic HSCT increased in all World Bank Categories ($P=0.01$, two sided; all categories), autologous HSCT increased in middle- ($P=0.01$, two sided) and low-income ($P=0.01$, two sided) countries. EBMT practice guidelines appeared to have an impact on trend, with a clear increase in absolute numbers within the categories 'standard' and 'clinical option' for both allogeneic and autologous HSCT ($P=0.01$, two sided; for both allogeneic and autologous HSCT) and a clear decrease in autologous HSCT for the 'developmental' and 'generally not recommended' indications ($P=0.01$, two sided). These data illustrate the status and trends of HST in Europe.

Bone Marrow Transplantation (2011) 46, 485–501; doi:10.1038/bmt.2011.11; published online 28 February 2011

Keywords: hematopoietic SCT; stem cell source; Europe; transplant rates; indication; practice guidelines

Introduction

Hematopoietic SCT (HSCT) has become an established procedure for many congenital and acquired disorders of the hematopoietic system worldwide.^{1,2} The first survey of the Worldwide Network for Blood and Marrow Transplantation reflects this situation by its report of more than 50 000 such procedures for the year 2006.³ Forecasts predict an ongoing increase in the near future.^{4,5} This fits with the information from the past series of the annual surveys of the European Group for Blood and Marrow Transplantation (EBMT).⁶ These data show how the activity surveys have become an important instrument to describe the status of hematopoietic SCT in Europe, to observe trends and to monitor changes in technology use.^{7–11} They capture the numbers of HSCT in the preceding year from each participating team by indication, donor type and stem cell source. Their standardized structure over many years and the excellent commitment by the participating teams allows now to observe changes over time and to evaluate factors associated with such changes.¹¹ More recently, the survey has included information on cellular transplants with hematopoietic stem cells for non-hematopoietic use as well as for the use of non-hematopoietic stem and progenitor cells.¹⁰ This coincides with the recent interest of the World Health Organization (www.who.org) in cell and tissue transplants and further stresses the need for adequate and timely information.¹²

All EBMT analyses in previous years have shown an increase in absolute HSCT numbers and in transplant rates of about 5–10% for allogeneic and of 3–5% for autologous HSCT following the earlier findings of a high predictability of transplant rates.^{6,9} The recent Worldwide Network for Blood and Marrow Transplantation survey showed significant differences in use and availabilities of HSCT between the different global regions.³ It identified availability of resources, governmental support and access of patients to the transplant as key factors for transplant rates.³ We were therefore interested to evaluate more closely this increase of HSCT within EBMT and changes in HSCT application. Specifically, we wanted to know whether the increase in the most recent years was similar for all indications and in all countries or whether the increase was more owing to a catching up of those countries

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Received 24 August 2010; revised 2 December 2010; accepted 18 January 2011; published online 28 February 2011

that were lagging behind. Secondly, we were interested to know whether trends followed the recommendations on disease indication by the EBMT report on current practice. The key findings are presented in this report.

Patients and methods

Data collection and validation

As in preceding years, participating teams were requested to report their data for 2009 by indication, stem cell source and donor type as listed in Table 1.^{6,7} Quality control measures included several independent systems: confirmation of validity of the entered data by the reporting team, selective comparison of the survey data with MED-A data sets in the EBMT registry database, cross-checking with the National Registries and onsite visits of selected teams.

Teams

Six hundred and forty-seven teams in 48 countries (40 European and 8 affiliated countries) were contacted for the 2009 report, of which 624 teams from 46 countries (39 European, 7 affiliated countries) reported their numbers. This corresponds to a 96% return rate and includes 504 active EBMT member teams. The corresponding numbers for the 2008 report were 615 teams and 44 countries. There were 20 new teams from six countries reporting to the 2009 survey (243 HSCT; 68 allogeneic and 175 autologous) and 25 teams that reported in 2008 (434 HSCT; 101 allogeneic and 333 autologous), but failed to report in 2009.

Contacted teams are listed in the appendix in alphabetical order by country, city, EBMT center code and with their numbers of first, total HSCT, allogeneic and autologous first HSCT. The World Health Organization regional office definitions (www.who.org) were used to classify countries as European or Non-European. According to information received, there were no blood or marrow transplants performed in Albania, Andorra, Armenia, Georgia, Liechtenstein, Malta, Moldavia, Monaco, Montenegro and San Marino in 2009. Eight non-European countries participated in the 2009 EBMT survey, Algeria, Iran, Israel, Jordan, Lebanon, Saudi Arabia, South Africa and Tunisia. Their data, 6% of the total data set, are included in all analyses.

Definitions

Transplant numbers. Transplant numbers in the survey reflect numbers of patients with a first HSCT; this includes patients with a planned tandem transplant. Additional transplants include: *re-transplants* (autologous or allogeneic), defined as unplanned HSCT for rejection or relapse after a previous HSCT; and *multiple transplants*, defined as subsequent transplants within a planned double or triple autologous or allogeneic transplant protocol. Information on stem cell source includes BM, peripheral blood or cord blood; transplants with more than one source were categorized as cord blood HSCT if cord blood was present or peripheral blood HSCT if only BM and peripheral blood were present. Information on numbers of non-myeloablative conditioning transplants, as defined

by EBMT (<http://www.ebmt.org/4Registry/registry6.html>), was collected generically and not for individual transplants.

Information on additional cellular therapies was subdivided into donor lymphocyte infusions, mesenchymal stromal cell therapies, HSCT for non-hematopoietic use or non-hematopoietic stem cell therapies. Collection of information was harmonized with identical surveys by EULAR (European League against Rheumatism; www.eular.org) and TERMIS-EU (Tissue Engineering and Regenerative Medicine International Society; www.termis.org).¹³

The basic classification from the EBMT report on current practice¹⁴ was used to separate indications into *standard*, *optional*, *developmental* and *generally not indicated*, with minor modifications (see Supplementary Table 1).

Transplant rates. Transplant rates, defined as numbers of HSCT per 10 million inhabitants, were computed for each country, without adjustments for patients who crossed borders and received their HSCT in a foreign country. Population numbers were obtained from the US census office database (www.census.gov). Countries were grouped into high-income (>US\$11 906 GNI per capita), middle-income (US\$3856–11 905 GNI per capita) and low-income (US<\$3855 GNI per capita) countries as previously reported by the World Bank Definitions and their GNI/capita (www.worldbank.org)⁶ and as listed in the Appendix.

Statistical analysis

Multiple regression analyses assessed trends over time for the period from 2004 to 2009, with focus on increase or decrease of HSCT numbers, HSCT rates and growth rates for all transplants, and allogeneic and autologous HSCT separately. World Bank Category assessed the respective values for changes concerning countries, and EBMT practice guidelines for disease indications. Two-sided comparisons were used in comparisons.

Results

Participating teams

Of the 624 teams, 378 (61%) did both allogeneic and autologous transplants; 224 (36%) teams restricted their activity to autologous transplants and nine teams (1.5%) to allogeneic transplants. Thirteen teams (2%) reported having performed no transplants in 2009.

Forty-six teams (7.4% of all teams) reported 1–5 HSCT (0.4% of all HSCT), 47 teams (7.5%) reported 6–10 HSCT (1.2% of all HSCT), 97 teams (15.5%) reported 11–20 HSCT (4.7% of all HSCT), 205 teams (32.8%) reported 21–50 HSCT (21.6% of all HSCT), 147 teams (23.6%) reported 51–100 HSCT (33.6% of all HSCT), 58 teams (9.3%) reported 101–150 HSCT (23% of all HSCT) and 24 teams (3.8%) reported more than 150 HSCT (15.5% of all HSCT). Hence, there were 130 teams that performed 80 or more HSCT per team, giving a total of 16 303 transplants (over 52% of all transplantations) in 2009. Numbers reflect the total number of procedures per team and not numbers of first transplants.

Table 1 Numbers of HSCTs in Europe 2009 by indication, donor type and stem cell source with information on increase or decrease from 2004 to 2009

| | Allogeneic | | | | | | | | | | Autologous | | | |
|---------------------------------------|-----------------|----------------|---|----------------|---------------------|----------------|----------------|-----|----------------|-------|------------------|-----|-----------------|---|
| | Total HSCT | | | | | Donor type | | | | | Stem cell source | | | |
| | Allogeneic HSCT | | HLA-identical sibling | | Other family member | | Unrelated | | PB | | CB | | Autologous HSCT | |
| | N | % ^a | % Increase/decrease during 2004–2009 ^b | % ^c | % ^c | % ^c | % ^c | % | % ^a | N | % ^a | N | % ^a | % Increase/decrease during 2004–2009 ^b |
| Leukemia | 8752 | 92 | 45 | 42 | 4 | 54 | 74 | 514 | 6 | 730 | 8 | -52 | | |
| AML | 4284 | 87 | 55 | 44 | 5 | 51 | 76 | 220 | 6 | 553 | 13 | -46 | | |
| ALL | 2028 | 94 | 39 | 43 | 5 | 52 | 61 | 178 | 9 | 113 | 6 | -51 | | |
| CML | 386 | 100 | -52 | 43 | 5 | 52 | 71 | 18 | 5 | 1 | 0 | | | |
| Myelodysplastic syndrome ^d | 1221 | 99 | 119 | 36 | 3 | 61 | 77 | 71 | 6 | 17 | 1 | | | |
| Myeloproliferative syndrome | 396 | 100 | 99 | 36 | 3 | 61 | 84 | 12 | 3 | 1 | 0 | | | |
| CLL | 437 | 90 | 106 | 37 | 2 | 61 | 89 | 15 | 4 | 45 | 10 | | | |
| Lymphoproliferative disorders | 16196 | 12 | 148 | 45 | 4 | 51 | 85 | 81 | 4 | 14295 | 88 | 24 | | |
| Plasmas cell disorders | 7718 | 7 | 225 | 48 | 3 | 49 | 86 | 25 | 4 | 7149 | 93 | 29 | | |
| Hodgkin's lymphoma | 2231 | 15 | 217 | 42 | 9 | 49 | 84 | 15 | 5 | 1901 | 85 | 23 | | |
| Non-Hodgkin's lymphoma | 6247 | 16 | 105 | 44 | 3 | 53 | 85 | 41 | 4 | 5245 | 84 | 18 | | |
| Solid tumors | 1454 | 6 | | 24 | 40 | 36 | 73 | 5 | 5 | 1369 | 94 | -16 | | |
| Neuroblastoma | 426 | 8 | | 9 | 50 | 41 | 78 | 1 | 0 | 394 | 92 | 7 | | |
| Soft tissue sarcoma | 49 | 29 | | 36 | 50 | 14 | 71 | 0 | 0 | 35 | 71 | | | |
| Germinal tumors | 301 | 1 | | 100 | 0 | 0 | 100 | 0 | 0 | 300 | 100 | -2 | | |
| Ewings sarcoma | 253 | 4 | | 36 | 55 | 9 | 73 | 0 | 0 | 242 | 96 | 2 | | |
| Other solid tumors | 425 | 6 | | 25 | 19 | 56 | 67 | 4 | 15 | 398 | 94 | -34 | | |
| Non-malignant disorders | 1549 | 88 | 46 | 50 | 12 | 38 | 38 | 142 | 10 | 180 | 12 | 134 | | |
| BM failures | 622 | 100 | 50 | 54 | 7 | 39 | 48 | 26 | 4 | 0 | 0 | | | |
| Hemoglobinopathies | 287 | 100 | 47 | 75 | 12 | 13 | 33 | 23 | 8 | 0 | 0 | | | |
| Primary immune deficiencies | 341 | 100 | 38 | 30 | 21 | 49 | 29 | 63 | 19 | 1 | 0 | | | |
| Inherited disorders of metabolism | 111 | 98 | 51 | 27 | 10 | 63 | 18 | 29 | 26 | 2 | 2 | | | |
| Autoimmune disease | 188 | 11 | 6 | 55 | 0 | 45 | 64 | 1 | 9 | 177 | 94 | 146 | | |
| Others | 82 | 65 | 7 | 34 | 8 | 58 | 38 | 14 | 22 | 17 | 21 | | | |
| Total | 28033 | 41 | 55 | 43 | 6 | 51 | 71 | 756 | 7 | 16591 | 59 | 12 | | |

Abbreviations: CB = cord blood HSCT; PB = peripheral blood HSCT.

^aPercentage of total HSCT.

^bPercentage of increase or decrease in HSCT from 2004 to 2009 and trends. Calculated for indications with more than 100 HSCT only.

^cPercentage of allogeneic HSCT.

^dIncludes secondary acute leukemias.

Numbers of HSCT in 2009

A total of 28 033 first transplants, 11 442 (41%) allogeneic and 16 591 (59%) autologous, were carried out in 2009 (Supplementary Table 1). Furthermore, there were 1883 re-transplants (888 allogeneic/995 autologous) and 1406 additional transplants (70 allogeneic/1336 autologous), bringing the total to 31 322 HSCT procedures, 12 400 allogeneic (40%) and 18 922 autologous (60%) performed in 2009. The corresponding numbers for the 2008 survey were 26 810 first transplants, 10 782 (40%) allogeneic and 16 028 (60%) autologous, 1751 re-transplants (861 allogeneic/890 autologous) and 1732 additional planned multiple transplants (102 allogeneic/1630 autologous) corresponding to a total of 30 293 HSCT procedures, 11 745 allogeneic (39%) and 18 548 autologous (61%).

Indications for HSCT in 2009

Indications for HSCT in 2009 are listed in detail in Table 1 and the Supplementary Table 1 and their distribution is illustrated in Figure 1. Main indications for first transplants were *lymphoproliferative disorders* with 16 196 patients (57.7%), 1901 patients with allogeneic HSCT (12%), 14 295 with autologous HSCT (88%); *leukemias* with 8752 patients (31.2%), 8022 patients with allogeneic (92%), 730 autologous (8%) HSCT; *solid tumors* with 1454 patients (5.2%), 85 with allogeneic HSCT (6%), 1369 with autologous HSCT (94%); and *non-malignant disorders* with 1549 patients (5.5%), 1369 with allogeneic HSCT (88%), 180 with autologous HSCT (12%). The latter, autologous HSCT for non-malignant disorders predominantly include patients with autoimmune disorders ($N = 177$). An additional 82 patients (0.3%), 65 with allogeneic HSCT and 17 with autologous HSCT, were listed as 'other indications'.

Stem cell source and donor type in 2009

There were clear differences in the use of stem cell source between autologous and allogeneic HSCT (Figure 2). Of the 16 591 autologous first transplants, 142 (1%) were BM derived and 16 449 (99%) were derived from PBSCs or from combined peripheral blood and BM. There were two autologous HSCT reported with cord blood cells, one for a child with neuroblastoma and one, gene modified, for a child with an inherited disease of metabolism (Figure 2a, Table 1). Of the 11 442 allogeneic first transplants, 2569 (22%) were BM, 8119 (71%) were peripheral blood and 754 (7%) were cord blood transplants (Figure 2b).

The choice of stem cell source differed by main indication for all types of allogeneic HSCT. BM remained the preferred source of stem cells for allogeneic transplants for non-malignant disorders (51%) (Figure 2c), with an even higher proportion of BM for HLA-identical sibling donor transplants (59%). In contrast, peripheral blood was the preferred choice for malignant disorders, with the highest proportion of peripheral blood for leukemias (73%) (Figure 2d; Table 1).

Donors for the 11 442 allogeneic HSCT were HLA-identical siblings (4856 BM or peripheral blood donors; 42 and 46% targeted cord blood HSCT; 0.4%), an other family member (637; 6%), an unrelated BM or peripheral blood donor (5167; 45%) or an unrelated cord blood donor (701; 6%) (Figure 3).

