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## Blood and Marrow Transplant (BMT) Program

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Norris Cotton Cancer Center

# Welcome

On behalf of the members of the Blood and Marrow Transplant Team, we offer you a warm welcome. We are pleased to share information about our program. Dartmouth-Hitchcock Norris Cotton Cancer Center is one of the leading cancer centers in the country. Established in 1984, we are recognized by the National Cancer Institute (NCI) as a national leader in cancer treatment, research, and education. Our ranking—as a Comprehensive Cancer Center—is the highest honor available to cancer centers in America.

- **Kenneth Meehan, MD**  
Director of the Blood & Marrow Transplantation

## Why this booklet is for you

This booklet can help you to learn more about our Blood and Marrow Transplant program.

In this guide, we will explain:

- How we work together as a team with you and your family
- What makes Norris Cotton Cancer Center special
- What to expect
- The role of your family
- The role of your primary care provider or regular doctor
- Where to go for more information

Your specific needs are important to us. Let us know what else we can do for you. We always have the time to talk.

Call (603) 650-4628 for a free DVD on our Blood and Marrow Transplant Program.

## In this booklet

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# Our beliefs and values

You and your health are the top concerns of the Blood and Marrow Transplant (BMT) program at Dartmouth-Hitchcock Norris Cotton Cancer Center.

## We pledge to provide you with:

- Information on treatment options and side effects
- Input on your treatment plan
- Scientifically proven safe and effective treatments
- Privacy and comfort
- Time, attention, and respect

As the patient, you are our focus. You will never feel lost, forgotten, or overlooked. We encourage patient involvement. Ask questions. Tell us how you are doing. Let us know how we can help.







Christopher Lowrey, MD,  
researches new cancer  
treatments in his laboratory

## Dartmouth-Hitchcock Medical Center, the best of both worlds

Norris Cotton Cancer Center has its headquarters at Dartmouth-Hitchcock Medical Center (DHMC), the teaching and research hospital of The Geisel School of Medicine at Dartmouth. DHMC provides advanced care for complicated conditions, like cancer, for people living throughout New England, New York, and beyond. It's a large, modern hospital in a spacious, serene setting.

We attract physicians and researchers from all over the world. You will see the best and brightest minds in their fields. We offer the latest scientific advances in care in a quiet, scenic countryside. There are no traffic jams, parking problems, and sirens of the city.

As researchers we look to improve things. Dartmouth is on the leading edge of creating patient-centered experiences. Our work helps change the practice of medicine all over the world. We are proud to champion this change.

**You can be confident in choosing Dartmouth-Hitchcock Norris Cotton Cancer Center. We integrate the knowledge, principles, and thinking that are changing health care for the better:**

- Dartmouth opened the first Center for Shared Decision Making in the country in 1999. It offers patients information and support about health care choices.
- The Dartmouth Atlas studies how people use health services. We want the right people to get the right care at the right time.
- The Dartmouth Institute looks at health care through patients' eyes. Our findings may help keep people out of the hospital by improving their overall health.
- The Dartmouth Center for Health Care Delivery Science brings a scientific, systematic approach to the delivery of health care to improve quality and reduce costs.

## A beautiful place to heal

Surrounded by rolling hills, shady walking paths, and soothing brooks, Norris Cotton Cancer Center is a place you can rest, relax, and recover.

During treatment, you may live at home if your doctor thinks it is best. Those who live farther away sometimes stay in a hotel near the Cancer Center. We also have private rooms in the hospital. These have soft beds, TVs, DVD/CD players, and wireless Internet access (Wi-Fi). In warm weather, each room has a hummingbird feeder at the window.

## Putting patients and families first

There are a lot of ways to describe what Dartmouth is doing such as, *walking the talk* or *actions speak louder than words*. We don't want you to read this booklet without knowing how seriously we take our pledge and how deeply we invest in fulfilling our promise to you.

Dartmouth is transforming health care—taking a leading role in this country and around the world—in changing health services. We want fewer people to suffer from preventable illnesses. We want more people to enjoy longer, happier lives. We want patients and families to have choice, power, and ownership of their medical care. And we want to make sure that every patient's care has been scientifically proven effective.



