RIPPLE EFFECT
Cord blood transplants, immunotherapy build on BMT’s foundation

SECOND CHANCE
Jenna Gibson, 12, owes her life to a cord blood transplant

DECADES OF CHANGE
BMT has evolved dramatically in 40 years; one man has seen it all

BECAUSE OF ONE LIFE, MILLIONS WERE CHANGED
Dr. E. Donnell Thomas pioneered bone marrow transplantation. His work continues to shape the future of cancer care.
Dr. Fred Appelbaum recounts 40 years of difficult and exhilarating advances in bone marrow transplantation.

BY MARY ENGEL / 4

Bone marrow transplants and beyond

Developed to treat leukemia, blood stem cell transplants gave rise to a universe of new therapies for an ever-growing number of patients and conditions.

BY DR. RACHEL TOMPA / 14

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Dr. E. Donnall Thomas pioneered BMT at Fred Hutch. Photo by Susie Fitzhugh / Fred Hutch

FEATURE
One life, a world of possibilities

Each life saved since Dr. E. Donnall Thomas pioneered bone marrow transplantation decades ago offers untold promise. Meet Savanna Acosta, a toddler who now has a full life ahead of her thanks to a transplant.

Photo by Bo Jungmeyer / Fred Hutch

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Dr. Fred Appelbaum recounts 40 years of difficult and exhilarating advances in bone marrow transplantation. Photo by Robert Hood / Fred Hutch

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Bone marrow transplants and beyond

Developed to treat leukemia, blood stem cell transplants gave rise to a universe of new therapies for an ever-growing number of patients and conditions.

BY DR. RACHEL TOMPA / 14

Coming home

Nearly 200 bone marrow / stem cell transplant survivors returned to Fred Hutchinson Cancer Research Center July 24-25, 2015, for the seventh Bone Marrow Transplant Survivor Reunion. Many of their donors, families and caregivers also attended the poignant gathering, held every five years. The survivors, shown below, were transplanted between five and 42 years ago. Photo by Robert Hood / Fred Hutch

BY DR. E. DONNALL THOMAS / 16
Celebrating our transplant legacy, our patients’ courage

This is a truly amazing time for cancer research at Fred Hutch. This is, after all, the place where blood stem cell transplantation was pioneered, giving researchers the first clear insights into the potential of the immune system to cure cancer.

This issue of our newly renamed Hutch Magazine looks back on this legacy. In the 40 years since Fred Hutch officially opened its doors on Sept. 5, 1975, work by Dr. Don Thomas and others in curing leukemia through transplantation has led directly to many other advances, including today’s breathtaking progress in immunotherapy — harnessing the power of our own immune system to treat cancer. We believe these innovations will lead to cures for many cancers, including solid tumors, not in another 40 years but perhaps much sooner.

I wish Don were here to see all the excitement around these new modalities. He would not only be excited himself, he would be helping us ride the crest of the wave.

You’ll read in these pages about the people who were here to help celebrate — all those who attended our seventh BMT Survivor Reunion in July. The reunion honors the courage of our transplant recipients and their families, who provide such incredible support. It also celebrates the wonderful job Fred Hutch does building on Don’s legacy.

But mostly, the reunion is for the patients, for them to spend time with people who know, like no one else, what they went through, what it’s like to face death and emerge with new life.

For me, and for all who participate, the reunion is an emotional event — seeing patients celebrating with their donors, even while remembering the very difficult times. We also remember with sadness those who didn’t survive despite heroic efforts. And we think of those who may not survive long enough to benefit from the newest lifesaving medicines in development.

The reunion reminds us that it is the people — those who have survived cancer and those who haven’t — who send us back to our labs with renewed motivation and a real sense of urgency. Hearing their stories reminds us of what we’re all working toward.

That’s why I’m glad we’ve started Share Your Story, where patients, caregivers and researchers can talk about why what we do matters. You can see some of these stories in Hutch Magazine and more at fredhutch.org/MyStory and at our new campus visitor center that will open in September. We invite you to share your own story, to become part of this exciting, extraordinary moment as we work together toward cancer cures.