Use of reduced-intensity conditioning in 2009

Numbers of non-myeloablative HSCT continued to increase from 4397 in 2008 to 4842 in 2009 at the same rate as allogeneic HSCT. Non-myeloablative conditioning was used for 39% of all allogeneic HSCT, a similar number to that of last year's survey.

Donor lymphocyte infusions

There were 1936 patients reported as having received donor lymphocyte infusions in 2009; this corresponds to 16% of all patients with an allogeneic HSCT and to about 40% of reported patients with reduced-intensity conditioning HSCT.

Additional cellular therapies

105 teams in 22 countries reported to the cellular therapy survey in 2009. The 1142 cellular therapies other than conventional HSCT included 520 (46%) mesenchymal stem cell therapies, 304 (27%) hematopoietic stem cell therapies and 318 (28%) 'other source' stem cell therapies for non-hematopoietic use or non-hematopoietic cellular therapies. The majority of the MSC therapies (59%) were allogeneic; the majority of the cellular therapies for non-hematopoietic use were autologous (70%). Indications for the 1142 cellular therapies were cardiovascular (416, 36%; 64% autologous), neurological (34, 3%; 50% autologous), tissue repair (192, 17%, 98% autologous), epithelial (90, 8%; 73% autologous), auto immune disease (103, 9%; 84% autologous) and unspecified (307, 27%; 7% autologous).

Detailed information on cell source was provided for 814, 215 (26%) allogeneic, 599 (74%) autologous procedures. There were 264 therapies performed using HSC (32%), 232 using MSC (29%), 82 using chondrocytes (10%), 51 using keratinocytes (6%), 50 using dermal fibroblasts (6%) and 135 using an unspecified cell source (2%).

Transplant rates

Transplant rates differed substantially between participating countries (Figure 4). These differences relate to all types of HSCT. Total transplant rates in Europe ranged from 0 HSCT per 10 million inhabitants in several countries to 758 in Italy (943 in Israel) (median: 311). Transplant rates for allogeneic HSCT ranged from 0 (several countries) to 312 in Germany (508 in Israel) (median: 88). They ranged from 0 (several countries) to 497 in Italy (436 in Israel) (median: 210) for autologous HSCT.

Transplant numbers' transplant rates and changes from 2004 to 2009

Absolute transplant numbers increased from 2004 to 2009 by about 1000 HSCT per year with distinct differences. The total number of allogeneic HSCT increased by 55% and of autologous HSCT by 12% (Table 1). Increase or decrease in HSCT differed depending on disease indication and main donor type. Increase in allogeneic HSCT was highest in absolute numbers for AML and highest in relative proportion for lymphoproliferative disorders, CLL and myelodysplastic syndrome. A decrease in allogeneic HSCT (-52%) was only observed, as reported previously, for

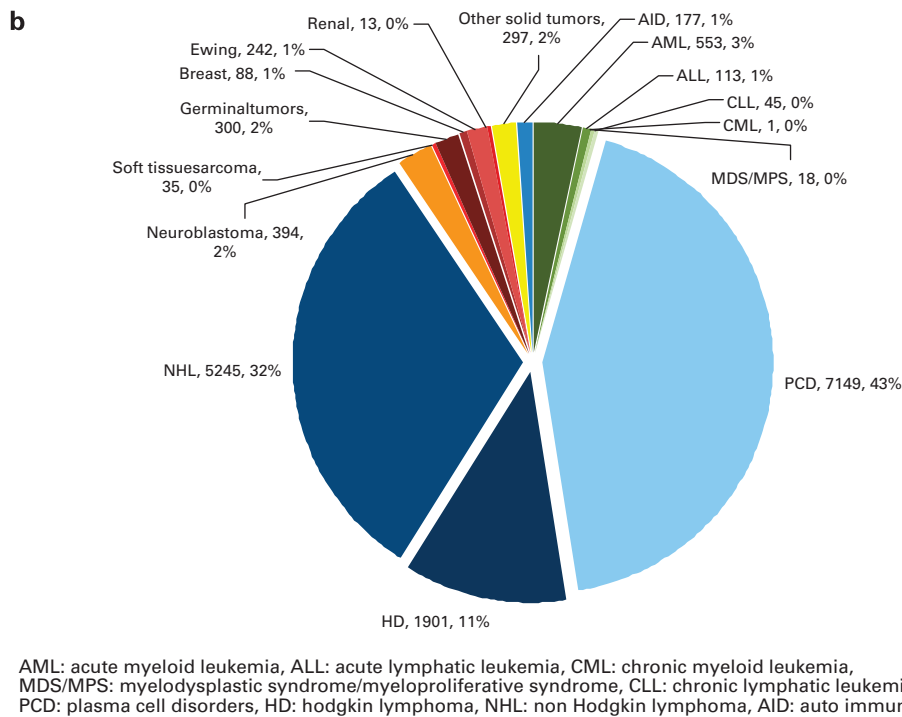
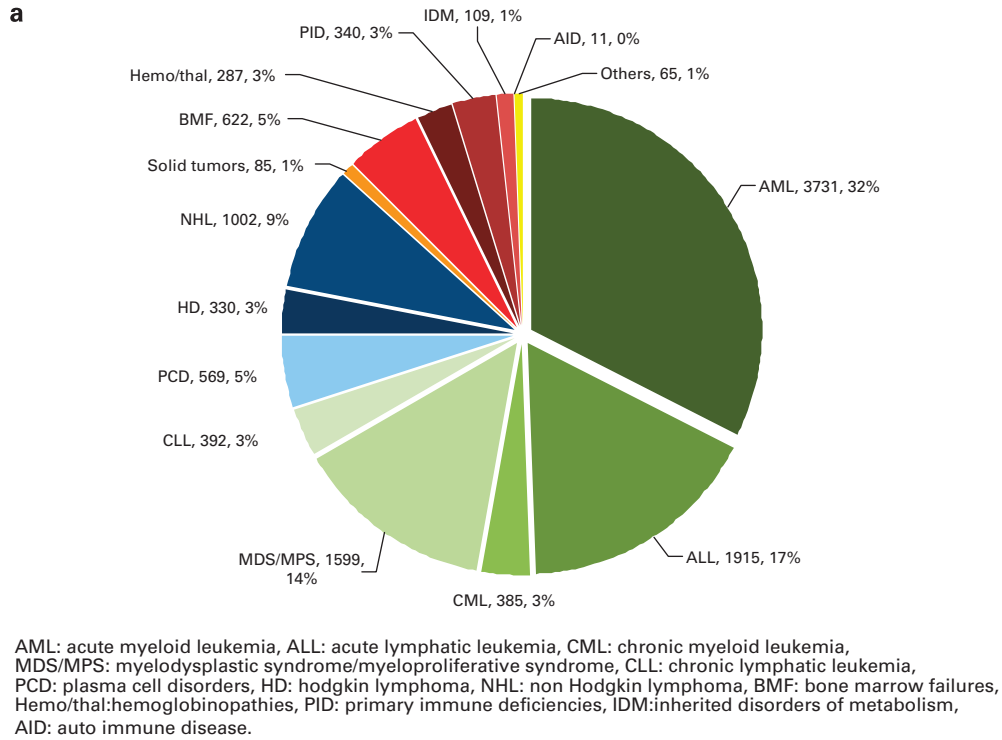


Figure 1 Absolute numbers and relative proportions of indications for an HSCT in Europe in 2009. (a) Proportions of disease indications for an allogeneic HSCT in Europe in 2009. Leukemias (green) 8022 (70%), lymphoproliferative disorders (blue) 1901 (17%), solid tumors (orange) 85 (1%), BM failures (red) 1369 (12%) and others (yellow) 65 (0%). (b) Proportions of disease indications for an autologous HSCT in Europe in 2009. Leukemias (green) 730 (4%), lymphoproliferative disorders 14295 (86%), solid tumors (orange) 1369 (8%), BM failures (red) 180 (1%) and others (yellow) 17 (0%).

CML. Numbers of allogeneic HSCT for solid tumors remained low over the whole observation period. In contrast, autologous HSCT increased above the average of +12% in total for lymphoproliferative disorders

(+24%), but decreased for all other indications, including leukemias (-52%). A clear exception, although with still small absolute numbers, forms the indication of auto-immune disorders (increase by 146%).

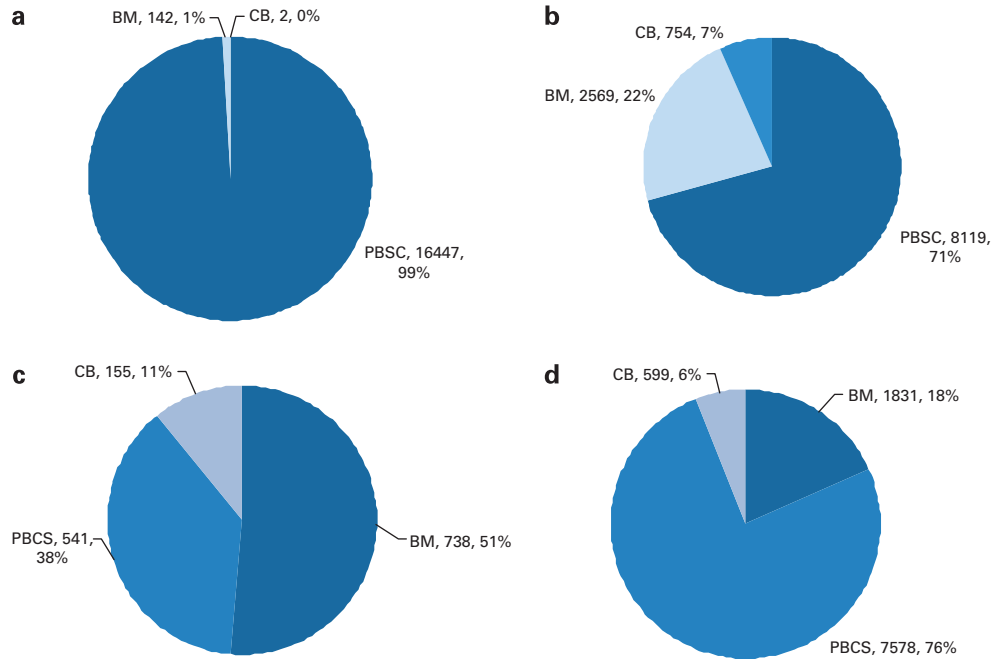


Figure 2 Use of stem cell source and donor type in 2009. (a) Proportion of stem cell source for autologous HSCT in 2009. (b) Proportion of stem cell source for allogeneic HSCT in 2009. (c) Proportion of stem cell source for allogeneic HSCT in 2009 for non-malignant disease indications. (d) Proportion of stem cell source for allogeneic HSCT in 2009 for malignant disease indications.

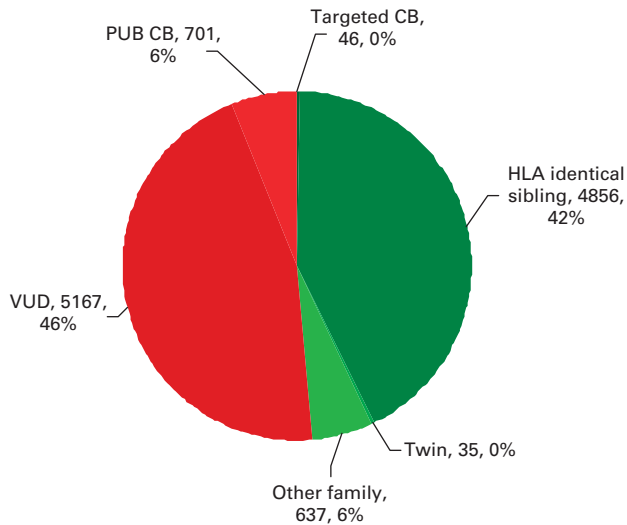


Figure 3 Proportion of donor types for allogeneic HSCT in 2009.

There were substantial differences by World Bank Category (Figures 5a and b). Countries in the high-income category showed a clear increase in absolute numbers of allogeneic HSCT ($P=0.01$, two sided), with a slight decrease in its growth rate over time ($P=0.14$, two sided) and just a slight increase in absolute numbers of autologous HSCT ($P=0.22$, two sided), with just a slight increase in its growth rate ($P=0.45$, two sided). Countries in the middle-income category also showed a clear increase in absolute numbers of allogeneic HSCT ($P<0.01$, two sided), with a slight decrease in its growth rate over time ($P=0.26$, two sided), but as well as a clear increase in absolute numbers of autologous HSCT ($P<0.01$, two sided), with just a slight

decrease in its growth rate ($P=0.30$, two sided). Countries in the low-income category showed both a clear expected increase in absolute numbers of allogeneic and autologous HSCT ($P=0.01$ allogeneic, $P<0.01$ autologous, two sided), with a slight decrease in growth rates ($P=0.50$ allogeneic, $P=0.81$ autologous, two sided).

EBMT practice guidelines appeared to have an impact (Figures 5c and d). There was a clear increase in absolute numbers of allogeneic and autologous HSCT within the categories 'standard' and 'clinical option' ($P<0.01$, both autologous and allogeneic, two sided), with a slight decrease ($P=0.12$ allogeneic, two sided) or increase ($P=0.55$ autologous, two sided) in the growth rate over time.

In contrast, there was just a slight increase in absolute numbers of allogeneic HSCT within the categories 'developmental' and 'generally not recommended' ($P=0.47$, two sided), with just a slight increase in growth rate ($P=0.50$, two sided). For autologous HSCT, there was a clear decrease in absolute numbers for the categories 'developmental' and 'generally not recommended' ($P<0.01$, two sided).

Discussion

Data from this report describe the current state of art of HSCT in Europe in 2009. They document and confirm the ongoing role of autologous and allogeneic HSCT for a broad range of malignant and non-malignant disorders.³ Data show clearly that allogeneic HSCT is the preferred procedure for patients with leukemias and non-malignant disorders, and autologous HSCT the preferred procedure for patients with lymphoproliferative disorders and some solid tumors. In addition, they show some novel and interesting trends.

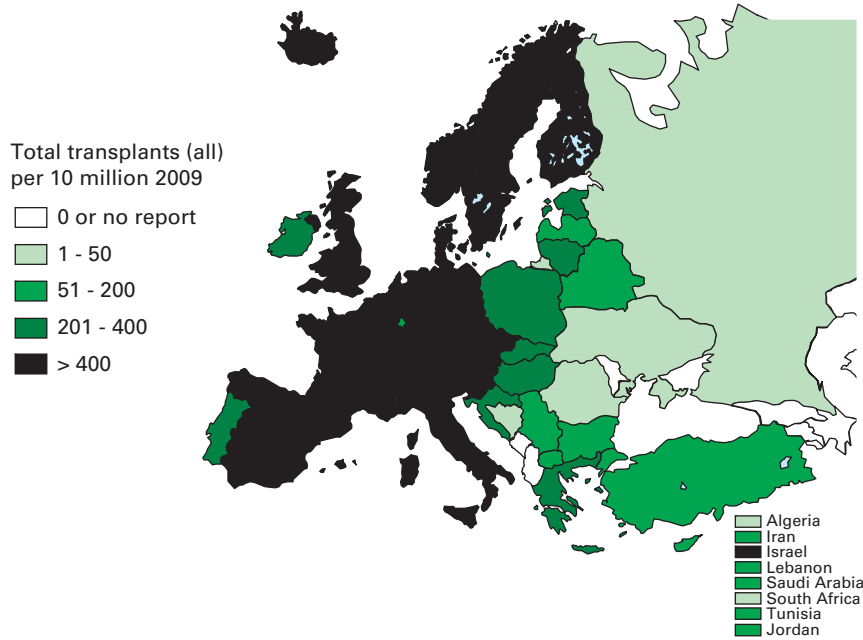


Figure 4 Transplant rates (=number of HSCT per 10 million inhabitants) in Europe 2009 by participating country. Figures reflect all transplants, autologous and allogeneic combined.

