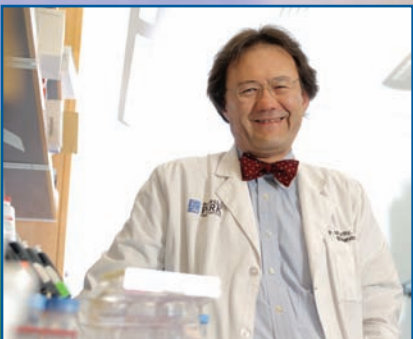


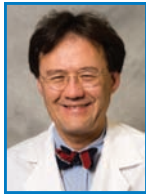


NEWS FROM Roswell Park's
BLOOD AND MARROW
TRANSPLANT PROGRAM



THE BLOOD AND MARROW TRANSPLANT TEAM

Our multidisciplinary approach to care



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The Blood and Marrow Transplant (BMT) program at Roswell Park Cancer Institute (RPCI) brings together a multidisciplinary team of specialists in transplant, radiation, surgery, infectious disease, dental oncology, cardiology, pulmonary, renal and gastrointestinal medicine plus nutrition and psychosocial support. Our BMT team also includes an epidemiologist to monitor BMT patient outcomes and oversee a dedicated BMT database. This allows the program to make adjustments in clinical treatment and services to optimize patient care.

The team reviews every aspect of a patient's treatment before, during and after transplant. Team members meet regularly to review patient progress. Treatment and care protocols are in place during every step of the transplant process, ensuring consistency of care. The team includes:

- Transplant physicians
- Midlevel practitioners
- Transplant unit nurses
- Transplant coordinators
- Dieticians
- Clinical pharmacists
- Psychiatrists/ Psychologists
- Medical Social workers
- Nurse case managers
- Physical and occupational therapists
- Respiratory therapists
- Dentists
- Financial counselors
- Clergy and pastoral caregivers
- Patient advocates

Refer A PATIENT

Fortifying existing partnerships with the community physicians who entrust their patients to RPCI is an on-going focus.

When you suspect or diagnose cancer in your patient, you want the best treatment and care available for that patient. At RPCI, we believe in a multidisciplinary team approach to care. As your patient's primary physician, you remain a valuable part of this team. We will work closely with you and keep you informed of your patient's care and progress. After your patient's treatment is completed, he or she returns to your care, and we will continue to provide assistance as needed.

With even a suspicion of cancer, your patient can call us and one of our referral professionals will walk him or her through the referral process, answer questions and set up an appointment with the cancer care specialist best suited to discuss his or her care.

Patients may be referred by a physician or may seek consultation and treatment themselves. The Patient Referral Office is open Monday through Friday, 8am to 5pm.



Chris Mann
Patient Access Coordinator
(716) 845-4717



THE Blood AND Marrow Transplant PROGRAM (BMT)

The BMT Program performs approximately 100 to 120 blood and marrow transplants each year, treating patients with hematologic disorders including acute and chronic leukemias, aplastic anemia, Hodgkin and non-Hodgkin lymphoma, multiple myeloma, myelodysplastic syndrome and selected solid tumors.

RPCI's BMT Program was designed for patient safety and comfort. The entire unit and its 14 private patient rooms are High Efficiency Particulate Free Air (HEPA)-filtered to maintain the highest protection against airborne pathogens. The nursing staff is specially trained in the management and care of immune-compromised BMT patients who have special care needs. Outstanding care leads to improved patient outcomes and survival. A dedicated outpatient BMT clinic is located on the ground floor of the main clinical care building. RPCI's BMT Program offers a wide range of transplant-related services including:

- Autologous (self-donated) transplantation utilizing peripheral blood and bone marrow as a hematopoietic stem cell source.
- Allogeneic (requiring a related or unrelated donor) transplantation utilizing peripheral blood, bone marrow or cord blood.
- Reduced intensity and non-myeloablative transplant
- Case management
- Quality assurance program
- On-site blood and marrow collection and processing in a dedicated apheresis unit and a dedicated hematopoietic stem cell processing laboratory
- a clinical epidemiologist to monitor BMT patient outcomes and oversee the BMT database.
- Ongoing evaluation and monitoring from time of presentation through the entire continuum of care related to the transplant.

Giving the Patient Every Advantage

Early Referral Is Essential



Timing is critical to the success of a transplant. Unfortunately, for an estimated 15% of patients evaluated by the BMT team at RPCI, referral comes too late. Early referral is essential because:

- When a referral for BMT is considered only as a last resort, the patient's disease may have progressed to the point where a transplant will no longer be successful.
- It may take several weeks to obtain approval for BMT coverage from the patient's insurance company.
- Identifying a donor or allogeneic transplants may take a very long time.
- Preparing a patient for transplant takes time.