## How is my family involved in my transplant?

Your family can be as involved as you would like. We welcome family participation in the initial consults and any future appointments. It can be helpful to have a family member present to take notes or ask questions.

### While you are in the hospital, your family can:

- Visit and stay in your hospital room
- Relax in our common areas
- Share meals
- Go for walks
- Enjoy a bench in the Garden of Hope
- Visit our food court, hair salon, or gift shop
- Play games, cards, or watch a movie
- Have a hot beverage in an outdoor café or our food court
- Admire an art exhibit
- Attend a prayer service in our chapel
- Listen to live music
- Plan a trip at our travel agency
- Browse the Internet, books, and magazines in our libraries

We also have special services for family members. We take extra good care of caregivers. Your family members can enjoy many free services like massages, meditation, and support groups.

As you get ready to leave the hospital, your doctor and nurses will show your family members how to carefully care for your needs at home.



## How your primary care provider works with us

We respect the relationship you have with your primary care provider and your referring specialist. Your doctors will be key members of our team. We will talk or write to your doctors regularly. We will give your doctors treatment information and test results. Our cancer doctors will communicate with your doctors as we map out and adjust your treatment plan.

## A team of blood and marrow transplant experts working for you

Our team brings together many health care professionals to assist with your care. We are dedicated to your healing and comfort. We work so closely with you and your family that we all begin to feel like family.

### Your treatment team

- Physicians
- Nurse practitioners
- Nurse coordinators
- Transplant-trained nurses
- Infectious disease specialists
- Pharmacists
- Dietitians
- Discharge planning nurses
- Clinical laboratory specialists
- Transfusion medicine specialists
- Rehabilitation therapists
- Research and clinical trial specialists
- Social workers
- Insurance/financial coordinator

Each of our specialists will work with you one-on-one. But we also meet as a team four times a week to discuss your care. The whole team reviews your progress. We look at you as a whole person in your recovery. We consider your emotional, social, and physical conditions. Each specialist brings different information to create the whole picture of your treatment plan.

**Pictured Below:** All of the specialists in the Blood and Marrow Program review patients' tests and treatments together so that the perspective of each clinical discipline is considered.



# What days will be like in the hospital

You will have choices of how to spend time while in the hospital. We have an energizing activities program. There are also restaurants, shopping, and libraries to explore. Our ample grounds offer walking paths and gardens for outdoor enjoyment.

**Each day has a routine. Your day can be adapted to your needs. An average daily routine includes:**

## Medical Care

- Monitoring of vital signs and weight
- Lab tests
- Tracking of fluid intake and output
- Management of any chemo side effects, such as nausea, headache, or diarrhea

## Self-care

- Caring for your teeth, mouth, and gums. Rinsing with salt water four times a day
- Taking daily showers. Skin checks for sores or rashes. Regular moisturizer use

## Clothing

You will be provided a hospital gown, pajama bottoms, and a robe. We encourage you to bring and wear your own comfortable clothes. Don't forget eyeglasses, slippers, or socks from home. Also consider bringing a pair of sneakers for walking around.

## Visitors

Immediate family members may visit at any time, and even stay the night in your room. We may, however, limit the number of visitors in your room at a time. Others can wait in the sunroom, cafeteria, or library. You will need a lot of rest. Visitors should be careful not to stay too long so you don't get tired.



**To protect you from infection, we take special precautions:**

- Visitors must wash their hands before entering your room
- No sick visitors
- No visitor use of your bathroom or shower
- No diaper-changing in your room

## Activity

- Exercise. Riding an exercise bike. Walking
- Deep breathing exercises
- Leisure time such as puzzles, playing cards, needlework
- Reading, writing, or computer use (Wi-Fi is available in each room)
- Telephone calls to/from your room. Cell phones are permitted in the transplant unit
- Sending and receiving mail

# What steps are involved in having a blood and marrow transplant?

The first thing to understand is that there are two different types of transplants. Your physician will recommend the best type of transplant for you, depending on your disease and treatment goals.

- **An Autologous Transplant** is when you donate and receive back your own cells.
- **An Allogeneic Transplant** is when you receive stem cells from another person. A stem cell donor may be your brother, sister, or even someone unrelated. Your donor needs to have similar tissue typing to you.