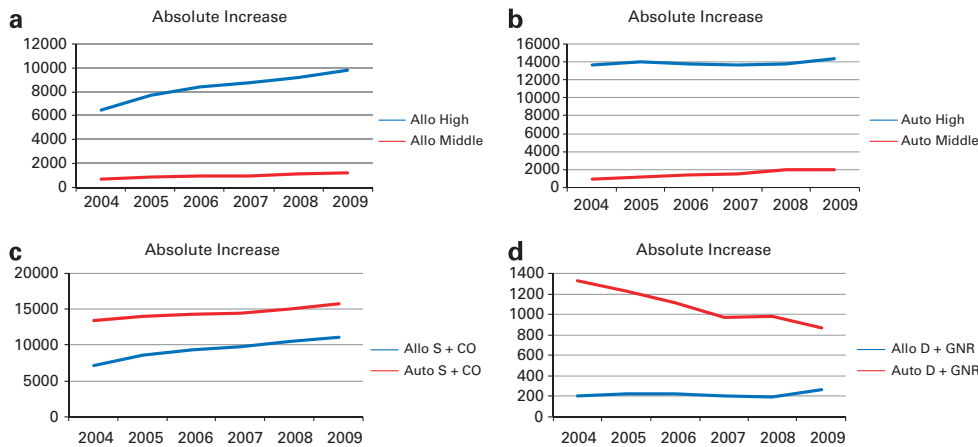


Figure 5 Trend in absolute numbers of HSCT in Europe from 2004 to 2009. (a) Allogeneic HSCT: high- and middle-income countries. (b) Autologous HSCT: high- and middle-income countries. (c) HSCT by EBMT recommendation ‘standard (S) and clinical option (CO)’ for autologous and allogeneic HSCT. (d) HSCT by EBMT recommendation ‘developmental (D) and generally not recommended (GNR)’ for autologous and allogeneic HSCT.

This 2009 survey confirms the previous trends concerning stem cell source and donor type for allogeneic HSCT.^{6,10} Peripheral blood is the stem cell source of choice in autologous HSCT and is the preferred source in allogeneic HSCT for malignant disorders. BM is the preferred stem cell source in allogeneic HSCT for non-malignant disorders. Here, data from other studies show a clear advantage in overall survival of BM as stem cell source; it should be declared as the preferred choice.^{15–17} The survey confirms as well the increasing role of unrelated donors in allogeneic HSCT with more unrelated than HLA-identical sibling donors.⁶

The survey fits into the previously documented trend of a high predictability of HSCT rates and of an absence of plateau,⁹ with some exceptions. Numbers of allogeneic HSCT increased over the last 5 years by about 50% and

numbers of autologous HSCT by about 12%. Numbers increased most in absolute terms for AML, the most frequent indication for an allogeneic HSCT today, an indication where multiple prospective and retrospective studies indicate an advantage of allogeneic HSCT compared with a non-transplant strategy, and their outcome has substantially improved over the past years.^{18–21} Increase in relative terms was highest for patients with lymphoproliferative disorders, multiple myeloma, CLL and myelodysplastic syndrome.

As such, the data from the survey indicate key fields for further investigations. There is an urgent need to provide evidence in addition to expectation and to define the role of allogeneic HSCT in these disorders by prospective controlled studies.^{11,22} The same considerations apply to the role of autologous HSCT for patients with leukemia, where

a significant decline in transplant procedures was observed. Trends indicate a very limited role for autologous HSCT in this field.²³

The survey confirmed the role of reduced-intensity conditioning for allogeneic HSCT, with a constant proportion of reduced-intensity conditioning of about 40%. It is interesting to note that the numbers of patients treated for the first time with donor lymphocyte infusions corresponds equally to about 40% of all allogeneic HSCT. It cannot be documented by the survey, but deduced that the vast majority of patients treated with reduced-intensity conditioning will receive donor lymphocyte infusions over time.

Several years ago, the survey showed clearly the marked difference in transplants and transplant growth rates depending on the economic status of the participating countries as defined by their World Bank Category.⁸ Countries with high income performed more transplants and presented higher growth rates than countries with middle or low income. We were specifically interested to know whether there were signs for a plateau in transplant growth rates and whether the increase in absolute transplant numbers was owing more to catching up by less rich countries. The detailed analysis gave clear but different results for allogeneic and autologous HSCT. Allogeneic HSCT continues to increase in all World Bank categories, but with a trend for a decreasing growth rate in high- and middle-income countries. In contrast, autologous HSCT numbers are stable in high-income countries, with still an increase and decrease in growth rate in middle- and low-income countries.

In this context, it is specifically interesting to note that autologous HSCT declined for those indications considered by the EBMT practice guidelines as developmental or generally not recommended, but continued to increase, in all categories, for the indications considered as standard or optional.¹⁴ The same holds true in principle for allogeneic HSCT with the exception of a slow, and in absolute numbers low, increase in HSCT for developmental or not recommended indications. Apparently, more research is performed to test new indications with allogeneic HSCT than autologous HSCT. It is also comforting to see that centers adhere to the EBMT practice guidelines.

In summary, the 2009 activity survey data of the EBMT describe status of HSCT in Europe. They identify current needs for research and describe trends for the future. As such, they provide a platform for patient and physician counseling and can give guidance for health-care planning.

Conflict of interest

The authors have declared there is no conflict of interest to disclose. Writing of the manuscript was the sole responsibility of the authors.

Acknowledgements

The cooperation of all participating teams and their staff (listed in the appendix) are as follows, the EBMT Co-ordination office: Barcelona (F McDonald, E McGrath, SM Jones, EJ Mac Hale), Paris (V Chesnel, NC Gorin), London (C Ruiz de Elvira, S Hewerdine, S Tran, P Wilson), the Austrian Registry (ASCTR) (H

Greinix, B Lindner), the Czech BMT Registry (K Benesova, M Trnkova), the French Registry (SFGM) (N Milpied, N Raus), the German Registry (DRST) (H Ottinger, K Fuchs, H Schrezenmeier, C Müller, H Neidlinger, U Feldmann), the Italian Registry (GITMO) (A Bosi, R Oneto, B Bruno), the Dutch Registry (HOVON) (A Schattenberg, M Groenendijk), Spanish BMT Registry (GETH), (E Carreras, A Cedillo), the Swiss Registry (SBST) (U Schanz, H Baldomero, E Buhrfeind), the Turkish BMT Registry (G Gurman, M Arat, F Arpacı, D Dursen) and the British Registry (BSBMT) (A Pagliuca, J Cornish, K Kirkland, J Lee, R Paul) is greatly appreciated. We also thank S Stöckli for excellent secretarial assistance. The work was supported in part by the European Leukemia Net LSH-2002-2.2.0-3, by a grant from the Swiss National Research Foundation. EBMT is supported by grants from the corporate members: Amgen Europe, Celgene International SARL, Genzyme, Gilead Sciences UK, Miltenyl Biotec GmbH, Schering-Plough, F Hoffmann-La Roche Ltd, CaridianBCT Europe NV, Cephalon, Fresenius Biotech GmbH, Therakos, Gentium SpA, Alexion Europe, Chugai Sanofi Aventis, Merck Sharp and Dohme, Novartis, Pfizer, Pierre Fabre Médicament and Hospira.

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Appendix 2009

List of transplant centers in 2009

(Total 1st HSCT (total all HSCT), N allogeneic 1st HSCT/N autologous 1st HSCT)

Albania (WB low income): no report

Andorra (WB high income): no report

Armenia (WB low income): no report

Algeria (WB middle income): (1 team) (155 (155) 100/55)

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

Austria (WB high income): (12 teams) (386 (433) 169/217)

Graz, Karl Franz University Hospital (hem), CIC 308, W Linkesch (70 (74) 27/43)

Graz, Universitäts-Kinderklinik (hem, onco), CIC 593, Ch Urban (14 (16) 9/5)

Innsbruck, Universitätsspital (hem, onco), CIC 271, G Gastl, D Nachbaur (80 (90) 42/38)

Klagenfurt, General Hospital Klagenfurt, D Geissler, M Heisteringer (7 (8) 0/7)

Linz, AO Krankenhaus (onco), I Medizin, MA Fridrik (7 (7) 0/7)

Linz, AOK der Elisabethinen, Internal Medicine, CIC 594, D Lutz, O Krieger (43 (50) 19/24)

Salzburg, LKA Salzburg (onco), CIC 356, R Greil, C Russ (21 (21) 0/21)

Vienna, AKH, Universitätsklinik für Innere Medizin I (onco), CIC 227, HT Greinix, P Kalhs (72 (82) 46/26)

Vienna, St Anna Kinderspital (hem, onco), CIC 528, H Gadner, C Peters (35 (46) 26/9)

Vienna, Hanusch-Krankenhaus (hem, onco), CIC 743, E Koller (10 (12) 0/10)

Vienna, Donauespital, CIC 767, P Kier (9 (9) 0/9)

Vienna, Wilhelminenspital (hem, onco), CIC 828, H Ludwig (18 (18) 0/18)

Azerbaijan (WB low income): (1 team: 0 (0) 0/0)

Baku, Azerbaijan Central Clinic Hospital, CIC 186, S Dincer (0 (0) 0/0)

Belarus, Republic of (WB middle income): (2 teams) (117 (128) 32/85)

Minsk, Belorussian Center (hem, onco, peds), CIC 591, O Aleinikova (51 (54) 21/30)

Minsk, Hospital No. 9, N Milanovitch (66 (74) 11/55)

Belgium (WB high income): (19 teams) (627 (686) 277/350)

Antwerpen, Stuivenberg ZH and AZ Middelheim (hem), CIC 339, P Zachée, R de Bock (43 (45) 24/19)

Antwerpen-Edegem, University Antwerpen (hem), CIC 996, W Schroyens (44(47) 27/17)

Brugge, AZ St Jan (hem), CIC 506, D Selleslag, A Van Hoof, J Van Droogenbroeck, K Van Eygen (47 (53) 21/26)

Brussels, Institut Jules Bordet and the Children's University Hospital, CIC 215, D Bron, E Sariban, C Devalck, A Ferster (39 (39) 20/19)

Brussels, Clinique universitaire St Luc (hem, ads), CIC 234, A Ferrant (44 (46) 20/24)

Brussels, Clinique Universitaire St Luc (peds), CIC 234, C Vermylen (14 (20) 6/8)

Brussels, Hôpital Erasme (hem), CIC 596, B Bailly, A Kentos, M Lambermont, A Deweiwere (14 (16) 0/14)

Brussels, Ac Z VUC University Hospital (hem, onco), CIC 630, B Van Camp, A Schots (26 (29) 11/15)

Charleroi, Hôpital Notre-Dame (hem, onco), CIC 349, M André (11 (13) 1/10)

Charleroi, Hôpital Vésale de Charleroi (hem), CIC 804, A Triffet (6 (6) 0/6)

Gent, University Hospital (hem, ads, peds), CIC 744, LA Noens (48 (50) 24/24)

Haine St Paul, Hôpital de Jolimont (hem), CIC 234, A Delannoy, C Ravoot, N Straetmans, V Delrieu (16 (19) 0/16)

Hasselt, Virga Jesse Ziekenhuis (hem), CIC 632, K Theunissen, V Madoe (29 (31) 0/29)

Leuven, University Hospital Gasthuisberg (hem, ads, peds), CIC 209, G Verhoef, M Delforge, J Maertens, D Dierickx (116 (131) 75/41)

Liège, CHR de la Citadelle (hem, onco), CIC 353, S Van Steenweghen, C Andre, F Scerbo (10 (12) 0/10)

Liège, University Hospital Sart-Tilman (hem), CIC 726, Y Béguin, B De Prijck (56 (58) 35/21)

Roeselare, Heilig Hartziekenhuis (hem, onco), CIC 646, F Van Aelst, J Tytgat, J Demol (16 (18) 2/14)

Wilrijk, Sint Agustinos GVA (hem), CIC 715, J Lemmens (16 (16) 0/16)

Yvoir, Clinique universitaire Mont-Godinne (hem), CIC 234, C Doyen (32 (37) 11/21)

Bosnia-Herzegovina (WB middle income): (2 teams) (6 (6) 1/5)

Sarajevo, Clinical centre University Sarajevo (hem), CIC 198, A Sofo-Hafizovic (0 (0) 0/0)

Tuzla, University Clinical Centre of Tuzla (hem), CIC 647, A Kopic (6 (6) 1/5)