For these reasons, the mortality rate for BMT patients increases significantly when referral is delayed.

If there is any possibility that a transplant will be required in the future, the referral process must begin as soon as the patient receives a diagnosis of a disease for which BMT might be beneficial. With early referral, the patient is evaluated and undergoes the preliminary steps for a transplant, and, in the case of an allogeneic transplant, the search begins for a compatible donor. In this way, a transplant can proceed quickly if disease-specific therapy should fail.

RELEVANT DISEASES

A blood or marrow transplant may benefit patients with the following diseases:

Malignant Hematologic Disorders:

- Acute Lymphoid (ALL) and Myeloid Leukemias (AML)
- Chronic Lymphoid (CLL) and Myeloid Leukemias (CML)
- Non-Hodgkin Lymphoma (NHL)
- Hodgkin Lymphoma
- Multiple Myeloma (MM)
- Amyloidosis
- Myelodysplastic Syndromes (MDS)

Non-Malignant Hematologic Disorders:

- Aplastic Anemia/Bone Marrow Failure States
- Immunodeficiency Disorders
- Sickle Cell Disease

Solid Tumors:

- Ewing Sarcoma
- Neuroblastoma
- Testicular Cancer
- Primitive Neuroectodermal Tumors

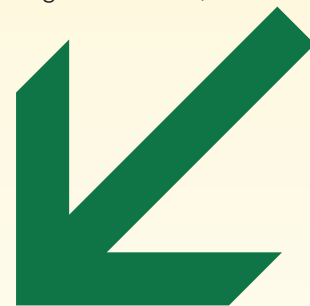
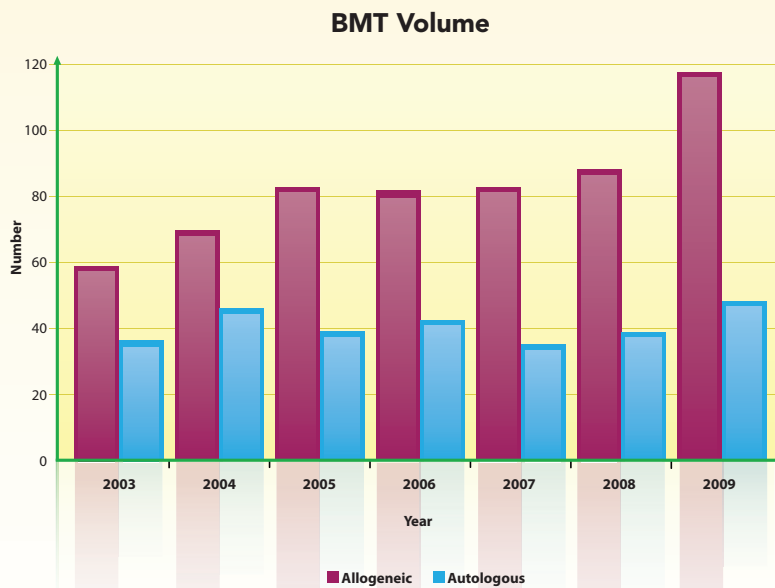
PATIENT CHARACTERISTICS

To be eligible for a blood or marrow transplant, a patient must:

- Be in acceptable health, apart from the disease for which BMT is recommended
- Be between the ages of 4 and 75
- Be highly motivated
- Have someone at home who is educated about the BMT process and committed to caring for the patient on a long-term basis, as recovery can take a year or more

RPCI is a high-volume center

Since 1991, the BMT Program has performed more than 1,600 transplants for more than 1,420 patients. In the last two years (2009-11), 220 transplants were performed, including 87 autologous, 48 related donor and 84 unrelated donor (including 3 cord blood) allogeneic transplants.