## 1) Initial consult

You will visit the Norris Cotton Cancer Center to meet with members of your treatment team, including the physician, nurse practitioner, and nurse coordinator. We encourage you to ask a lot of questions. We want to make sure BMT is your best treatment option.



John Hill Jr., MD, Director of the Allogeneic Transplant Program

## 2) Patient evaluation

This step may involve chemotherapy and an evaluation of how your cancer is responding to therapy. At this point we may also do lab work and test your heart and lungs to ensure it is safe for you to move forward to transplant.

## 3) Collection of cells

Stem cells can be gathered from two different sources. If you are undergoing an autologous transplant, we will collect your cells. If you are undergoing an allogeneic transplant, we will collect cells from a donor. (See chart below).

Stem Cell Source	Method	Explanation
Peripheral Blood Stem Cells	Apheresis	The donor will sit in a chair with a needle in each arm. Blood flows from the first arm into a machine that filters out stem cells. The filtered blood flows back into the body through the needle in the other arm. The donor may take medication to prepare for this.
Bone Marrow	Bone Marrow Harvest	The donor will be asleep in an operating room. A doctor will insert a needle into both sides of the hip bone and collect bone marrow in a syringe.

Depending on the type of transplant you are having, the collected cells are either infused soon after collection or frozen and stored until the time of your transplant.

## 4) The transplant

First, we give you a treatment regimen that may consist of high-dose or low-dose chemotherapy and/or radiation therapy.

Next, we give you the stem cells collected earlier. They will be infused through a central venous catheter. Once in your blood stream, the transplanted cells make their way into the bone marrow. Here they will make new blood cells. Until you grow a lot of new blood cells, your body may have trouble fighting off illnesses. A transplant weakens your body's natural defenses (called your immune system).

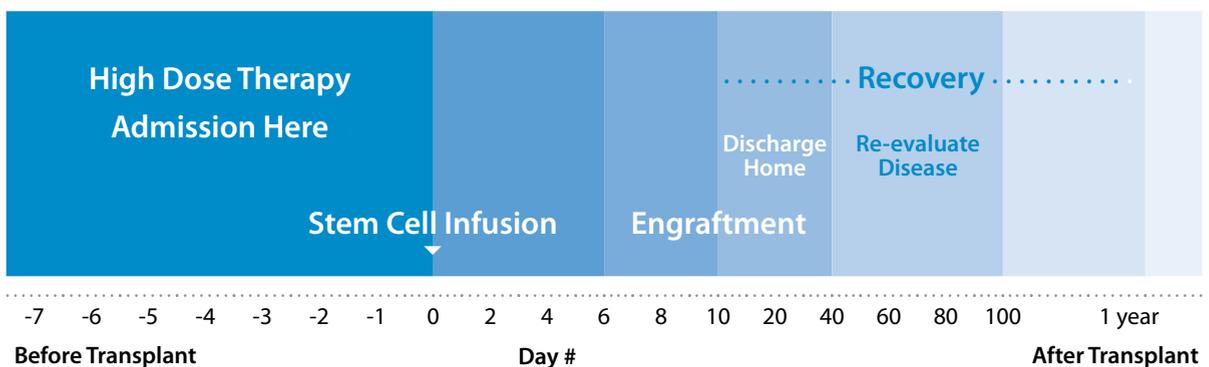
## 5) Post-transplant

During your post-transplant visits, we evaluate your response to the treatment and monitor your health status. Generally, evaluations are done at the following times after the transplant:

- 100 days
- 6 months
- 1 year
- 18 months
- Annually after 18 months



This diagram reflects a general overview of the transplant process:





## Recovering from a blood and marrow transplant

Norris Cotton Cancer Center offers special services to help you find strength, balance, and relaxation. Our groups and classes—just for cancer patients and their family members—help reduce pain, stress, and worry. Many patients find them energizing. We believe they make it easier to handle a tough situation. We encourage you to try as many special services as you can during your visits:

- Harp music
- Tai Chi
- Reiki
- Chair massage
- Meditation
- Painting
- Wellness classes
- Yoga
- Creative writing
- Problem-solving and support groups
- Art exhibits
- Lending library with helpful books, DVDs, and videos

## Paying for a blood and marrow transplant

It is never easy for anyone to afford blood cancer treatments. Even those with good health plans may feel burdened by costs. We will help you understand what is covered under your health insurance plan. If portions of treatment are not covered, we have a financial assistance counselor and social worker who can help you to create a plan to address costs. Dartmouth-Hitchcock Medical Center offers flexible payment options and financial assistance to those in need. Our financial assistance counselors do everything possible to make the BMT program affordable, regardless of ability to pay.