- Bulgaria** (WB middle income): (2 teams) (53 (57) 12/41)
Sofia, Pediatric Hospital for Oncohematology and Bone Marrow Transplantation (peds, hem, onco), CIC 346, D Bobev, B Avramova, M Yordanova (19 (23) 12/7)
Sofia, National Centre of Hematology and Transfusiology BMT, CIC 859, G Mihaylov (34 (34) 0/34) centre under reconstruction
- Croatia** (WB high income): (3 teams) (133 (148) 23/110)
Zagreb, Clinic Hospital 'Merkur', CIC 159, B Jaksic, H Minigo (44 (47) 4/40)
Zagreb, Clinical Hospital Center, CIC 302, B Labar, D Nemet, M Mrsic (77 (87) 19/58)
Zagreb, University Hospital Dubrava (hem), CIC 407, V Pejisa, O Jaksic (12 (14) 0/12)
- Cyprus** (WB high income): (1 team) (9 (9) 0/9)
Nicosia Makarios Hospital III (hem), CIC 575, N Papaminas, C Stylianou (9 (9) 0/9)
- Czech Republic** (WB high income): (9 teams) (472 (537) 202/270)
Brno, Masaryk University Hospital (ads, peds, hem, onco), CIC 597, J Vorlicek, J Mayer, Z Koristek (102 (129) 34/68)
Hradec Kralové, Charles University (hem), CIC 729, L Jebavy, S Filip, M Blaha (55 (58) 29/26)
Olomouc, University Hospital (hem, onco), CIC 574, K Indrak (51 (55) 18/33)
Pilsen, Faculty Hospital (hem, onco), CIC 718, V Koza, K Steinerova (81 (100) 43/38)
Prague, Clinical Haematology, Charles University, CIC 318, T Kozak (23 (24) 0/23)
Prague, Thomayer Memorial Hospital, CIC 375, J Abrahamova, J Nepomucká (0 (0) 0/0)
Prague, University Hospital Motol (peds, hem, onco), CIC 452.1, P Sedlacek (32 (33) 25/7)
Prague, Charles University, CIC 745, M Trneny (74 (80) 0/74)
Prague, Institute of Hematology and Blood Transfusion, A Vitek, P Kobyłka CIC 656 (54 (58) 53/1)
- Denmark** (WB high income): (4 teams) (257 (314) 82/175)
Aalborg, Aalborg Hospital (hem/clin immunology), CIC 848, J Baech, I Christiansen (15 (20) 0/15)
Aarhus, Amtssygehus (hem) and Skejby Hospital, CIC 634+510, E Segel, B Moeller (64 (80) 2/62)
Copenhagen, Rigshospitalet (hem), CIC 206, H Seneglov (145 (181) 80/65)
Copenhagen, Herlev Hospital (hem), University, CIC 568, N Clausen (33 (33) 0/33)
- Estonia** (WB high income): (2 teams) (47 (49) 16/31)
Tallinn, North Estonia Medical Centre, K Vaht, T Jogi (22 (24) 0/22)
Tartu, University Hospital (hem, onco), CIC 746, H Everaus, A Kaare (25 (25) 16/9)
- Finland** (WB high income): (7 teams) (260 (301) 95/165)
Helsinki, Children's Hospital, CIC 219, U Pihkala, S Vetterranta (17 (31) 11/6)
Helsinki, University Central Hospital, Dept. of Medicine, CIC 515, L Volin (93 (93) 61/32)
Helsinki, University Hospital (onco), CIC 833, H Joensuu, R Janes (8 (8) 0/8)
Kuopio, Department of Medicine, University Hospital, CIC 396, E Jantunen, T Nousiainen (34 (34) 0/34)
Oulu, University Central Hospital (hem, onco), CIC 690, P Koistinen, T Turpeenniemi-Hujanen (23 (27) 0/23)
Tampere, University Hospital (ads, peds), CIC 635, E Koivunen, T Lehtinen, R Silvennoinen, M Arola (39 (52) 0/39)
Turku, University Central Hospital, CIC 225, K Remes (46 (56) 23/23)
- France** (WB high income): (75 teams) (3933 (4326) 1403/2530)
Amiens, CHU Amiens, CIC 955, G Damaj (48 (50) 0/48)
Angers, Centre Hospitalier, CIC 650, N Ifrah, S François, P Guardiola (52 (62) 20/32)
Argenteuil, Hopital Victordupouy (hem), CIC 199, L Sutton (17 (18) 0/17)
Besançon, Hôpital Jean Minjoz & Hôpital St Jacques (ads, peds), CIC 233, P Herve, E Deconinck, P Rohrllich (95 (104) 54/41)
Bordeaux, CHU Bordeaux Groupe Hospitalier Pellegrin-Enfants (peds, hem, onco), CIC 978, C Jubert (19 (21) 11/8)
Boulogne sur Mer, CHU Hopital Duchenne, B Choufi, Dr Voronina (13 (13) 0/13)
Brest, CHU de Brest, Hôpital Morvan (hem), D Gillet (57 (67) 16/41)
Caen, Centre Régional François Baclesse, C Fruchart (25 (27) 0/25)
Caen, Hôpital Cote de Nacre (peds, hem, onco), P Boutard (0 (0) 0/0)
Caen, Centre Hospitalier Régional, CIC 251, O Reman (50 (56) 26/24)
Clermont Ferrand, Centre Jean Perrin and CHU Hotel Dieu (ads, peds), CIC 273, J-O Bay, F Dèmeocq, P Travade (129 (145) 51/78)
Colmar, Hôpital civil, B Audhuy (8 (8) 0/8)
Corbeil Essonne, Hôpital Gilles de Corbeil, A Devidas (14 (18) 0/14)
Créteil, Hôpital H Mondor (allo), CIC 252, C Cordonnier, M Kuentz (35 (43) 29/6)
Créteil, Hôpital H Mondor (auto), CIC 432, C Haioun (21 (23) 0/21)
Dijon, Hôpital d'Enfants, D Caillot (76 (89) 0/76)
Dunkerque, Centre Hospitalier (hem), M Wetterwald (14 (17) 0/14)
Grenoble, Centre Hospitalier A Michallon (ads, peds), CIC 270, JY Cahn, F Garban, P Drilat, D Plantaz (83 (86) 43/40)
Lille, Centre Hospitalier Saint Vincent, N Cambier (14 (14) 0/14)
Lille, Centre Oscar Lambret (onco, peds), A Defachelles (11 (11) 0/11)
Lille, Hôpital Claude Huriez, CIC 277, F Bauters, JP Jouet (105 (116) 74/31)
Lille, Hôpital Jeanne de Flandre (peds), CIC 963, B Bruno (2 (4) 1/1)
Limoges, Centre Hospitalier Dupuytren (ads, hem), CIC 977, D Bordessoule, P Turlure (56 (57) 10/46)
Lyon, Centre Léon Bérard, CIC 241, P Biron, T Philip (55 (60) 0/55)
Lyon, Hôpital Edouard Herriot, CIC 671, M Michallet, E Wattel, A Thiebaut, F Nicolini, J Troncy, X Thomas (76 (86) 58/18)
Lyon, Institut d'Hématologie et d'Oncologie (IHOP), CIC 806, Y Bertrand, V Mialou (38 (40) 24/14)
Lyon Sud (Pierre Benite), Centre Hospitalier, B Coiffier (81 (90) 0/81)
Marseille, Inst. Paoli-Calmettes, CIC 230, D Blaise (307 (328) 101/206)
Marseille, Hôpital d'Enfants de la Timone (onco), CIC 301, C Coze, JL Bernard J Frayfer (9 (11) 0/9)
Marseille, Hôpital d'Enfants de la Timone (hem), M Gérard, F Bourgue (27 (29) 25/2)
Meaux, Centre Hospitalier de Meaux, J Frayer (9 (9) 0/9)
Metz, Hôpital Notre-Dame de Bon-Secours (hem), V Dorvaux, B Christen (21 (21) 0/21)
Montpellier, CHR Lapeyronie (hem, ads), CIC 926, JF Rossi, N Fegueux (129 (134) 66/63)
Mulhouse, Hôpital du Hasenrain, B Drénou, M Ojeda (18 (19) 0/18)
Nancy, Vandoeuvre-les-Nancy, CHU Nancy-Brabois (hem), P Lederlin, F Witz (38 (44) 0/38)
Nancy, Vandoeuvre-les-Nancy, Hôpital d'Enfants, P Bordigoni (40 (41) 38/2)
Nantes, Hotel Dieu (hem), CIC 253, M Mohty, JL Harousseau (213 (222) 87/126)
Nice, Centre Antoine Lacassagne, A Thyss (31 (33) 0/31)
Nice, Hôpital de l'Archet (incl. Hopital Lenval (peds)), CIC 523, N Gratecos, JP Cassuto, D de Ricaud (45 (51) 25/20)
Paris, Hôpital Necker (ads, hem), CIC 160, B Varet, C Bélanger, A Veil (69 (73) 25/44)
Paris, Hôpital Necker des enfants malades (allo), CIC 201, A Fischer (33 (35) 33/0)
Paris, Hôpital St Louis (hem, allo, ads, peds), CIC 207 + CIC 748, G Socié, E Gluckman, H Esperou (114 (115) 114/0)
Paris, Hôpital D'enfants Armand-Trousseau, CIC 675, G Leverger, A Auvrignon, L Douay (7 (7) 0/7)
Paris, Hôpital Cochin (auto), M Quarre (30 (35) 0/30)
Paris, Hôpital Européen GP, JM Andrieu, C Le Maignan (0 (0) 0/0)
Paris, Hôpital Pitié Salpêtrière (hem), CIC 262, J-P Vernant, V Leblond, N Dedhin (94 (108) 46/48)
Paris, Hôpital St Louis (auto-leuk), CIC 960, H Dombret, L Degos, P Rousselot (2 (2) 0/2)
Paris, Hôpital St Louis (auto, immuno-hem), J-P Fermand, B Arnulf (66 (73) 0/66)
Paris, Hôpital St Louis (auto, hem-onco), CIC 805, C Thieblemont, G Gisselbrecht (73 (81) 0/73)
Paris, Hôpital St Antoine (hem), CIC 213, C Gorin, L Fouillard (33 (35) 6/27)
Paris, Hôpital Saint Antoine (hem), CIC 222, B Rio, JP Marie, O Legrand (57 (65) 34/23)
Paris, Hôpital Robert Debré, CIC 631, A Baruchel, JH Dalle, G Cotten (48 (51) 48/0)
Paris, Institut Curie (ads, onco, peds), CIC 702, J Michon (56 (56) 0/56)
Paris, Hôpital Tenon (onco), CIC 747, JP Lotz (18 (40) 0/18)
Paris, Hôpital d'Instruction des Armées Percy, Clamart, T de Revel, G Nedellec (38 (40) 22/16)

- Pessac, Hôpital Haut-Lévêque, CHU Bordeaux, CIC 267, N Milpied, G Marit, R Tabrizi (161 (179) 81/80)
- Poitiers, CHU de Poitier (hem), Hôpital la Miletrie, CIC 264, M Maillard (65 (79) 22/43)
- Pontoise, Unité d'hématologie et de thérapie Cellulaire, Hospital René Dubois, CIC 961, L Fouillard (24 (24) 0/24)
- Reims, Hôpital Robert Debré (hem, onco), CIC 959, A Delmer, B Pignon, C Himberlin (33 (36) 0/33)
- Rennes, Hôpital de Pontchaillou (hem), CIC 661, T Lamy (114 (121) 28/86)
- Rennes, CHRU, Clinique Médical Infantil, CIC 661, E Le Gall, V Gandemer (14 (15) 9/5)
- Roubaix, Hôpital V Provo (hem), I Plantier-Colcher (15 (15) 0/15)
- Rouen, Hôpital Charles Nicolle, JP Vannier (13 (14) 8/5)
- Rouen, Centre Henri Becquerel, CIC 941, H Tilly, P Lenain (64 (74) 16/48)
- St Cloud, Centre René Huguenin, CIC 551, M Janvier (23 (29) 0/23)
- St Etienne, CHRU St Etienne (hem), D Guyotat, P Oriol (67 (81) 29/38)
- Strasbourg, Hôpital de Hautepierre (ads, peds), CIC 672, B Lioure, P Lutz (117 (132) 51/66)
- Toulouse, Hôpital de Purpan (hem), CIC 624, M Attal, J-C Nogaro (129 (138) 38/91)
- Toulouse, Hôpital de Purpan (peds), CIC 624, H Rubie (7 (7) 1/6)
- Tours, Hôpital Bretonneau (onco), CIC 272, P Colombat (74 (77) 0/74)
- Valenciennes, Hosp. De Valenciennes, M Simon (15 (15) 0/15)
- Villejuif, Hôpital Paul Brousse, B Delmas-Marsalet (4 (5) 0/4)
- Villejuif, Institut G Roussy (peds), CIC 503, O Hartmann, DValteau-Couanet (55 (82) 0/55)
- Villejuif, Institut G Roussy (ads, hem), CIC 666, J-H Bourhis, C Boccaccio, J-M Vantelon (120 (120) 33/87)
- Georgia** (WB low income): no report
- Germany** (WB high income): (112 teams) (4971 (5920) 2376/2595)
- Aachen, Universitätsklinikum RWTH (hem, onco), Med. Klinik. IV, CIC 348, O Galm, T Brümmendorf (21 (22) 0/21)
- Augsburg, Zentralklinikum (hem, onco), Med. Klinik. II, Chr Schmidt, G Schlimok (41 (50) 13/28)
- Bad Saarow, HELIOS Klinikum, P Reichardt, K Senftleben (8 (11) 0/8)
- Bayreuth, Klinikum Bayreuth, Ch Stoll, A Kiani (8 (12) 0/8)
- Berlin, Vivantes Klinikum Neukölln (hem, onco), M de Wit (6 (7) 0/6)
- Berlin, Universitäts-Klinik der FU Benjamin Franklin (hem, onco), CIC 590, L Uharek, E Thiel (90 (102) 44/46)
- Berlin, Universitätsklinikum der HU Charité Campus Virchow Klinikum (ads, hem, onco), CIC 807, B Dörken, R Arnold (120 (136) 71/49)
- Berlin, Universitätsklinikum der HU Charité Campus Virchow Klinikum (peds), CIC 336, G Gaedicke, W Ebell (33 (39) 30/3)
- Berlin, HELIOS Klinikum Berlin, Robert-Rössle Klinik (hem, onco), CIC 518, W-D Ludwig, M Hildebrandt (no report)
- Bielefeld, Franziska Hospital (hem, onco), HJ Weh, A Zumsprekel (0 (1) 0/0)
- Bochum, Knappschafts-Krankenhaus (hem, onco), CIC 124, W Schmiegel, C Teschendorf (36 (44) 0/36)
- Bonn, Universitätsklinikum (ads, hem, onco), P Brossart, I Schmidt-Wolf (40 (55) 0/40)
- Bonn, Universitätsklinikum (peds, hem, onco), A Simon, D Dilloo (1 (2) 0/1)
- Braunschweig, Städtisches Klinikum (hem, onco), CIC 674, G Fritsch, F Lordick (26 (33) 0/26)
- Bremen, DIAKO (hem, onco), KH Pflüger, J Kullmer (19 (21) 0/19)
- Bremen, Klinikum Bremen-Mitte, St Jürgenstrasse, CIC 602, B Hertenstein, H Thomssen (30 (32) 14/16)
- Chemnitz, Krankenhaus Küchwald (hem), CIC 104, M Hänel, A Morgner (57 (72) 0/57)
- Cottbus, Carl-Thiem Klinikum, Med. Klinik. II (hem), H Steinhauer, N Peter (16 (22) 0/16)
- Dortmund, St Johannes Hospital (hem, onco), H Pielken, M Hindahl (0 (0) 0/0)
- Dresden, Universitätsklinikum Carl Gustav Carus (hem, onco), CIC 808, G Ehninger, M Bornhäuser (177 (193) 142/35)
- Duisburg, St Johannes Hospital, CIC 519, C Aul, R Hartwig (43 (61) 0/43)
- Düsseldorf, Universitätsklinikum, Medizinische Klinik (hem, onco) R Haas, G Kobbe and St Antonius Hospital, Eschweiler (hem, onco), CIC 390, R Fuchs, F Schlegel (109 (131) 42/67)
- Düsseldorf, Universitätsklinikum Zentrum für Kinderheilkunde, CIC 651, A Borkhardt, R Meisel, F Schuster (21 (24) 12/9)
- Erlangen, Universitätsklinikum (hem, onco), Med Klinikum 5, CIC 809:1, W Rösler, A Mackensen (63 (71) 28/35)
- Erlangen, Universitäts-Klinik für Kinder und Jugendliche (hem, onco), CIC 809:2, W Holter, W Rascher, D Stachel (13 (17) 7/6)
- Essen, Universitätsklinikum (ads), DW Beelen (164 (175) 156/8)
- Essen, Universitätsklinikum (peds), CIC 259, B Kremens (19 (21) 16/3)
- Essen, Evangelisches Krankenhaus Essen-Werden GmbH (hem, onco), CIC 784, W Heit, M Wattad (44 (52) 10/34)
- Essen, Universitätsklinikum (hem), CU Dührsen, R Noppene (44 (51)0/44)
- Essen, West German Cancer Center, M Schuler (no report)
- Frankfurt, KH Nordwest, E Jäger, E Weidmann (9 (10) 0/9)
- Frankfurt a M, Universitätsklinikum, DJW Goethe (hem, onco, peds), CIC 138, T Klingebiel, P Bader (38 (44) 29/9)
- Frankfurt, Klinikum Frankfurt (Oder), CIC 190, M Kiehl (18 (28) 1/17)
- Frankfurt/Mainz, Onkologische Gemeinschaftspraxis, CIC 193, W Knauf (22 (25) 0/22)
- Frankfurt a M, JW Goethe-Universität (ads), CIC 297, H Serve, H Martin (71 (77) 45/26)
- Frankfurt/Mainz, Städtisches Klinikum (ads), HG Derigs, W Schmidt (no report)
- Freiburg i. Br., Universitätsklinik (ads, hem, onco), Med. Klinik. I, CIC 810, R Mertelsmann, J Finke (167 (195) 84/83)
- Freiburg i. Br., Universitätskinderklinik (hem, onco), CIC 810, C Niemeyer, B Strahm (13 (17) 10/3)
- Giesen, Universitätskinderklinik (hem, onco), CIC 326, A Reiter, W Wössmann (15 (17) 11/4)
- Göttingen, Georg-August Universität (hem, onco), CIC 552, L Trümper, G Wulf (88 (100) 50/38)
- Greifswald, Ernst-Moritz-Arndt Universität (ads + peds), CIC 530, G Dölken, W Krüger (28 (31) 18/10)
- Gütersloh, Städt. Krankenhaus (hem, onco), G Massenkeil (4 (6) 0/4)
- Hagen, Kath. Krankenhaus (hem, onco), CIC 536, V Rethwisch, D Aufermann, H-W Lindemann (22 (27) 0/22)
- Halle, Martin Luther Universität (hem, onco, ads), CIC 338, G Behre, H-J Schmol (46 (77) 11/35)
- Halle, Martin Luther Universität (hem, onco, peds), CIC 654, D Körholz, C Manz- Körholz (2 (3) 1/1)
- Hamburg, Asklepios Klinik St George (hem, onco), CIC 153, N Schmitz, M Zeis (103 (108) 63/40)
- Hamburg, AK Altona (hem, onco), CIC 366, D, Braumann, H Salwender (45 (58) 0/45)
- Hamburg, Eppendorf-Krankenhaus (hem, onco, ads, peds) CIC 614, AR Zander, N Kröger, H Kabisch (159 (176) 138/21)
- Hamburg, Universitätsklinikum-Hamburg-Eppendorf (hem, onco, ads), Med. Klin. II, CIC 673, C Bokemeyer (33 (49) 0/33)
- Hamel, Gesundheitseinrichtungen Hameln-Pyrmont (hem, onco), H Schmidt, K Buhmann (15 (25) 4/11)
- Hamm, St Marien Hospital (hem, onco), CIC 147, H Dürk, D Metzner (15 (21) 0/15)
- Hamm, Evangelisches Krankenhaus (hem, onco), CIC 509, J Schubert, E Lange (17 (18) 0/17)
- Hannover, Medizinische Hochschule (hem, onco, ads), CIC 295, A Ganser, J Krauter (91 (104) 63/28)
- Hannover, Medizinische Hochschule (hem, onco, peds), CIC 295, K Welte, K Sykora (34 (34) 32/2)
- Hannover, Klinikum Region Hannover, Krankenhaus Siloah, CIC 342, H Kirchner, M Sosada (17 (28) 0/17)
- Heidelberg, Universitätsklinikum (hem, onco), CIC 524, P Dreger, AD Ho (254 (313) 95/159)
- Heidelberg, Angelika-Lautenschläger-Klinik (peds), J Greil, A Kulozik (12 (13) 10/2)
- Homburg/Saar, Universitätsklinikum des Saarlandes (hem, onco), CIC 785, M Pfreundschuh, G Held (79 (88) 29/50)
- Homburg/Saar, Universitätsklinikum für Kinder und Jugendmedizin, C Hoffmann (7 (11) 0/7)
- Idar-Oberstein, Klinik für KMT, Hämato-/Onkologie, CIC 592, A Fauser, H Biersack (19 (19) 13/6)
- Jena, Universitätsklinikum Jena (hem, onco), Innere Medizin II, CIC 533, A Hochhaus, HG Sayer (55 (65) 25/30)
- Jena, Universitätsklinikum (hem, onco), Klinik f Kinder-u Jugendmedizin, CIC 750, J Beck, B Gruhn (19 (22) 13/6)
- Kaiserslautern, Westpfalz-Klinikum (hem), CIC 357, H Link, St Mahlmann (7 (10) 0/7)