From Quality, 2011



NEW HOPE THROUGH RESEARCH

Our status as a research institution also means that patients have access to promising new treatments that might be unavailable at other institutions, such as:

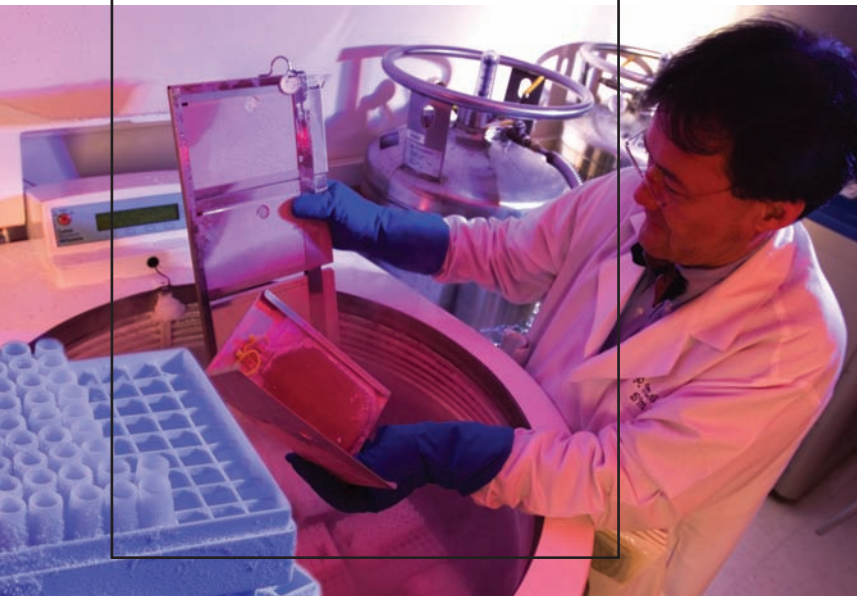
- Novel therapeutic agents
- Nonmyeloablative—reduced intensity—transplants, which make it possible to extend the maximum age for BMT to 75 years.
- Novel transplant conditioning regimens
- Transplants from unrelated donors of cord blood or adult blood and marrow
- Novel approaches for predicting and controlling transplant complications, including regimen-related toxicity and graft vs. host disease (GVHD)
- Access to national cooperative-group clinical research studies that provide unique cancer treatments for BMT patients who have acute leukemia, lymphoma, multiple myeloma, Hodgkin lymphoma and selected solid tumors

RPCI's BMT Program was established in 1991 and emphasizes clinical study development including investigator-initiated as well as cooperative group trials. Most patients receive transplants on a clinical research study. The program continues to emphasize excellence in clinical care and patient outcomes.

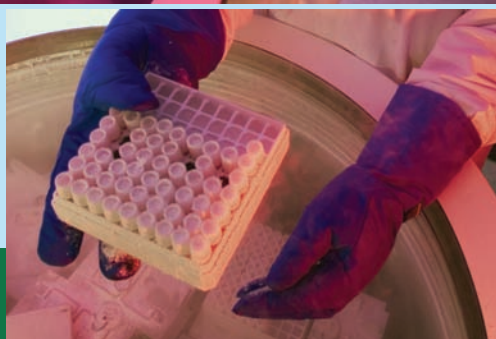
Patients considered for BMT and for tissue typing for potential BMT are reviewed by the RPCI Transplant Service on a weekly basis. Patients must be able to be safely treated on specific treatment protocols. Thus, patients are evaluated for organ function to select the appropriate treatment regimen that will ensure the best outcomes. The RPCI Lymphoma/Myeloma and the Leukemia and Myeloma Programs have novel therapeutic studies that interface with the BMT Program. This ensures the appropriate and timely referral of patients for BMT.

RPCI's BMT Program is an active participant in the Alliance for Clinical Trials in Oncology Foundation (ACTION, formerly CALGB) transplant committee which has opened several BMT studies for:

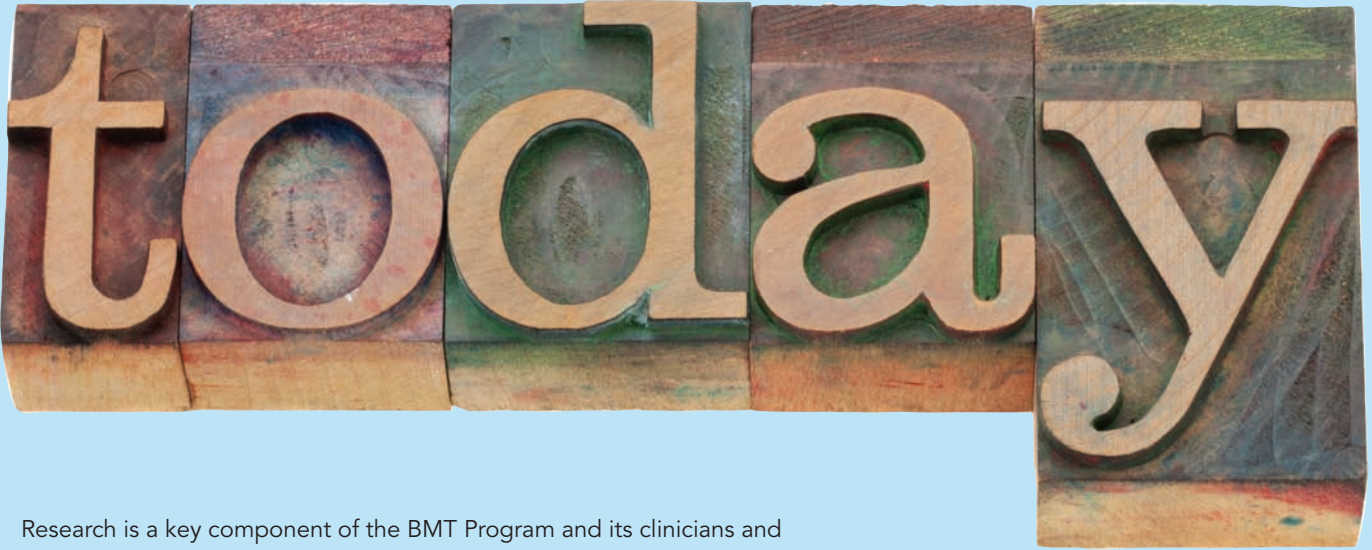
- allogeneic transplant after failed autologous transplant
- non-myeloablative allogeneic transplant for older AML patients and MDS patients as well as for high risk CLL
- autologous transplant for AML
- autologous transplant for Philadelphia chromosome positive lymphoblastic leukemia (ALL)



In addition, RPCI's BMT Program participates as a core member of the Blood and Marrow Transplant Clinical Trials Network (BMT-CTN) and has opened transplant protocols for MM and AML. The BMT Program accrues patient samples for studies on identifying risk factors for patient outcome. Our Program is leading a multi-institutional research initiative to identify risk factors for outcome in unrelated donor BMT and a correlative science protocol to determine if flow cytometric analysis will predict outcome in MM patients undergoing autologous BMT. RPCI has opened new protocols for the treatment of chronic graft-versus-host disease, a complication of allogeneic BMT.

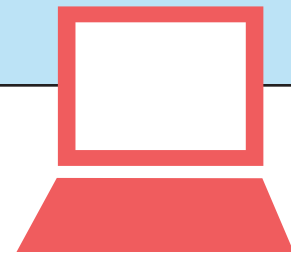


TOMORROW'S TREATMENTS



Research is a key component of the BMT Program and its clinicians and researchers are actively working to discover new treatments and techniques to enhance patient outcomes and quality of life. The search for effective cancer treatments, however, begins in the laboratory. At RPCI, several investigators are currently exploring new and innovative avenues involving BMT research. Some of their work includes:

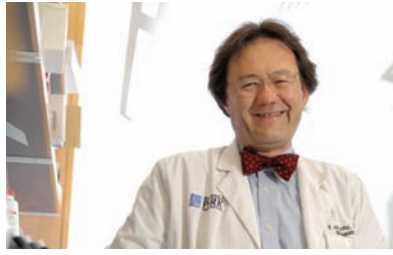
- HLA histocompatibility antigens and patient outcomes
- Development of a mouse model of blood and marrow transplantation for testing new agents to improve BMT outcomes
- Flow cytometry measurement of immune reconstitution following transplant
- Development of novel transplant treatment regimens



DOCUMENTING THE DATA

RPCI's BMT Program boasts a comprehensive database, which has collected critical data on more than 1,600 transplants. The database helps the team to better manage long-term care for transplant survivors and enhances development of new clinical research. Some of the studies involve:

- Identifying risk factors for acute graft vs. host disease (GVHD)
- Long-term effects of transplant such as osteoporosis, dental problems, secondary malignancies and cardiopulmonary disease
- Pain management and palliative care issues



Stepping UP the Support

MEETING ALL THE NEEDS OF PATIENTS AND FAMILIES

While delivering the finest medical care, the BMT Program also provides a network of support services to address the psychological and spiritual needs of the patient and family. These services include counseling, support groups, programs to improve the patient's quality of life, resources to address the family's financial concerns, and assistance to help patients deal effectively with treatment. Services include:

- **CANCER PAIN MANAGEMENT SERVICE (CPMS)**

Drawing on the expertise of physicians, anesthesiologists, nurses, physical and occupational therapists, psychologists and social workers, the CPMS team designs an individualized pain management plan for each patient. Options include both medical and invasive procedures, biofeedback, relaxation training, and physical therapy. RPCI adheres to the high standards for pain management set forth in National Comprehensive Cancer Network (NCCN) protocols.