Dr. Gary Gilliland
President and Director
Dr. Fred Appelbaum recounts 40 years of difficult and exhilarating advances in bone marrow transplantation

‘The successes kept you going’

By Mary Engel

Dr. Fred Appelbaum was a medical student in 1970 when he stumbled upon Dr. E. Donnall Thomas’ initial description of bone marrow transplantation in a medical journal. He was transfixed. “I thought it was so cool that this was even possible,” said Appelbaum, now deputy director and executive vice president of Fred Hutchinson Cancer Research Center. In 1978, he leapt at the chance to work alongside Thomas at Fred Hutch, helping to refine the pioneering technique that transformed leukemia and related cancers, once thought incurable, into treatable diseases of different diseases, and researchers at Fred Hutch continue to build on that work to find innovative new treatments. Recently, Appelbaum sat down to talk about 40 years of transplants at Fred Hutch, from the early, heart-wrenching challenges to the latest innovations in immunotherapy, which harnesses the body’s own immune system to fight cancer.

Can you tell us about the early days of transplantation?

DR. FRED APPELBAN: In the early- to mid-1970s, the first patients being transplanted were patients whose life expectancy was measured in weeks to months. These end-stage patients were already very sick, they had very advanced leukemia, and so the cure rates were very low, in the range of 15 percent. That meant that eight or nine out of 10 patients would not be cured. That was really, really hard. But we had some patients who went into remission — there was no leukemia there. And they came back [to the Hutch] six months, they came back again in a year, and they came back at two years. On my God, this patient was really cured. That was incredibly exhilarating and it was brought back literally from the jaws of death.

How did you stay optimistic when so many patients didn’t survive?

It was hard because you failed so many times in a row, but the successes just pumped you up and kept you going. And of course Dan Thomas was just a giant of a man in both his personality and his vision, and having a leader like that was absolutely instrumental.

How did advances in controlling nausea, infections and pain help?

You might think of an algorithm — a medicine that keeps you from thinking — as trivial. But the drugs we were using were so nauseating and the vomiting was so severe that people would aspire some of the vomitus and bring it back into their lungs, which would set them up for pneumonias. Just a thing that seems a minor advance really made a huge difference in the quality of people to tolerate the transplant procedure. Also [Dr.] Robert Hickman [a founding member of the Hutch transplant team] figured out a way to place catheters so you could give intravenous nutrition throughout the procedure. People would lose so much weight until Bob figured out a way to allow us to give those fluids through a central vein. All these things added up to much better supportive care that allowed people to get through this very difficult procedure.

What has changed in terms of how you screen stem cell donors?

Before 1980, the only people who could donate were essentially brothers and sisters who matched. Only about a third of the population has a matched sibling. Then we did the first matched unrelated transplant for a patient with leukemia in the late 1970s. Today there are over 21 million individuals worldwide who have been HLA-typed [human leukocyte antigens used for determining a match] to serve as unrelated donors.

Tell us about the first unrelated transplant.

A 10-year-old girl, Laura Graves, had acute lymphoblastic leukemia and had already failed first-line chemotherapy. Her dad was [Dr. Robert] Graves [from Fort Collins, Colorado]. Bob had done enough reading that he knew that Laura’s HLA type was a common one. He came here and said, “You know, I’ll bet you could find a donor for my daughter.” [There were no matches within the family.]

And behold, one of our technicians matched Laura Graves. So we then talked to the Institutional Review Board, and everyone said to go ahead. We did the transplant. Laura went into complete remission and did very well for about two years. Unfortunately, her leukemia came back, and she did eventually die. But the transplant itself, the nuts and bolts of the transplant, actually went very, very well.

Bob Graves realized that HLA typing is so variable that you’d need a really large registry if you’re going to make this more generally available. So he developed the Laura Graves Foundation to help support development of such a registry. And eventually, Bob Graves and Dan Thomas met Admiral Elmo R. Zumwalt Jr., whose son came here for a transplant. Elm got help funding for the National Marrow Donor Program [now called Be The Match] that provides all these unrelated donors.

How was transplantation lead to today’s advances in immunotherapy?

When you do a transplant, you’re putting a new immune system into the patient, and this new immune system from the donor can see the leukemia cells as being foreign and reject them. And then our task became, OK, can we, in fact, identify the cells that are doing that and can we augment that effect? One of the problems with transplantation is that, yes, the new immune system can come in and see the leukemia and get rid of it. But that new immune system also could react against other tissues in the patient’s body. When that happens it is called graft-vs.-host disease. Our task over the last 30 years has been to try and separate the graft-vs.-leukemia effect from the graft-vs.-host effect. The trick in doing that is to find targets that are expressed by the leukemic cells but not by other tissues in the body.