- Karlsruhe, Städtisches Klinikum (hem, onco), CIC 290, M Bentz, S Wilhelm (31 (40) 3/28)
- Kassel, Klinikum Kassel (hem, onco), M Wolf, EU Steinhauer (19 (21) 0/19)
- Kiel, Universitätsklinikum Schleswig-Holstien (ads), CIC 256, M Gramatzki, T Valerius (95 (114) 42/53)
- Kiel, Universitätsklinikum Schleswig-Holstien (peds), CIC 256, M Schrappe (7 (8) 3/4)
- Köln, Universitätsklinikum (ads, peds), CIC 534, M Hallek, Chr Scheid, F Berthold, T Simon (146 (154) 69/77)
- Leipzig, Universitätsklinikum Leipzig AöR (hem, onco), CIC 389, D Niederwieser (193 (218) 140/53)
- Lemgo, Klinikum Lippe-Lemgo, F Hartmann, C Constantin (4 (4) 0/4)
- Lübeck, Universitätsklinikum Schleswig-Holstein, Campus Lübeck (ads), CIC 367:1, H Lehnert, T Wagner (15 (15) 0/15)
- Lübeck, Universität zu Lübeck, Klinik f. Kinder-u. Jugendmedizin (peds), CIC 367:2, E Herting, M Lauten (3 (3) 0/3)
- Lübeck, Sana Kliniken Lübeck (hem, onco), S Fetscher, J Schmielau (19 (26) 0/19)
- Ludwigshafen, Klinikum der Stadt, M Uppenkamp, M Hoffmann (10 (10) 0/10)
- Magdeburg, Universitätsklinikum Magdeburg AöR (hem, onco), CIC 359, T Heinicker, T Fischer (20 (21) 0/20)
- Mainz, Uniklinik Mainz (hem), Med. Klin. III, CIC 786, W Herr, T Wölfel (70 (74) 37/33)
- Mannheim, Med. Klinik III, A Hochhaus, J Hastka, W Hofmann (15 (22) 0/15)
- Marburg, Uniklinikum Marburg (hem, onco), CIC 645, A Neubauer, A Burchert (67 (95) 32/35)
- Minden, Klinikum Minden (hem, onco), M Griesshammer, HJ Tischler (24 (35) 0/24)
- Mönchenglöblich, Kliniken Maria Hilf GmbH, KH St Franziskus, U Graeven (no report)
- Munich, Klinikum Grosshadern der LMU (ads, hem, onco), CIC 513, H-J Kolb, W Hiddemann (124 (131) 78/46)
- Munich, Klinikum Innenstadt der LMU (peds, hem, onco), CIC 513, I Schmidt, M Albert (26 (33) 23/3)
- Munich, SKH München-Harlaching (hem, onco), CIC 664, M Hentrich, M Karthaus (19 (29) 0/19)
- Munich, Städt. Krankenhaus Schwabing (hem, onco, peds), CIC 189, S Burdach, A Wawer (16 (22) 4/12)
- Munich, Klinikum Innenstadt der LMU, M Reincke, F Oduncu (13 (27) 0/13)
- Munich, SKH München-Schwabing (hem, onco), Ch Nerl, N Fischer (12 (15) 0/12)
- Munich, Klinikum rechts der Isar (hem, onco), CIC 558, C Peschel, H Menzel (73 (86) 21/52)
- Münster, Universitätsklinikum Münster, Klinik f. Kinder u. Jugendmedizin (hem, onco), CIC 505, H Jürgens, K Ehlert (26 (28) 19/7)
- Münster, Westfälische Wilhelms-Universität (hem, onco), Innere Med. CIC 680, W Berdel, J Kienast (132 (157) 79/53)
- Nürnberg, Klinikum-Nord, Einheit f. Knochenmarktransplantation, Med. Klinik. V (hem, onco), CIC 625, M Wilhelm, H Wandt (57 (68) 29/28)
- Oldenburg, Klinikum Oldenburg (hem, onco), CIC 749, B Metzner, C H Köhne (75 (109) 23/52)
- Osnabrück, Klinikum Osnabrück (hem, onco), CIC 101, R Peceny, HJ Hartlapp (11 (15) 0/11)
- Potsdam, Klinikum Ernst-von-Bergmann (hem, onco), CIC 106, G Maschmeyer, A Dukat (29 (34) 0/29)
- Regensburg, Universität Regensburg (hem, onco), CIC 787, R Andreesen, E Holler, A Reichle (97 (117) 51/46)
- Rostock, Universität Rostock Med. Fakultät (hem, onco), CIC 585, M Freund, M Schmitt (40 (50) 17/23)
- Rotenburg-Wümme, Diakoniekrankenhaus, J Potratz, F Heits (12 (13) 0/12)
- Siegen, St Marien- Krankenhaus (hem, onco), CIC 135, W Gassmann, K Franke (no report)
- Stuttgart, Robert-Bosch-Krankenhaus (hem, onco), CIC 145, W Aulitzky, S Martin, M Kaufmann (56 (63) 20/36)
- Stuttgart, Olgahospital (hem, onco), Pädiatrisches Zentrum, CIC 701, St Bielack, E Koscielniak (1 (1) 0/1)
- Stuttgart, Bürgerhospital and Katharinenhospital (onco), HG Mergenthaler, J Schleicher (17 (28) 0/17)
- Stuttgart, Diakonie- Klinikum, E Heidemann (11 (16) 0/11)
- Tübingen, Eberhard-Karls-Universität Med.-u. Poliklinik (hem, onco), CIC 223, L Kanz, C Faul (122 (146) 72/50)
- Tübingen, Universitätsklinik, Kinderheilkunde u. Jugendmedizin (hem, onco), Abteilung Pädiatrie, CIC 535, R Handgretinger, P Lang (48 (54) 39/9)
- Ulm, Universitätsklinik, Med. Klinik u. Poliklinik (hem, onco), CIC 204, H Döhner, D Bunjes (119 (132) 61/58)
- Ulm, Universitätsklinik, Klinik u. Poliklinik f. Kinder-u. Jugendmedizin, CIC 204, KM Debatin, A Schultz (32 (36) 31/1)
- Villingen, Schwarzwald-Baar Klinikum, Innere Medizin II, W Brugger, F Köhler (24 (28) 0/24)
- Westerstede, Ammerland Klinik, D Kohl, W Holtkamp (7 (7) 0/7)
- Wiesbaden, Deutsche Klinik für Diagnostik, CIC 311, R Schwerdtfeger, M Schleunig, H Baurmann (81 (88) 74/7)
- Wiesbaden, Dr Horst-Schmidt Klinikum (hem, onco), CIC 586, N Frickhofen, B Jung (11 (15) 0/11)
- Würzburg, Universität Würzburg, Med Klinik u. Poliklinik II (hem, onco, ads), CIC 712, H Einsele, G Stuhler (153 (215) 70/83)
- Würzburg, Universitätsklinikum Würzburg, Kinderklinik u. Poliklinik (peds), CIC 196, PG Schlegel (16 (21) 9/7)
- Greece** (WB high income): (12 teams) (268 (286) 140/128)
- Alexandroupolis, Thrace University Medical School (Hem), CIC 681, G Bourikas, D Pantelidou (5 (5) 0/5)
- Athens, Laikon General Hospital, CIC 328, Y Rombos, D Boutsis, V Kalotychoy (no report)
- Athens, Medical Center (hem), CIC 603, A Pigadito (2 (2) 0/2)
- Athens, University of Athens, CIC 604, I Dervenoulas (16 (16) 1/15)
- Athens, Evangelismos Hospital (hem), CIC 622, D Karakassis, N Harhalakis, E Nikiforakis (70 (77) 48/22)
- Athens, General Hospital G Gennimatas (hem), CIC 638, A Galanopoulos (4 (4) 0/4)
- Athens, Diagnosis and Therapy Centre 'Hygeia' (hem), Maroussi, CIC 643, G Karianakis (9 (9) 0/9)
- Athens, Hellenic Cancer Institute St Savas (onco), CIC 751, A Efremidis, G Koumakis, M Stamatellou, K Papanastasiou, I Fillis (27 (34) 7/20)
- Athens, 'Aghia Sophia' Children's Hospital, CIC 752, S Graphakos, G Vessalas (43 (46) 38/5)
- Crete, University Hospital Heraklion, CIC 352, M Kalmanti (2 (2) 0/2)
- Patras, University Medical School (hem), CIC 281, NC Zoumbos, A Spyridonidis, A Symeonidis, M Tiniakou (26 (26) 18/8)
- Thessaloniki, The George Papanicolaou General Hospital (hem), CIC 561, A Anagnostopoulos (64 (65) 28/36)
- Hungary** (WB high income): (5 teams) (334 (347) 94/240)
- Budapest, St Istvan and St Laszlo Hospital of Budapest (hem ads), CIC 556, T Masszi, P Reményi (176 (186) 67/109)
- Budapest, Szent Laszlo Hospital (peds), CIC 824, G Kriván, E Torbvágyi, L Lengyel (31 (32) 12/19)
- Debrecen, University of Debrecen, CIC 648, A Kiss (47 (48) 0/47)
- Miskolc, Postgraduate Medical School (peds), CIC 599, N Kalman, G Marton (24 (24) 15/9)
- Pécs, University of Pécs, Internal Medicine, CIC 682, H Losonczy, M Dávid, Á Szomor (56 (57) 0/56)
- Iceland** (WB high income): (1 team) (21 (23) 0/21)
- Reykjavik, National University Hospital (hem), CIC 605, S Reykdal (21 (23) 0/21)
- Iran** (WB low income): (2 teams) (426 (433) 259/167)
- Shiraz, Nemazee Hospital (hem, onco), CIC 188, M Ramzi (60 (61) 10/50)
- Teheran, Shariati Hospital (hem, onco), CIC 633, M Jahani (366 (372) 249/117)
- Ireland** (WB high income): (5 teams) (147 (168) 69/78)
- Cork, Regional University Hospital (hem), O Gilligan, M Cahill (0 (0) 0/0)
- Dublin, St James's Hospital (hem), CIC 257, C Flynn, P Browne (98 (106) 54/44)
- Dublin, St Vincent's Hospital (hem, onco), CIC 541, J Crown, K Murphy, M Connell (11 (14) 0/11)
- Dublin, Our Lady's Hospital of Sick Children, Crumlin, CIC 774, A O'Meara (21 (31) 15/6)
- Galway, University College Hospital, CIC 408, P Hayden (17 (17) 0/17)
- Israel** (WB high income): (8 teams) (626 (682) 333/293)
- Haifa, Rambam Medical Center (hem, ads, peds), CIC 345, J Rowe (104 (106) 47/57)