- **BMT CAREGIVER ORIENTATION**

Patients and their caregivers learn about all aspects of the transplant, including post-transplant medical needs, coping with emotional, physical, and sexual issues, finances, spirituality, and problems caregivers may encounter while caring for the patient. The patient and family will also receive a personalized care manual to assist during the transplant experience. These orientation sessions are conducted in the hospital for patients and their families, about five times per month or as need arises.



• **SUPPORT GROUPS**

The BMT Program puts patients in touch with patient support groups, and families in touch with caregiver groups. The team provides meeting dates, times, and locations for these groups. BMT patients may wish to join the Blood and Marrow Transplant Wellness Group, whose members include pre-, current, and post-transplant patients, their families and other caregivers. The program is coordinated through our Social Work and Case Management Department; call 716-845-8022. For further information, patients and their families can also contact the Leukemia & Lymphoma Society at www.lls.org.

• **COMMUNITY CANCER RESOURCE CENTER (CCRC)**

The CCRC helps patients, their families and the general public locate, evaluate and interpret cancer-related articles, web sites and other materials. The CCRC maintains a lending library of DVDs, audio books and CDs, as well as a laptop lending program for inpatients, complete with web cam capabilities for visual communication using the WiFi connection available in all patient rooms. It also offers yoga and meditation classes, the "Look Good...Feel Better" program and a boutique of wigs, scarves, and hats for patients. The center is open Monday-Friday, from 9 am-5 pm. Call 716-845-8659 for more information.



Social Work and Case Management



A diagnosis of a serious illness affects both patient and family. Along with worries about the patient's health come concerns about finances, the day-to-day running of the household and the logistical problems of making travel arrangements for patients from out of town. These concerns are especially significant for the BMT patient, who will remain in the hospital for several weeks after transplant. Financial counselors and Medicaid advocates are available to help sort through the details of insurance coverage, including coverage for participation in clinical research studies.

RPCI's social workers and case managers work with third-party payers to secure authorization for transplant, and serve as the patient's advocate if coverage is denied. They also assist with approvals for patients from foreign countries. RPCI does not deny services to the uninsured. The Social Work and Case Management Program helps relieve some of the stress with direct assistance or through referrals to other agencies.

Call RPCI's Social Work and Case Management Department directly at

716-845-8022

LIFE

RPCI's BMT Program is one of very few with an annual clinic for long-term care recommendations. The clinic monitors a patient's health to identify chronic problems that can occur after a transplant. Complications may include premature osteoporosis, dental problems, cataracts, thyroid changes, infertility, lack of engraftment, difficulties from steroid use, skin changes, mouth sores, nausea or vomiting, diarrhea, alopecia, relapse or secondary malignancy. The long-term clinic provides specialty referrals for gastrointestinal, renal, pulmonary and dermatologic problems.

LONG FOLLOW-UP



A team of physicians, dentists, physical therapists, dietitians, pharmacists, nurse practitioners, nurses, and social workers provide:

- Clinical advice for the unique complications that can follow BMT
- Specialty referrals for gastrointestinal, renal, pulmonary, dermatologic, and other issues
- Monitoring for BMT-related dental problems, and recommendations for long-term dental care
- Monitoring of patients receiving glucocorticoid therapy, who are at high risk for premature osteoporosis
- Tracking of re-immunizations for patients who have undergone allogeneic BMT

LONG-TERM CLINIC

The clinic at RPCI is open to all patients who received a transplant, regardless of whether it was performed at RPCI. While it is expected that all patients will continue to see their primary care physicians and referring oncologists for general care, patients are encouraged to visit our long-term care clinic once a year. Throughout every aspect of the BMT process, our BMT program continues to provide the patient's physicians with updates on BMT-related aspects of their patient's health.

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Designated
as an Alliance for
Clinical Trials in
Oncology (ACTION),
formerly the Cancer and
Leukemia Group B
(CALGB) transplant
Center



RPCI's Blood and Marrow Transplant Program holds these distinctions

Member,



National
Comprehensive
Cancer
Network



Certified by the
Foundation for the
Accreditation of
Cellular Therapy
(FACT)



BMT Center physicians
are members of:

American Society of Blood & Marrow
Transplantation (ASBMT)

American Society of Hematology (ASH)

American Society of Clinical Oncology
(ASCO)

American Association for
Cancer Research (AACR)



Core member,
Blood and Marrow
Transplant Clinical
Trials Network
(BMT-CTN) of the
National Institutes of
Health