The second thing you have to do is find cells from the donor that can see those targets and react against them. We can find some of them but oftentimes there are too few or they react too weakly or they survive for too short a period of time. So now we’re able to take cells from the donor and genetically manipulate them to specifically see that target on the leukemic cell. And we can expand them into large numbers and watch as they go back into the patient, see the leukemia, react against it, kill the leukemic cells and watch those patients go into remission or stay in remission and potentially be cured.

Of course there’s no reason you can’t take [these T cells] from the patients themselves [instead of from donors]. So you can get rid of the whole idea of the transplant now and do these so-called adoptive immunotherapies, where we’re taking out those T cells from the patient and giving them back to the patient, eradicating their leukemia. These are still clinical trials. We have a long way to go, but it is really incredibly exciting. Impressively, we also have data that we’re doing may not be restricted to leukemia and lymphoma, that we may be able to do this in the common solid tumors — including diseases like breast cancer and lung cancer and melanoma — and even the deadliest of the diseases like pancreatic cancer. If that happens, then the legacy of transplantation will be absolutely astounding.
THE NUMBERS ARE SO VAST, the hope and healing they embody seem difficult to grasp. Globally, doctors have performed more than 1 million bone marrow / stem cell transplants — a procedure pioneered at Fred Hutchinson Cancer Research Center. A national marrow donor registry inspired by a Fred Hutch patient has facilitated more than 68,000 transplants. And, since 1975, more than 14,000 people have received transplants at the Hutch. Yet to truly fathom the depth of all those lives restored, sometimes it requires one patient’s story: Savanna Acosta was going to die. But she didn’t.
**SHARE YOUR STORY**

Nearly 200 transplant survivors attended the seventh Fred Hutch Bone Marrow Transplant Survivor Reunion at Fred Hutch. Every survivor has an incredible story. Here are just a few.

**“Don’t imagine being anywhere else” [than Fred Hutch]… It’s a very therapeutic. Just opening the window and catching the breeze or hearing the seagulls… It’s very Zen-like; it’s so very healing environment. The little things helped me turn the corner and have hope to move forward with my life.”

Tamisha King, Houston, Transplant: 1994

**“I do feel my [blood cancer] diagnosis gave me a new lease on life. I can do things that I couldn’t imagine being anywhere else” [than Fred Hutch]… It’s a very therapeutic. Just opening the window and catching the breeze or hearing the seagulls… It’s very Zen-like; it’s so very healing environment. The little things helped me turn the corner and have hope to move forward with my life.”

Tami Smith, Spokane, Wash., Transplant: 1996

**In some ways, I’m almost glad I had the cancer. It’s easy for me to say that because had I not, I wouldn’t be here today. It was a very good outcome, but because of what I’ve gone through, I appreciate and enjoy things so much more now than I otherwise would have.”


**“In ways, I’m almost glad I had the cancer. It’s easy for me to say that because had I not, I wouldn’t be here today. It was a very good outcome, but because of what I’ve gone through, I appreciate and enjoy things so much more now than I otherwise would have.”

Jay Feinberg, Beaverton, Ore., Transplant: 1995

Read more at fredhutch.org/MyStory

**THE NOTION OF A BONE MARROW REGISTRY**

In North America grew out of that first successful universtiy transplant, performed at Fred Hutch in 1979.

Lauree Graves’ family was so inspired by the potential of unrelated transplants that it led an effort to launch a donor database. That list grew into the National Marrow Donor Program’s Be The Match, which has managed the largest marrow registry in the world, spanning nearly 12.5 million potential donors, the organization states.

The early discoveries about bone marrow transplants, pioneered by Hutch scientists, provided the first definitive evidence that the immune system could fight cancer — that a healthy donor’s stem cells could cure a transplant recipient of blood cancer. Researchers also discovered that non-cancerous diseases, like SCID, could be cured.

Those gains helped spark the modern age of immunotherapy — a family of cancer treatments that harnesses the disease-fighting power of a patient’s own immune system, said Dr. Gary Gilliland, Fred Hutch’s president and director.

“We are on the threshold of amazing advances in the treatment of cancer,” Gilliland said.