- Jerusalem, Hadassah University Hospital (ads, peds), CIC 258, R Or, S Slavin (117 (135) 74/43)
- Petach-Tikva, Beilinson Hospital (hem, ads) CIC 409, M Yeshurun (51 (53) 16/35)
- Petach-Tikva, Children's Medical Center, CIC 755, J Stein (29 (40) 19/10)
- Rehovot, Kaplan Hospital (hem), CIC 327, A Berribi (12 (13) 0/12)
- Tel Aviv, Sourasky Medical Center, CIC 161, E Naparstek (41 (46) 22/19)
- Tel Hashomer, Chaim Sheba Medical Center (hem, onco, ads) CIC 754, A Nagler, A Shimoni (225 (238) 122/103)
- Tel Hashomer, Chaim Sheba Medical Center (hem, onco, peds) CIC 572, A Toren, H Golan, B Bielora (47 (51) 33/14)
- Italy** (WB high income): (103 teams) (3749 (4407) 1376/2373)
- Alessandria, SS Antonio e Biagio e C Arrigo (hem), CIC 825, A Levis, A Allione, M Pini, F Salvi (64 (76) 27/37)
- Ancona, Azienda Ospedale Salesi Riuniti (peds, hem, onco), P Pierani (4 (5) 0/4)
- Ancona, Ancona University Hospital (hem), CIC 788, M Montanari, P Leoni (55 (61) 26/29)
- Ascoli Piceno, Mazzoni Hospital, CIC 119, P Galieni (30 (31) 9/21)
- Avellino, AOS Giovanni Di Guglieimo (hem), CIC 789, N Cantore, G Storti (23 (24) 7/16)
- 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 (28 (36) 0/28)
- Bari, Università degli Studi di Bari (hem), CIC 649, G Specchia, D Pastore (44 (53) 14/30)
- Bergamo, Ospedale Riuniti, CIC 658, A Rambaldi (103 (110) 37/66)
- Bologna, St Orsola-Malpighi (hem, onco), CIC 240, G Bandini, F Bonifazi, M Baccarani (129 (144) 56/73)
- Bologna, Poli S Orsola, Clinica pediatrica III, CIC 790, A Pession, A Prete (23 (24) 11/12)
- Bolzano, Ospedale S Maurizio (hem), CIC 299, M Casini, P Fabris, P Coser (65 (67) 19/46)
- Brescia, Azienda Spedali Civili (allo), CIC 141, D Russo, C Bergonzi (23 (23) 23/0)
- Brescia, Azienda Spedali Civili (auto), CIC 288, G Rossi, C Almicci (83 (114) 0/83)
- Brescia, Università degli Studi di Brescia (peds), CIC 741, F Porta, A Ugazio (12 (13) 11/1)
- Brindisi, Ospedaliera 'A Di Summa', Perrino Hospital (hem), CIC 920, G Quarta, S Pinna (15 (18) 2/13)
- Busto Arizio, Ospedale di circolo de Busto Arizio, CIC 927, L Montalbetti (12 (13) 0/12)
- Cagliari, Ospedale A Businco (hem), CIC 791, P Dessalvi (46 (51) 18/28)
- Cagliari, Centro Trapianti di Midollo Osseo (ads), CIC 811:1, G La Nasa (23 (29) 13/10)
- Cagliari, Ospedale per le Microcitemie (peds), CIC 811:2, M Orofino, M Addari (10 (10) 8/2)
- Catania, Ospedale Ferrarotto (hem), CIC 792, G Milone (36 (39) 11/25)
- Catania, University of Catania (peds, hem, onco), L Lo Nigro (8 (9) 7/1)
- Civitanove-Marche, Unita Operativa Di Medicina Interna, CIC 419, R Centurioni (8 (10) 0/8)
- Cremona, Ospedale Maggiore (hem), Medicina II, CIC 226, F Lanza, P Spedini, M Tajana (6 (7) 0/6)
- Cuneo, Hospital S Croce E Carle (hem), CIC 606, A Gallamini, N Mordini (23 (26) 13/10)
- Ferrara, St Anna Hospital (hem), CIC 330, F Lanza, S Moretti, GM Rigolin, A Cuneo (no report)
- Firenze, Ospedale di Careggi (hem, ads + peds), CIC 304 A + B, A Bosi, S Guidi, D Caselli, G Bernini (110 (124) 42/68)
- Foggia, Azienda Ospedaliero Universitario (hem), S Capalbo (4 (6) 0/4)
- Forli, Istituto Scientifico Romagnolo IRST Meldola, CIC 298, P Fattori, F Fabbri (10 (13) 0/10)
- Genova, Università, CIC 139, F Patrone, A Ballestrero (21 (30) 0/21)
- Genova, Ospedale S Martino (hem), CIC 217, A Bacigalupo (86 (98) 74/12)
- Genova, Istituto Giannina Gaslini (hem, onco), CIC 274, G Dini, E Lanino (39 (50) 19/20)
- Genova, Ospedaliera Universitaria San Martino (hem), CIC 987, A Carella (38 (42) 1/37)
- Ivrea, Ospedale Civile, G Altori (11 (14) 0/11)
- Latina, Ospedale S Maria Goretti, CIC 379, A De Blasio, E Zappone (14 (17) 0/14)
- Lecce, Ospedale Vitofazzi di Lecce (hem), CIC 868, N Di Renzo (29 (35) 0/29)
- Messina, Policlinico Universitario (onco), CIC 669, V Pitini (10 (14) 0/10)
- Milano, Ospedale di Niguarda (onco ST), CIC 184, S Siena, P Pedrazzoli, R Schiavo (11 (18) 0/11)
- Milano, Ospedale Maggiore di Milano, CIC 265, G Lambertenghi Deliliers (32 (36) 16/16)
- Milano, Ospedale Fatebenefratelli e Oftalmico (onco), CIC 269, G Farina, C Bianchi, D Pedretti (1 (2) 0/1)
- Milano, Ospedale di Niguarda (hem), CIC 294, P Marengo, R Cairoli, G Grillo (75 (80) 24/51)
- Milano, Istituto Europeo di Oncologia, CIC 331, G Martinelli (56 (70) 10/46)
- Milano, 1st Clinico Humanitas (hem, onco), CIC 354, L Castagna, A Santoro (67 (87) 12/55)
- Milano, Istituto Nazionale Tumori (ads, onco, peds), CIC 616, P Corradini, A Gianni, R Luksch (119 (141) 25/94)
- Milano, S Carlo Borromeo Hospital (onco), CIC 683, L Tedeschi (2 (3) 0/2)
- Milano, Istituto Scientifico HS Raffaele, CIC 813, F Ciceri, M Marcati, M Bregni (109 (149) 79/30)
- Mirano, Ospedale Civile (onco), CIC 563, G Azzarello, G Bertoldero, C Minotto (4 (6) 0/4)
- Modena, University of Modena (hem, onco), CIC 543, F Narni, A Donelli, G Torelli (47 (55) 13/34)
- Monza, Ospedale S Gerardo (peds), CIC 279, C Uderzo (31 (31) 24/7)
- Monza, Ospedale S Gerardo de 'Tintori, CIC 544, P Pioltelli, E Pogliani (54 (59) 26/28)
- Napoli, AORNA Cardarelli, Div. Di Oncologia, CIC 313, C Battista, G Pacilio, B Chiurazzi, G Iodice (no report)
- Napoli, Cardarelli Hospital (hem), CIC 607, F Ferrara, S Palmieri (33 (37) 0/33)
- Napoli, Cardarelli Hospital (hem), CIC 837, L Pezzullo, V Mettivier (15 (17) 0/15)
- Napoli, Hospital 'Pausilipon' (hem, peds), V Poggi, M Ripaldi (21 (23) 14/7)
- Napoli, Federico II University (hem), CIC 766, B Rotoli, C Selleri, G De Rosa (38 (40) 10/28)
- Napoli, National Cancer Institute (hem, onco), CIC 839, A Pinto, G Marcacci (17 (21) 0/17)
- Novara, Ospedale Maggiore della Carita, G Galdano (22 (24) 0/22)
- Nuoro, Ospedale San Francesco (hem), CIC 793, A Gabbas, A Palmas (no report)
- Orbassano, Ospedale San Luigi Orbassano, CIC 378, G Saglio, A Guerrasio (20 (35) 0/20)
- Padova, Centro Leucemie Infantili, CIC 285, C Messina, S Cesaro, L ZanESCO, S Varotto (20 (24) 11/9)
- Padova, Istituto Oncologia Veneto IVO-IRCCS, Oncologia Medica II, CIC 319, S Aversa, D Marino, A Jirillo, F Canova, C Trentin (5 (6) 0/5)
- Palermo, Ospedale die Bambini (peds, hem, onc), CIC 109, O Ziino (7 (7) 0/7)
- Palermo, Ospedale V Cervello (hem), CIC 392, R Scimè, A Cavallaro (55 (73) 22/33)
- Palermo, Ospedale 'La Maddalena' (hem, onco), CIC 692, M Musso, F Porretto, A Crescinanno (73 (89) 16/57)
- Parma, Cattedra di Ematologia, Univ. of Parma, CIC 245, V Rizzoli, M Mangoni (15 (16) 0/15)
- Pavia, Policlinico S Matteo (hem), CIC 286, EP Alessandrino (76 (85) 29/47)
- Pavia, Policlinico St Matteo (hem, onco, peds), CIC 557, M Zecca (75 (87) 69/6)
- Pavia, Fondazione S Maugeri (onco), CIC 771, A Zambelli, G Robustelli della Cuna (9 (12) 2/7)
- Perugia, Policlinico Monteluce (onco), CIC 573, AM Liberati, F Grignani (no report)
- Perugia, Policlinico Monteluce (hem), Università, CIC 794, MF Martelli, F Aversa, A Tabilio (102 (119) 47/55)
- Pesaro, Ospedale San Salvatore, CIC 529, G Visani (34 (40) 11/23)
- Pescara, Ospedale Civile (hem), CIC 248, P di Bartolomeo (47 (49) 37/10)

- Piacenza, Ospedale Civile (hem, onco), CIC 163, L Cavanna (26 (31) 4/22)
- Pisa, University of Pisa (ads, hem, onco), CIC 132, M Petrini, F Papineschi (54 (57) 17/37)
- Pisa, University of Pisa (peds, hem, onco), CIC 795, C Favre (18 (19) 15/3)
- Potenza, San Carlo Hospital, CIC 861, A Olivieri, M Cimminiello (20 (22) 2/18)
- Ravenna, Ospedale Civile (hem, onco), CIC 306, E Ruffa (23 (31) 0/23)
- Reggio di Calabria, Azienda Ospedale 'Riuniti e Morelli', CIC 587, P Iacopino, G Console (82 (92) 26/56)
- Reggio Emilia, Arcispedale S Maria Nuova (hem), CIC 660, L Gugliotta (24 (29) 4/20)
- Rimini, Ospedale Infermi Rimini (hem, onco), M Imola (5 (8) 0/5)
- Rionero in Vulture, Centro di Riferimento Oncologico della Basilicata (Hem), CIC 185, P Musto, N Di Renzo (3 (5) 0/3)
- Roma, Università 'La Sapienza' (hem), Faculty 1, CIC 232, R Foa, G Meloni (82 (96) 20/62)
- Roma, Ospedale S Camillo (hem), CIC 287, I Majolino, A Locasciulli (40 (42) 23/17)
- Roma, Università Cattolica (hem), CIC 307, S Cuore, S Sica, G Leone (51 (61) 20/31)
- Roma, Universitario Tor Vergata (hem) CIC 756, Ospedale Bambino Gesù (hem), Regina (151 (177) 67/84)
- Roma, Universitario Tor Vergata, CIC 383, G Lucarelli, J Gaziev (12 (12) 12/0)
- Roma, Ospedale Bambino Gesù (onco), CIC 796, A Donfrancesco, A Jenkner, A Castellano, L De Sio, R Cozza, P Fidani, C De Laurentis (no report)
- San Giovanni Rotondo, Hospital Casa Sollievo Sofferenza (hem), CIC 526, N Cascavilla, M Corsetti, M Greco (52 (62) 22/30)
- Sassari, Università Di Sassari (hem) CIC 870, M Longinotti (12 (15) 0/12)
- Siena, Ospedale Sclavo (hem), CIC 321, F Lauria (37 (40) 12/25)
- Taranto, Ospedale Nord (hem), CIC 332, P Mazza, G Palazzo, B Amurri (34 (37) 15/19)
- Torino, Azienda Ospedaliera S Giovanni, CIC 231, M Falda, F Locatelli (74 (82) 35/39)
- Torino, Ospedale Regina Margherita (peds), CIC 305, F Fagioli, E Vassallo (39 (42) 28/11)
- Torino, Ospedale Mauriziano Umberto 1, IRCC, CIC 377, M Aglietta, A Capaldi, F Carnevale (18 (24) 2/16)
- Torino, Ospedale S Giovanni (hem), CIC 696, M Boccadoro, M Massaia, C Tarella, B Benedetto, D Caracciolo, A Pileri (67 (109) 26/41)
- Treviso, Presidio Ospedaliero Treviso, CIC 415, F Ghelinzoni (50 (54) 0/50)
- Tricase (Lecce), Hospital C Panico, CIC 652, V Pavone (33 (37) 6/27)
- Trieste, Istituto per l'Infanzia, Clinical Pediatrica, CIC 525, M Rabusin (16 (17) 13/3)
- Udine, Policlinico Universitario (hem), CIC 705, R Fanin (62 (91) 23/39)
- Venezia, Ospedale Civile Riuniti di Venezia (hem), CIC 502, T Chisesi, M Vespignani, M Chinello (15 (16) 0/15)
- Verbania-Pallanza, UOA Oncologia Medica, Ospedale di Verbania, CIC 385, A Luraschi (5 (6) 0/5)
- Verona, Policlinico GB Rossi (hem, onco), CIC 623 + CIC 514, F Benedetti (62 (66) 18/44)
- Vicenza, Ospedale S Bortolo (hem), CIC 797, R Raimondi, F Rodeghiero (41 (46) 21/20)
- Jordan** (WB low income): (1 team) (83 (86) 37/46)
- Amman, King Hussein Cancer Centre (ads, peds), CIC 580, M Sarhan, A Hussein (83 (86) 37/46)
- Latvia** (WB middle income): (1 team) (10 (12) 3/7)
- Riga, Clinic Linezers, CIC 583, S Lejniece (10 (12) 3/7)
- Lebanon** (WB middle income): (2 teams) (34 (35) 11/23)
- Beirut, American University of Beirut, CIC 369, A Bazarbachi (34 (35) 11/23)
- Beirut, Makassed University Hospital (hem, onco), CIC 418, A Ibrahim (no report)
- Liechtenstein** (WB high income): no report
- Lithuania** (WB middle income): (2 teams) (122 (142) 41/81)
- Vilnius, University Hospital Santariskiu Klinikos (hem), CIC 644, A Slobinas, I Trociukas (111 (131) 38/73)
- Vilnius, University Children's Hospital (hem, onco), CIC 508, J Rascon (11 (11) 3/8)
- Luxemburg** (WB high income): (1 team) (8 (9) 0/8)
- Luxembourg, Dept. of Hematology-Oncology, Centre Hospitalier, S De Wilde (8 (9) 0/8)
- Macedonia** (WB middle income): (1 team) (22 (22) 3/19)
- Skopje, Medical Faculty (hem), CIC 381, B Georgievski (22 (22) 3/19)
- Malta** (WB high income): no report
- Moldova** (WB low income): no report
- Monaco** (WB high income): no report
- Montenegro** (WB middle income): no report
- Netherlands** (WB high income): (14 teams) (977 (1031) 437/540)
- Amsterdam, Academic Medical Center (ads, peds), CIC 247, MJ Kersten, J Zsiros (81 (89) 28/53)
- Amsterdam, VU University Medical Centre Amsterdam (hem), CIC 588, GJ Ossenkoppele (136 (142) 64/72)
- Amsterdam, The Netherlands Cancer Institute, CIC 976, S Rodenhuis, J Baars (29 (31) 0/29)
- Enschede, The Medisch Spectrum Twente, CIC 360, Dr Schaafsma (22 (25) 0/22)
- Groningen, University Hospital (hem), CIC 546, G van Imhoff (77 (86) 26/51)
- The Hague, Haga Hospital (Leyenburg), CIC 547, PW Wijermans (48 (49) 0/48)
- Leiden, University Medical Centre (ads, peds), CIC 203, R Willemze, M Egeler (101 (108) 98/3)
- Maastricht, University Hospital (hem, onco), CIC 565, HC Schouten, J Wagstaff (60 (63) 23/37)
- Nieuwegein, St Antonius Hospital, CIC 200, HK Koene, G Veth, O de Weerd (25 (28) 1/24)
- Nijmegen, University Hospital (ads, peds, onco), CIC 237, A Schattenberg, P Hoogerbrugge (124 (126) 63/61)
- Rotterdam, Dr Daniel den Hoed Cancer Center, CIC 246, JJ Cornelissen (156 (160) 68/88)
- Rotterdam, Sophia Children's Hospital, CIC 998, M van der Heuvel (3 (4) 0/3)
- Utrecht, University Hospital (hem, ads, peds), CIC 239, E Petersen, NM Wulffraat (98 (103) 66/32)
- Zwolle, Isala Kliniecken / Sophia Ziekenhuis, CIC 548, M von Marwijk Kooy (17 (17) 0/17)
- Norway** (WB high income): (6 teams) (213 (241) 75/138)
- Bergen, Haukeland Universitets Sjukehus, CIC 197, M Sjo (23 (33) 9/14)
- Oslo, Oslo University Hospital, CIC 235, D Albrechtsen, L. Brinch (80 (91) 59/21)
- Oslo, Rikshospitalet Radiumhospitalet (onco), CIC 782, G Lauritzen, S Kvaloy (37 (41) 6/31)
- Oslo, Ulleval Universitets Sykehus (hem), F Wisløff, J-MTangen (40 (40) 0/40)
- Tromso, University Hospital of Northern Norway (hem), IM. Dahl (10 (10) 0/10)
- Trondheim, St Olavs Hospital, J Hammerstrom, A Waage (23 (26) 1/22)
- Poland** (WB middle income): (18 teams) (835 (920) 323/512)
- Bydgoszcz, Nicolars Copernicus University (peds, hem, onco), CIC 764, M Wysocki, J Stycznski (32 (35) 19/13)
- Gdansk, Medical University (hem), CIC 799, A Hellmann (55 (58) 22/33)
- Gliwice, Maria Skłodowska Curie memorial Cancer Centre (onco), CIC 428, S Giebel (0 (0) 0/0)
- Katowice, Silesian Medical Academy (hem), CIC 677, S Kyrzcz-Krzemien (178 (200) 87/91)
- Krakow, Jagiellonian University (hem), CIC 553, A Skotnicki (54 (61) 12/42)
- Krakow, University Children's Hospital, CIC 507, J Gozdzik (12 (13) 7/5)
- Lodz, Medical University of Lodz (hem), CIC 171, T Robak (26 (29) 0/26)
- Lublin, Children's University Hospital (hem, onco), CIC 678, J Kowalczyk (20 (20) 13/7)
- Lublin, University Medical School (hem, onco), CIC 695, A Dmoszynska, M Wach, A Walter-Croneck, W Legiec (47 (56) 4/43)
- Poznan, Institute of Pediatrics, CIC 641, J Wachowiak (15 (18) 11/4)
- Poznan, K Marcinkowski University (hem), CIC 730, M Komarnicki (83 (85) 29/54)

