

## National Descriptive Blood and Marrow Study: Transplants Performed in U.S. During 2002

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### Abstract

*A multi-phase approach was used to develop accurate estimates of blood and marrow transplants performed in the U.S. during 2002. The project consisted of a survey of 93 active blood and marrow transplant centers, detailed data from the patient records of a random sample of 140 transplant patients (contributed by 85 transplant physicians) and data from the Blood and Marrow Transplant Information Network (data from 1997 – 2001). According to the project model, a total of 23,058 blood and marrow transplants and peripheral blood stem cell mobilizations were performed during 2002, distributed as follows: 9,327 peripheral blood stem cell transplants, 3,502 bone marrow transplants, 1,551 nonmyeloablative and cord blood transplants, and 8,678 peripheral blood stem cell mobilizations. About 9 out of 20 blood or marrow transplants were allogeneic transplants.*

Hematopoietic stem cell transplantation (HSCT) has increased dramatically during the years since the first allogeneic bone marrow transplants were performed in humans in 1968.<sup>1</sup> During the intervening years, several organizations have developed mechanisms for tracking and evaluating HSCTs, including the International Bone Marrow Transplant Registry<sup>2</sup>, the Autologous Blood and Marrow Transplant Registry<sup>2</sup>, and the Blood & Marrow Transplant Information Network.<sup>3</sup> Each of these and other available sources provide valuable data; however, each registry has a missing data problem because some blood and marrow transplant centers do not provide data to the requesting registry. Further, different transplant registries have different data focuses. For example, the Blood & Marrow Transplant Information Network (maintains a registry for U.S.) does not differentiate between bone marrow transplants and peripheral blood stem cell transplants. Further, no information on peripheral blood stem cell mobilizations is collected.

### Purpose of Study

A major purpose of the study reported here was to determine the volume of blood and marrow transplants and mobilizations in the United States for 2002.

### Methodology

Data for the statistical model used to estimate the volume of blood and marrow transplants and mobilizations were obtained from three sources. First, a survey of blood and marrow transplant centers was conducted to obtain data on the number of blood and marrow transplants and mobilizations performed at the respective centers during 2002. Ninety-three of the 202

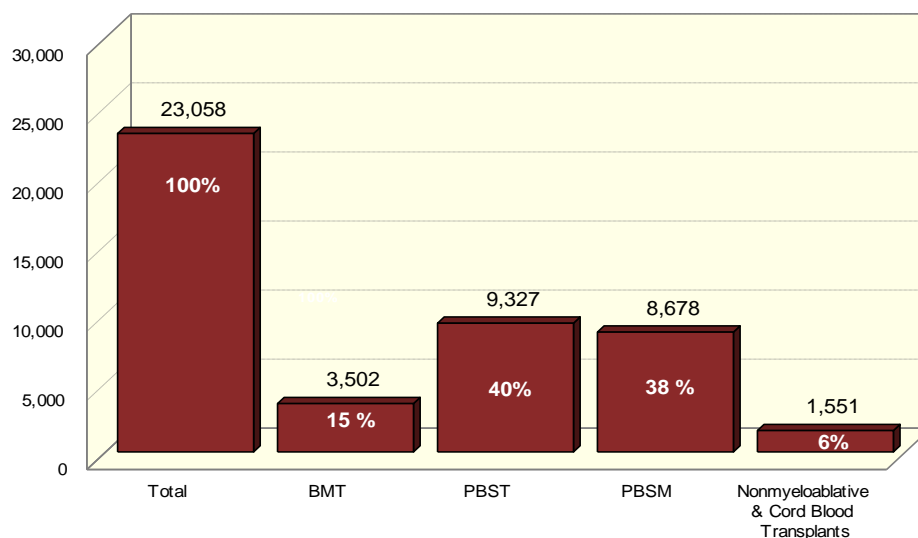
active centers participated in the study. Second, a random sample of 85 blood and marrow transplant physicians provided estimates of the number of blood and marrow transplants and mobilizations that they personally provided during the previous three months. These physicians also provided detailed information from the records of 140 patients who had received a blood or marrow transplant and/or a peripheral blood stem cell mobilization. Up to seven follow-up contacts were made with initial non-responding transplant physicians to enhance study participation. The third set of data inputs was provided by the Blood & Marrow Transplant Information Network database for 1997 – 2001. Information from the transplant center and transplant physician surveys was used to complete missing data in the database for 2001. Trend information from the blood and marrow network database was used to supplement survey data in the statistical model.

### Findings of Study

According to the project statistical model, a total of 23,058 blood and marrow transplants and peripheral blood stem mobilizations were performed during 2002. As indicated in the following figure, there were 9,327 peripheral blood stem cell transplants (PBSTs), 3,502 bone marrow transplants (BMTs), 1,551 nonmyeloablative and cord blood transplants, and 8,678 peripheral blood stem cell mobilizations performed in 2002.

PBSTs outnumbered BMTs by more than 2 1/2 to 1. More than 1,500 of the blood and marrow transplants were either cord blood transplants or nonmyeloablative transplants. About 9 out of 20 blood or marrow transplants (44%) were allogeneic transplants.

## Estimated Number of Blood and Marrow Transplants & Mobilizations in 2002\*



\* Based on data from 93 surveyed blood and marrow transplant centers in 2002.

## References

1. Horowitz, M. IBMTR/ABMTR Newsletter, Vol. 9, Issue 1, February 9, 2002. 1.
2. The International Bone Marrow Transplant Registry and Autologous Blood and Marrow Transplant Registry Home Page.  
<http://www.cibmtr.org/>
3. Blood & Marrow Transplant Information Network Home Page.  
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## About the Authors

**Thomas Orsagh, Ph.D.**, is an internationally recognized economist who has made numerous scientific contributions during and after his distinguished academic career. Dr. Orsagh attended the Wharton School and obtained a Ph.D. from the University of Pennsylvania. Dr. Orsagh has served on the faculties of the University of Pennsylvania, Lehigh University, the University of Karlsruhe in Germany, and the University of North Carolina in Chapel Hill. He was a Fulbright Research Scholar, a former editor of the **Southern Economics Journal**, and a former member of a national Presidential Task Force.

**Jack R. Gallagher, Ed.D.**, is a behavioral modeling scientist with more than 25 years of experience in medical and systems research. He is a former member of the University of Virginia School of Medicine faculty and directed a five-university research consortium. Dr. Gallagher has published many scientific papers, presented at numerous national and international conferences, and has served on the editorial review boards of two national journals. Dr. Gallagher also is author of the book **Changing Behavior: How and Why**.