**SAVANNA WAS TRANSPLANTED ON JAN. 20, 2014.**

**“My baby had cancer”**

Savanna was transplanted on Jan. 20, 2014. She was 6 weeks old.

**“Savanna was transplanted on Jan. 20, 2014.”**

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Bone marrow and blood stem cell transplantation is one of the greatest success stories in cancer care. Pioneered at Fred Hutch by Dr. E. Donnell Thomas, who won the 1990 Nobel Prize in physiology or medicine for his work, and steadily refined by Hutch teams over four decades, the treatment has transformed survival rates for some leukemias and other blood disorders from zero to upwards of 90 percent. For patients with certain diseases, it remains the only therapy available with the potential to cure.

Steps in the transplant process

1. **Preparation**
   - Doctors conduct a thorough exam to confirm the best type of transplant.
   - **Autologous transplant** Patients serve as their own stem cell donor. Most commonly used for patients with lymphomas.
   - **Allogeneic transplant** Someone other than the patient donates stem cells. Most commonly used for patients with leukemias, blood disorders like aplastic anemia and immunodeficiencies.

2. **Stem Cell Collection**
   - Blood stem cells are collected from one of three sources:
     - **Circulating, or peripheral, blood:** Donors get an injection to make — and release into the blood — more stem cells. A few days later, an apheresis machine siphons 12 ounces of stem cells from the donor’s vein and returns the rest to the donor through another vein.
     - **Bone marrow:** 1-2 quarts of marrow, which the baby replaces in a month, are drawn out of the pelvic bones with a needle.
     - **Umbilical cord blood:** About 5 teaspoons of stem cells are collected from an umbilical cord after a baby is born. The cells are then frozen for future use.

3. **Pre-Transplant Conditioning**
   - The patient’s body is prepared to receive the new cells. A Hickman catheter — developed at Fred Hutch by Dr. Robert Hickman — is surgically implanted to administer drugs and take blood samples without repeated needle sticks.
   - Over the course of a week, patients receive high doses of chemotherapy, total body irradiation or both to eliminate as much of the cancer (or other disease-causing cells) as possible and reduce the chances an allogeneic transplant will be rejected. This preparative regimen leaves patients highly vulnerable to infections.
   - Some patients undergo regimens of reduced intensity. Pioneered by Fred Hutch’s Dr. Rainer Storb, these regimens use lower doses of chemotherapy and radiation that aren’t toxic. They have extended transplantation to patients who are older or have additional medical complications.

4. **Engraftment**
   - Engraftment is when the donated cells (the graft) take root in the bone marrow and begin to make healthy new red blood cells, white blood cells and platelets. It can take 10 days to several weeks and eventually changes the patient’s blood type to that of his or her donor.

5. **Stem Cell Infusion**
   - A few days after conditioning, patients receive stem cells intravenously, which then flow through the bloodstream and settle in the marrow. The infusion can last several minutes to several hours depending on the volume of cells delivered.

6. **Recovery**
   - For the next 100 days, patients get daily or weekly check-ups to track their progress and monitor for infections and other complications. It can take a year or more for blood counts to normalize and the new immune system to work well.

**Bone Marrow Transplant Ins and Outs**

**Bone marrow and blood stem cell transplantation**

- **Bone marrow and blood stem cell transplantation** is one of the greatest success stories in cancer care.
- **Autologous transplant** Patients serve as their own stem cell donor. Most commonly used for patients with lymphomas.
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**Transplant’s Yin and Yang**

- **Autologous transplant**
  - Patients serve as their own stem cell donor. Most commonly used for patients with lymphomas.
  - Uses bone marrow and blood stem cells.
  - Conditioning: Used for patients with lymphomas.
  - Engraftment: Uses a Hickman catheter.
  - Recovery: Requires daily to weekly check-ups.

- **Allogeneic transplant**
  - Someone other than the patient donates stem cells. Most commonly used for patients with leukemias, blood disorders like aplastic anemia and immunodeficiencies.
  - Preparation: Uses an apheresis machine to siphon blood stem cells.
  - Engraftment: Uses a Hickman catheter.
  - Recovery: Requires daily to weekly check-ups.