Warsaw, Inst. of Haematology and Blood Transfusion, CIC 693, B Marianska, B Nasilowska-Adamska, A Tomaszewska, M Szczepinski (39 (40) 14/25)
 Warsaw, Maria Sklodowska-Curie, Centre of Oncology, CIC 800, J Walewski (42 (46) 0/42)
 Warsaw, Central Hospital Military Medical Academy (hem, onco), CIC 816, P Rzepecki, K Sulek, C Szczylik (40 (42) 10/30)
 Warsaw, Medical University of Warsaw (hem, onco), CIC 954, W Wiktor-Jedrzejczak, A Deptala, M Rokicka (60 (79) 18/42)
 Wroclaw, Lower Silesian Centre for Cellular Transplantation with National Bone Marrow Donor Registry, CIC 538, A Lange (37 (39) 20/17)
 Wroclaw, Medical Academy (hem), CIC 699, K Kuliczkowski (30 (30) 4/26)
 Wroclaw, University of Medicine (peds, hem, onco), CIC 817, A Chybicka (65 (69) 53/12)
Portugal (WB high income): (6 teams) (373 (424) 121/252)
 Coimbra, University Hospital, A Teixeira, I Costa (25 (25) 0/25)
 Lisbon, Instituto Portugues de Oncologia, CIC 300, M Abecasis (71 (81) 22/49)
 Lisbon, Hospital de Santa Maria, CIC 636, J Alves do Carmo, F de Lacerda (66 (76) 33/33)
 Lisbon, Hospital de St Antonio dos Capuchos, CIC 826, A Botelho de Sousa (47 (61) 0/47)
 Porto, Instituto Portugues de Oncologia, CIC 291, P Pimentel, F Campilho (129 (138) 66/63)
 Porto, Hospital S. Joao (hem, onco), CIC 329 plus CIC 572, JE Guimaraes, F Principe (35 (43) 0/35)
Romania (WB middle income): (4 teams) (100 (104) 24/76)
 Bucharest, Fundeni Clinical Institute (hem), CIC 427, D Colita, C Arion (59 (60) 14/45)
 Bucharest, Fundeni University Institute, 2nd department of Hematology, CIC 454, A Moicean (0 (0) 0/0)
 Targu-Mures, Sectia Clinica de Hematologie, CIC 178, I Benedek (36 (37) 0/36)*
 Timisoara, Emergency Childrens Hospital 'Louis Turcanu', III Ped. Clinic (hem/onco), CIC 174, M Serban, C Jinca (41 (44) 10/31)
Russia (WB middle income): (13 teams) (558 (614) 187/371)
 Ekaterinburg, Regional Hospital No. 1, TS Konstantinova, VA Shalaev (35 (39) 5/30)
 Moscow, Russian Children's Hospital (hem), CIC 694, A Maschan, E Skorobogato, E Pachanov (68 (73) 58/10)
 Moscow, Cancer Research Center, KN Melkova (36 (41) 6/30)
 Moscow, Burnasyan Federal Medical Biophysical Center (Institute of Biophysics), AA Davtyan, AE Baranov (23 (26) 0/23)
 Moscow, Cancer Research Center (peds, hem/onco), G Mentkevich (25 (25) 2/23)
 Moscow, Research Hematology Center of RAS, VG Savtchenko (42 (61) 15/27)
 Moscow, Main Military Clinical Hospital (hem), SV Shamansky, OA Rukavitsin (19 (20) 1/18)
 Moscow, Clinic of Hematology and Cellular Therapy Transplantation Unit, CIC 520, A Novik (92 (92) 3/89)
 Novosibirsk, Insitute of Clinical Immunology, CIC 376, I Lisukov (39 (39) 3/36)
 Samara, Regional Hospital, VA Rossiev (5 (5) 0/5)
 St Petersburg, Research Institute of Hematology, KM Abdulkadyrov (21 (23) 0/21)
 St Petersburg, State Pavlov Medical University (hem), CIC 725, BV Afanasiev, L Zubarovskaya (152 (169) 94/58)
 Yaroslavl, Regional Clinical Hospital (Hem), VA Lapin (1 (1) 0/1)
San Marino (WB high income): no report
Saudi Arabia (WB high income): (3 teams) (255 (265) 179/76)
 Riyadh, King Faisal Specialist Hospital and Research centre (onco, ads hem), CIC 397.1, M Al Jurf (144 (144) 79/65)
 Riyadh, King Faisal Specialist Hospital and Research centre (peds hem, onco), CIC 397.2, M Ayas (111 (121) 100/11)
 Riyadh, Armed Forces Hospital, CIC 818, A Alabdulaaly (no report)
Serbia (WB middle income): (4 teams) (104 (111) 21/83)
 Belgrade, Mother and Child Health Institute, CIC 358, D Vujic (15 (15) 3/12)
 Belgrade, Clinical Centre of Serbia (hem), CIC 373, J Bila, M Todorovic (23 (23) 0/23)

Belgrade, Military Medical Academy (hem), CIC 582, D Stamatovic (52 (59) 17/35)
 Novi Sad, Institute of Internal Diseases, Clinical Centre of Novi Sad (hem), CIC 655, S Popoviae (14 (14) 1/13)
Slovakia (WB high income): (5 teams) (154 (160) 42/112)
 Bansra Bystrica, Roosevelt Hospital (hem), CIC 333, I Markuljak, E Kralikova (16 (18) 0/16)
 Bratislava, National Cancer Institute, CIC 560, J Lakota (68 (68) 9/59)
 Bratislava, University Hospital (hem), CIC 610, M Mistrík (31 (34) 19/12)
 Bratislava, University Hospital, 2nd Children's Clinic, CIC 684, S Sufliarska, J Horáková, I Bodova (21 (22) 14/7)
 Kosice, University Hospital LF UP JS (hem), CIC 984, E Tothova (18 (18) 0/18)
Slovenia (WB high income): (1 team) (84 (98) 22/62)
 Ljubljana, University Medical Centre (hem), CIC 640, J Pretnar (84 (98) 22/62)
South Africa (WB middle income): (7 teams) (20 (20) 10/10)
 Bloemfontein, Faculty of Health Sciences Freestate University (hem), V Louw, C Barrett (3 (3) 0/3)
 Cape Town, Constantiaberg Medi Clinic (hem), CIC 772:1, P Jacobs, L Wood (17 (17) 10/7)
 Cape Town, Constantiaberg Medi Clinic, CIC 772:2, M du Toit (no report)
 Cape Town, UCT Medical School Faculty of Health Sciences (hem), CIC 512, N Novitzky (no report)
 Cape Town, UCT Groote Schuur Hospital (hem), N Novitzky, C du Toit, A McDonald (no report)
 Johannesburg, Donald Gordon Medical Centre, P Ruff (18 (18) 1/17)*
 Pretoria, Faerie Glen Hospital, J Thomson, D Brittain (no report)
Spain (WB high income): (71 teams) (2066 (2198) 743/1323)
 Alicante, Hospital General, C Rivas-Gonzales (19 (19) 0/19)
 Barcelona, Hospital Clinic (hem, onco), CIC 214, E Carreras (77 (87) 34/43)
 Barcelona, Santa Creu I Sant Pau (adults), CIC 260, J Sierra, S Brunet (79 (81) 40/39)
 Barcelona, Santa Creu I San Pau (peds), CIC 260, I Badell Serra, N Pardo, M Torrent (8 (8) 6/2)
 Barcelona, Hospital Vall d'Hebron, Materno Infantil, CIC 422, J Sanchez de Toledo Codina, C Diaz de Heredia, T Olivé, I Ebeza (35 (37) 28/7)
 Barcelona, Hospital General Vall d'Hebron, CIC 584, A Julia-Font, E Sanchez (23 (24) 11/12)
 Barcelona, Hospital Mutua de Terrasa (hem, onco), T Martí (13 (13) 0/13)
 Barcelona, Hospital Universitario Germans Trias i Pujol, CIC 613, J Ribera (61 (69) 24/37)
 Barcelona, Hospital Sant Joan de Deu, CIC 668, J Estella Aguado (4 (4) 0/4)
 Barcelona, Hospital Duran i Reynals (Hem), Institut Catala d'Oncologia, CIC 759, R Duarte Palomino, C Ferra, J Berlanga, A Fernández (44 (47) 16/28)
 Caceres, Hospital San Pedro de Alcantara, E Pardal, J Prieto (27 (28) 0/27)
 Cadiz, Hospital del SAS de Jerez (hem), CIC 612, S Garzon (36 (39) 6/30)
 Cadiz, Hospital Universitario 'Puerta del Mar' (hem), CIC 679, J Muñoz Muñoz (9 (9) 0/9)
 Canary Isles, Las Palmas, Hospital Insular (hem), CIC 335, J Gonzalez-San Miguel (18 (18) 0/18)
 Canary Isles, Las Palmas, Hospital Materno-Infantil (peds, hem, onco), J Lodos Rojas, A Molinés (0 (0) 0/0)
 Canary Isles, Las Palmas, Hospital Universitario de Gran Canaria 'Dr Negrin', CIC 537, T Molero, S Jiménez, C Campo, A Suárez, H Luzardo (30 (30) 14/16)
 Canary Isles, Tenerife, Hospital Universitario de Canarias, L Hernandez Nieto, MT Hernandez Garcia (20 (20) 0/20)
 Canary Isles, Tenerife, Hospital NS De la Candelaria, J Garcia-Talavera, J Breña, P Rios Rull (10 (10) 0/10)
 Castellon de La Plana, Hospital General de Castellon (hem), R Garcia-Boyer (9 (9) 0/9)
 Cordoba, Hospital Reina Sofia (hem), CIC 238, A Torres Gomez (59 (61) 30/29)