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### Taking the next step

You may still have questions about us. Here are some of the ways you can learn more about the Norris Cotton Cancer Center's Blood and Marrow Transplant program.

- Visit us. Ask your regular doctor to schedule a consult for you at Norris Cotton Cancer Center.
- View a Blood and Marrow Transplant patient video at our website at **[cancer.dartmouth.edu/bmt](http://cancer.dartmouth.edu/bmt)**
- Call us at **(603) 650-4628** for more information.

# What we hear from Norris Cotton Cancer Center transplant patients

“ It’s always a pleasant time to see my doctor and nurse practitioner. They have been like no other team. They talk to me about how things are going, then they allow me to talk to them about anything that I may have to say. They saved my life.”

“ I spend much time at DHMC, but each time I go I know that I’m having the best care possible, in a pleasant environment, with a great staff and the most competent doctors. Care is unbelievable!!!”

“ My doctor is very compassionate, caring, and respects me as an intelligent person who wants to take an active role in my treatment. I also appreciate his ongoing contacts, as needed, with my primary physician. Great support! Much appreciated! He is fantastic!”

“ My doctor is the absolute most caring, wonderful doctor I have ever had to deal with. I hope he never leaves your staff.”

“ The nurse practitioner is truly wonderful! Her personality and knowledge, confidence, really made me at ease and very comfortable. In fact, she made me feel like I was talking to a good friend.”

“ My oncologist showed a genuine interest in my illness, was extremely easy to talk to, very pleasant and knowledgeable. I was recently diagnosed with CLL. Obviously, I was very concerned and ‘scared.’ Your staff helped me to relax and took many of my concerns and worries away—I still have CLL, however, I am not as scared now. You guys are excellent!”



## BLOOD AND MARROW TRANSPLANT (BMT) PROGRAM

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[cancer.dartmouth.edu/bmt](http://cancer.dartmouth.edu/bmt)



## Expertise you can trust

 A Comprehensive Cancer  
Center Designated by the  
National Cancer Institute

One of 41 NCI-Designated Comprehensive Cancer Centers, the highest federal certification available for a cancer center.



Voluntarily accredited by the Foundation for the Accreditation of Cellular Therapy, the leading international organization that certifies quality care for cellular therapy programs that collect, process or administer cells isolated from bone marrow, including autologous or allogeneic transplants, with a rigorous review process based on the highest standards of care.



As a participating center with the CIBMTR (Center for International Blood and Marrow Transplant Research), we collect, submit and evaluate data on our transplant recipients to advance hematopoietic cell transplantation and cellular therapy research to improve transplant outcomes.



We are the only National Marrow Donor Program® (NMDP) transplant center in northern New England, and we are well-known as a specialized center for transplants from unrelated donors. Our Program is also an accredited collection center for the National Marrow Donor Program, which operates Be The Match®.



The Alliance for Clinical Trials in Oncology represents the merger of three legacy cooperative groups: American College of Surgeons Oncology Group (ACOSOG), Cancer and Leukemia Group B (CALGB), and North Central Cancer Treatment Group (NCCTG).



(RITN) One of just 31 programs in the country organized by the federal government as a Radiation Injury Transplant Network.



Accredited by The Joint Commission. Dartmouth-Hitchcock Medical Center has earned The Joint Commission's Gold Seal of Approval.



The teaching and research hospital of The Geisel School of Medicine at Dartmouth



Magnet designation by the American Nurses Credentialing Center. This places DHMC in a select group of less than three percent of hospitals nationally who achieve this distinction. Magnet designation has become the gold standard for excellence in the field of nursing.