- Cruces-Barakaldo, Hospital de Cruces (hem), CIC 393, I Zuazua-Verde, F Floristan (38 (44) 0/38)
- Galdakao, Hospital de Galdakao, Hem, CIC 975, J Ojanguren, K Atutxa (15 (15) 0/15)
- Girona, Institut Català d'Oncologia, D Gallardo (4 (4) 0/4)
- Granada, Hospital Virgen de la Nieves (hem), CIC 559, M Jurado Checon (25 (28) 16/19)
- Jaen, Hospital Cuidad de Jaen (hem), A Alcalam (no report)
- La Coruña, Complejo Hospitalario Universitario La Coruña, CIC 361, FJ Batlle, C Ramirez, P Torres, R González-Rodríguez, R Varela (39 (43) 8/31)
- León, Hospital de León (hem), CIC 426, F Ramos, C Cecchini, N De las Heras, C Alvarez (4 (4) 0/4)
- Lérida, Hospital Arnau de Villanova, J Macia (9 (9) 0/9)
- Lugo, Hospital Xeral-Calde, M Gonzales-Lopez (19 (19) 0/19)
- Madrid, Hospital de la Princesa (hem), CIC 236, A Figuera, A Alegre (50 (54) 27/23)
- Madrid, Hospital Doce de Octubre (hem, ads), CIC 382, JJ Lahuerta, J De la Serna (52 (54) 10/42)
- Madrid, Hospital Ramon y Cajal (ads), CIC 615, J Garcia Larana J Lopez (39 (41) 9/30)
- Madrid, Hospital Ramon y Cajal (peds), CIC 615, A Munoz Villa (0 (0) 0/0)
- Madrid, Clinica Puerta de Hierro (hem), CIC 728, MN Fernandez, JR Cabrera Marin (34 (36) 20/14)
- Madrid, Hospital Nino Jesus (peds, onco), CIC 732, MA Diaz (39 (43) 28/11)
- Madrid, Hospital Universitario San Carlos (hem), CIC 733, J Diaz Mediavilla, L Llorente, R Martinez (13 (13) 0/13)
- 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, R Arrieta (66 (68) 23/43)
- Madrid, Hospital General Universitario Gregorio Marañón, Servicio de Hematología-UTMO (ads), CIC 819, JL Diez Martin, P Balsalobre, J Gayoso, D Serrano, I Buño, A Gomez-Pineda, C Muñoz (43 (45) 17/26)
- Madrid, Hospital Universitario Materno Infantil Gregorio Marañón (ped) C Belendez (2 (2) 0/2)
- Madrid, Clinica Moncloa (hem), JM Fernandez-Ranada, A Escudero (5 (5) 0/5)
- Madrid, Clinica Ruber, JM Fernandez-Ranada, A Escudero (0 (0) 0/0)
- Madrid, Hospital Quirou Madrid (hem, ads), JM Fernandez-Ranada, A Escudero (19 (20) 2/17)
- Madrid, Hospital Quirou Madrid (hem, ped), L Madero (3 (3) 0/3)
- Madrid, Hospital Universitario de Getafe (hem), F Oña Compan, N Somolinos (13 (13) 0/13)
- Madrid, Fundacion Jimenez Diaz (hem, onco), JLLopez-Lorenzo, F Lobo, M Callejas (3 (4) 0/3)
- Malaga, Carlos Haya Hospital (hem), CIC 576, M Gonzalez, M Pascual (64 (69) 31/33)
- Murcia, Hospital Univ. 'Virgen de la Arrixaca', CIC 323, JM Moraleda, A Morales-Lazaro, MJ Majado-Martinez (45 (51) 13/32)
- Murcia, Hospital Morales Meseguer, CIC 735, V Vicente-Garcia, I Heras (42 (47) 29/13)
- Orense, Hospital Cristal-Pinor (hem), J-L Sastre-Moral (21 (21) 0/21)
- Oviedo, Hospital Covadonga (hem), CIC 642, D Carrera Fernandez (75 (75) 22/53)
- Palma de Mallorca, Hospital Son Dureta (hem), CIC 722, J Besalduch, M Canaro (30 (32) 12/18)
- Palma de Mallorca, Hospital son Llatzer, CIC 110, J Bargay-Lleonart (16 (16) 0/16)
- Pamplona, Hospita de Navarra (hem), CIC 577, E Olavarria (36 (37) 12/24)
- Pamplona, Clinica Universitaria de Navarra, CIC 737, J Rifon (11 (11) 1/10)
- Pontevedra, Hospital Montecelo (hem), A-M Dios Loureiro (12 (12) 0/12)
- Salamanca, Hospital Clinico (hem), CIC 727, D Caballero (95 (100) 50/45)
- San Sebastian, Hospital Nostra Senora de Aranzazu, CIC 598, R Lasa, J Marin, D Martinez (40 (43) 17/23)
- Santander, Hospital Universitario M de Valdecilla (hem), CIC 242, A Iriondo, E Conde (70/73) 47/23)
- Santiago de Compostela, Hospital Xeral de Galicia (hem), CIC 570, JL Bello (22 (24) 9/13)
- Sevilla, Hospital Universitario Virgen del Rocío, CIC 769, I Espigadot (74 (78) 23/51)
- Tarragona, Hospital de Tarragona Joan XXIII (hem), A Llorente Cabrera (11 (11) 0/11)
- Valencia, Hospital Clinico Universitario (hem, onco), CIC 282, C Solano, C Arbona (57 (65) 22/35)
- Valencia, Hospital Infantil La Fe (peds, onco), CIC 653, V Castel, A Verdeguer, JM Fernandez (21 (26) 9/12)
- Valencia, Hospital Universitario La Fe (hem), CIC 663, MA Sanz, GF Sanz (102 (118) 54/48)
- Valencia, Hospital Doctor Peset (hem), P Ribas Garcia (6 (6) 0/6)
- Valencia, Instituto Valenciano de Oncologia (hem), I Picon (11 (11) 0/11)
- Valladolid, Hospital Rio Hortega, CIC 611, J Garcia Frade (20 (20) 0/20)
- Vigo, Complejo Hospitalario Universitario de Vigo (hem), CIC 421, C Albo-Lopez ((32 (34) 16/16)
- Vigo, Hospital Xeral-Cies, A Martinez-Dalmau (no report)
- Zaragoza, Clinico Universitario Lozano Blesa (hem, onco), CIC 531, M Gutierrez (12 (12) 0/12)
- Zaragoza, Hospital Miguel Servet (hem + onco), D Rubio-Félix, A Anton (26 (26) 7/19)
- Sweden** (WB high income): (8 teams) (566 (610) 222/344)
- Goteborg, CHECT (ads + peds), CIC 289, M Brune, A Fasth (107 (116) 39/68)
- Linköping, University Hospital (hem), CIC 740, C Malm (56 (59) 17/39)
- Lund, University Hospital (hem), CIC 283, S Lenhoff (78 (89) 36/42)
- Malmö, University Hospital, T Ahlgren (5 (7) 0/5)
- Örebro, University Hospital (hem, onco), CIC 738, U Tidefelt (26 (27) 0/26)
- Stockholm (Huddinge), Karolinska University Hospital (hem, onco), CIC 212, P Ljungman (146 (152) 75/71)
- Umea, Norrland University Hospital, CIC 731, A Wahlin, V Lazarevic, J Lindh, B Markevärn (52 (56) 20/32)
- Uppsala, University Hospital (ads + peds), CIC 266, G Oberg (96 (104) 35/61)
- Switzerland** (WB high income): (9 teams) (422 (483) 143/279)
- Aarau, Kantonsspital (hem, onco), CIC 316, M Wernli, M Bargetzi (22 (28) 0/22)
- Basel, Kantonsspital (hem, onco), CIC 202, A Gratwohl, D Heim, J Halter, T Kühne (76 (85) 49/27)
- Bellinzona, Ospedale San Giovanni (hem, onco), CIC 829, F Cavalli, M Ghielmini, L Leoncini (9 (10) 0/9)
- Bern, Inselspital (ads, peds, hem, onco), CIC 221, K Leibundgut, M Fey, T Pabst, D Baerlocher (54 (67) 0/54)
- Geneva, Hôpital Cantonal Universitaire (hem, onco), CIC 261, J Passweg, C Helg, Y Chalandon, H Ozsahin, M Ansari (44 (47) 44/0)
- Lausanne, CHUV (hem, onco), CIC 820, M Duchosal, A Rosselet, S Leyvraz, N Ketterer (80 (89) 0/80)
- St Gallen (hem, onco), Kantonsspital, CIC 324, U Hess (22 (26) 0/22)
- Zurich, University Hospital (ads, hem, onco), CIC 208, U Schanz, G Stüssi, C Renner (92 (107) 32/60)
- Zurich, University Hospital (peds, hem, onco), CIC 334, R Seger, T Güngör (23 (24) 18/5)
- Tunisia** (WB low income): (1 team) (112 (116) 53/59)
- Tunis, Centre National de Greffe de Moelle Osseuse, CIC 183, B Othman-Tarck (112 (116) 53/59)
- Turkey** (WB middle income): (29 teams) (1098 (1150) 500/598)
- Ankara-Sihhiye, Hacettepe University (hem), CIC 168, H Goker, O Ozebe, I Haznedaroglu, S Dundar (27 (27) 17/10)
- Ankara-Besevler, Gazi University (hem), CIC 169, G Sucak (78 (86) 32/46)
- Ankara, Hacettepe University, Institute of Oncology, CIC 292, E Kansu, E Özdemir (no report)
- Ankara-Etlik, GATA BMT Center, CIC 372, F Arpacı, A Özet, C Beyan, A Ural (60 (61) 20/40)
- Ankara, Ihsan Dogramaci Childrens Hospital, CIC 399, A Tuncer, D Uckan (22 (23) 22/0)
- Ankara, University School of Medicine (hem), CIC 617, G Gürman, MArat (105 (114) 49/56)
- Ankara, University of Ankara (peds), CIC 620, E Unal (24 (29) 23/1)
- Ankara, Numune Education and Research Hospital, CIC 691, G Özet (33 (35) 7/26)
- Ankara, Bayinder Hospital (hem), CIC 412, S Dincer (27 (31) 14/13)

Ankara, Ankara Oncology Research and Education Hospital, CIC 423, F Altuntas (50 (52) 18/32)
 Antalya, Akdeniz University Hospital (peds), CIC 618, MA Yesilipek, V Hazar, A Kupesiz (57 (59) 53/4)
 Antalya, Akdeniz University Hospital (hem), CIC 685, L Undar (27 (27) 10/17)
 Antalya, Medical Park Hospitals (hem, onco), CIC 919, Y Koc (57 (60) 20/37)
 Aydin, Adnan Menderes University Medical Faculty (hem), CIC 187, Z Bolaman (6 (6) 0/6)
 Balcali (Adana), Cukurova University Hospital (peds, onco), CIC 821:1, A Tanyeli (9 (9) 9/0)
 Balcali (Adana), Cukurova University Hospital (ads, onco), CIC 821:2, B Sahin (4 (4) 0/4)
 Eskisehir, Osmangazi University, CIC 686, Z Gülbas (49 (52) 13/36)
 Gaziantep, University Medical School, CIC 402, M Pehlivan (12 (12) 0/12)
 Istanbul, Marmara University (hem), Altunizade, CIC 714, T Akoglu, M Bayik (27 (27) 11/16)
 Istanbul, University of Istanbul, CIC 760, D Sargin, S Kalayoglu-Besik (37 (39) 17/20)
 Istanbul, Cerrahpasa Medical School, CIC 761, B Ferhanoglu, T Soysal, M Cem Ar (10 (10) 2/8)
 Istanbul, University of Istanbul Pediatric BMT Unit (peds, hem, onco), CIC 400, G Ozturk, S Anak (8 (9) 6/2)
 Istanbul, Yeditepe University Hospital (hem), CIC 416, S Karti (12 (12) 1/11)
 Izmir, Ege University Medical Faculty (peds), CIC 621, S Kansoy (30 (30) 26/4)
 Izmir, Ege University Medical Faculty (ads, hem, onco), CIC 628 + 368, S Cagirgan, F Buyukkececi, M Töbü, G Saydam (84 (88) 13/71)
 Izmir, Dokuz Eylul University (onco), CIC 688, H Özsan (36 (36) 9/27)
 Kayseri, Erciyes University Hospital (hem, onco), CIC 627, A Unal, M Cetin (140 (142) 77/63)
 Trabzon, Karadeniz Technical University (hem), CIC 170, M Sonmez (22 (22) 10/12)
 Yuregir Adana, Baskent University Hospital (hem), CIC 589, H Ozdogu, C Boga, S Asma, S Yuce (45 (48) 21/24)
Ukraine (WB low income): (2 teams) (31 (31) 0/31)
 Kiev, Kiev City BMT Center, CIC 176, E Karamanesht, V Khomenko, I Korenkova, S Borodkin ((31 (31) 0/31)
 Kiev, Kiev Regional Oncologic Hospital (peds, hem, onco), CIC 177, S Donska, O Ryzhak (no report)
United Kingdom (WB high income): (53 teams) (2789 (3025) 1186/1603)
 Aberdeen, The Royal Infirmary (hem), CIC 344, DJ Culligan (18 (23) 2/16)
 Bangor, Gwynedd Hospital (hem, onco), CIC 736, D Edwards (14 (16) 0/14)
 Bath, Royal United Hospital (hem), CIC 619, C Knechtli (8 (8) 0/8)
 Belfast, Belfast City Hospital (hem), CIC 268, F Jones, MF McMullin, TCM Morris, P Abram (48 (50) 8/40)
 Birmingham, Heartlands Hospital (hem), CIC 284, DW Milligan (48 (55) 24/24)
 Birmingham, Queen Elizabeth Hospital (hem), CIC 387, C Craddock, P Mahendra (132 (142) 74/58)
 Birmingham, The Birmingham Childrens Hospital (hem), CIC 781, S Lawson (20 (20) 15/5)
 Blackpool, Victoria Hospital, CIC 832, MP Macheta (16 (17) 1/15)
 Bournemouth, Royal Bournemouth Hospital (hem), Poole Hospital, Dorset Cancer Centre and Salisbury District Hospital, CIC 765, S Killick, J Cullis (24 (24) 0/24)
 Bristol, Royal Hospital for Children (allo, ads, peds) + Avon Haematology Unit (auto), CIC 386, JM Cornish, S Robinson (116 (126) 74/42)
 Cambridge, Addenbrooke's Hospital (hem), CIC 566, C Crawley, RE Marcus, J Craig, H Balsdon, T Chapman (73 (77) 28/45)
 Cardiff, University Hospital of Wales (hem), CIC 303, KMO Wilson, AK Burnett, JA Whittaker, CH Poynton (70 (74) 29/41)
 Cheltenham, Cheltenham General Hospital, CIC 398, E Blundell (10 (10) 0/10)

Coventry, University Hospital and Warwickshire NHS Trust, Dr Bakhari (25 (26) 0/25)
 Dudley, The Dudley Group of Hospitals NHS Trust (hem), CIC 405, S Fernandes (13 (13) 0/13)
 Dundee, Ninewells Hospital (hem), CIC 719, D Meiklejohn (10 (10) 0/10)
 Edinburgh, Western General Hospital (hem) CIC 228, PRE Johnson, J Davies, F Scott, PH Roddie, P Shepherd (43 (47) 6/37)
 Exeter, Royal Devon and Exeter Hospital (hem), CIC 571, C Rudin (9 (9) 0/9)
 Glasgow, Royal Infirmary and the Western Infirmary, CIC 244, IG McQuaker, A Parker, T Fitzsimons (122 (129) 50/72)
 Glasgow, Royal Hospital for Sick Children (hem), CIC 707, B Gibson (25 (27) 20/5)
 Ipswich, The Ipswich Hospital NHS Trust (hem), CIC 128, N Dodd, D Admokum (5 (5) 0/5)
 Leeds, St James's University Hospital, The General Infirmary, Pinderfields Hospital, CIC 254, M Gilleece, S Kinsey, MC Galvin (128 (133) 40/88)
 Leicester, Royal Infirmary (hem), CIC 713, AE Hunter (74 (76) 29/45)
 Liverpool, Royal Liverpool University Hospital (hem), CIC 501, RE Clark, A Pettitt (54 (63) 20/34)
 Liverpool, Alder Hay, CIC 773, M Caswell (11 (12) 7/4)
 London, Hammersmith Hospitals NHS Trust, CIC 205, J Apperley, E Olavarria, E Kanfer, A Rahemtulla, R Szydlo (96 (123) 34/62)
 London, Royal Free Hospital (hem), CIC 216, S Mackinnon (65 (73) 36/29)
 London, Royal Marsden Hospital (hem), CIC 218, M Potter (172 (186) 84/88)
 London, University College Hospital (hem), CIC 224, K Thomson (138 (142) 60/78)
 London, Great Ormond Street Hospital, CIC 243, P Veys (60 (71) 52/8)
 London, The London Clinic (hem), CIC 263, M Potter, P Gravett (18 (22) 7/11)
 London, St George's Hospital (hem), CIC 539, EC Gordon-Smith, M Koh (28 (29) 12/16)
 London, Guy's Hospital (hem), CIC 721, M Kazmi (41 (48) 20/21)
 London, King's College (hem), CIC 763, A Pagliuca (155 (166) 88/67)
 London, St Bartholomew's, CIC 768 and the Royal London Hospital, J Gribben, J Cavenagh, S Agrawal, T Lister (102 (113) 44/58)
 London, St Mary's Hospital, CIC 866, J de La Fuente, JD Cavenagh, S Agrawal, T Lister (21 (21) 21/0)
 London, Parkside Hospital, CIC 450, R Powles (9 (11) 0/9)
 Manchester, Royal Children's Hospital, CIC 521, R Wynn (21 (22) 20/1)
 Manchester, The Royal Infirmary, CIC 601, JA Yin (64 (72) 37/27)
 Manchester, Christie Hospital (hem), CIC 780, A Bloor (79 (88) 28/51)
 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 (126 (137) 60/66)
 Norwich, Norfolk and Norwich Hospital (hem), CIC 391, M Lawes, G Turner (23 (24) 0/23)
 Nottingham, City Hospital, CIC 717, N Russell, JL Byrne, AP Haynes, A McMillan (138 (149) 54/84)
 Oxford, John Radcliffe Hospital (hem, onco), Headington and Wycombe General, CIC 255, A Peniket, TJ Littlewood, C Mitchell, C Hatton (83 (88) 31/52)
 Plymouth, Derriford Hospital, CIC 823, MD Hamon (39 (42) 7/32)
 Salisbury NHS Ffoundation Trust, CIC 757, J Cullis (4 (5) 0/4)
 Sheffield, Sheffield Teaching Hospitals NHS Foundation Trust CIC 778/1, J Snowden, and Sheffield Children's Hospital NHS Foundation Trust, CIC 778/2, A Vora (86 (92) 36/50)
 Somerset, Taunton and Somerset Hospital, S Bolam, SA Johnson (11 (13) 0/11)
 Southampton, CRC Wessex, CIC 704, K Orchard, A Duncombe, J Kohler (74 (75) 28/46)
 Stoke-on-Trent, University Hospital of North Staffordshire (hem), CIC 394, R Chasty (10 (11) 0/10)
 Swansea, Singleton Hospital, CIC5 54, S Al Ismail (5 (5) 0/5)
 Swindon, Great Western Hospital (Hem), CIC 608, NE Blesing, A Gray, S Green, A Koster (5 (5) 0/5)
 November 2010
 * = Late reports not included in the analysis.

Supplementary Information accompanies the paper on Bone Marrow Transplantation website (<http://www.nature.com/bmt>)