**Steps in the transplant process**

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   - For the next 100 days, patients get daily or weekly check-ups to track their progress and monitor for infections and other complications. It can take a year or more for blood counts to normalize and the new immune system to work well.
Grateful survivors gather at BMT reunion

NEARLY 200 FORMER PATIENTS attended the seventh Bone Marrow Transplant Survivor Reunion at Fred Hutch on July 24-25, 2015. Transplant recipients and their donors, families and caregivers shared stories, heard presentations about new advances in treatment, saw labs where groundbreaking research is taking place and celebrated with a reception at Seattle’s Museum of History & Industry. “This weekend is to honor all of you,” said Dr. Fred Appelbaum, Fred Hutch deputy director and executive vice president.

TOP: Bina Sugumar, a research tech in the Susan Parkhurst Lab, shows fruit flies to Bone Marrow Transplant Reunion attendees on July 24 at Fred Hutch. Photo by Bo Jungmayer / Fred Hutch

BOTTOM RIGHT: Jessica Horton, right, reads her daughter Molly’s “I am grateful for” card. Linda Horton, Jessica’s mother and Molly’s grandmother, looks over her shoulder. Molly, 13, is a seven-year BMT survivor. The Hortons are from Gig Harbor, Wash. Photo by Robert Hood / Fred Hutch

BOTTOM LEFT: Molly Horton’s “grateful” card. Photo by Robert Hood / Fred Hutch

NEARLY 200 FORMER PATIENTS attended the seventh Bone Marrow Transplant Survivor Reunion at Fred Hutch on July 24-25, 2015. Transplant recipients and their donors, families and caregivers shared stories, heard presentations about new advances in treatment, saw labs where groundbreaking research is taking place and celebrated with a reception at Seattle’s Museum of History & Industry. “This weekend is to honor all of you,” said Dr. Fred Appelbaum, Fred Hutch deputy director and executive vice president.

TOP: Bina Sugumar, a research tech in the Susan Parkhurst Lab, shows fruit flies to Bone Marrow Transplant Reunion attendees on July 24 at Fred Hutch. Photo by Bo Jungmayer / Fred Hutch

TOP: Bone marrow transplant reunion attendees acknowledge Dr. Rainer Storb as his professional accomplishments are read during his introduction at the BMT reunion on the Fred Hutch campus in Seattle on July 24. Photo by Robert Hood / Fred Hutch

MIDDLE LEFT: Cindi Cervone and her husband, David, a 30-year transplant survivor from Sterling Heights, Mich., listen to Dr. Fred Appelbaum speak during the welcome reception. Photo by Robert Hood / Fred Hutch

BOTTOM LEFT: Kate Pittman, from Lilburn, Ga., hugs a fellow survivor at the BMT reunion at Fred Hutch. Photo by Bo Jungmayer / Fred Hutch

BOTTOM RIGHT: Fred Hutch President and Director Dr. Gary Gilliland thanks BMT survivors and their families for helping to push cancer research forward during his speech at the BMT reception July 25 at Seattle’s Museum of History & Industry. Photo by Robert Hood / Fred Hutch

VIEW MORE PHOTOS ONLINE AT FREDHUTCH.ORG/REUNION
A pioneering procedure’s expanding influence

Developed to treat leukemia, stem cell transplants gave rise to new therapies for an ever-growing number of patients and conditions

BY DR. RACHEL TOMPA

WHEN DR. E. DONNALL THOMAS first pioneered bone marrow transplantation in the 1960s and 1970s, his goal was to treat patients with advanced leukemia — at the time, a nearly universal death sentence. Today, thousands of patients with blood cancers around the world are cured every year thanks to modern forms of transplantation, and the procedure is also used for dozens of other diseases besides leukemia, with many more in the research pipeline.

Most importantly for the future of cancer therapies, it was Thomas and his colleagues’ work developing bone marrow transplantation at the newly founded Fred Hutchinson Cancer Research Center that revealed the potential for the human immune system to eliminate cancer.

Although the researchers originally aimed to cure leukemia by eradicating patients’ malignant white blood cells with high doses of chemotherapy and radiation, and then replacing them with healthy donor cells, they found something unexpected — that when a cancer patient received a transplant from an identical twin, their disease often roared back within mere months of the time, a nearly universal death sentence.

That observation launched decades of intense exploration by research teams at the Hutch and around the world into the immune system’s tumor-fighting potential. Ultimately, it laid the groundwork for the now-burgeoning field of immunotherapy, which uses a variety of techniques to harness or enhance the power of immune cells or molecules to precisely target malignant cells, sparing healthy cells and toxic side effects associated with traditional cancer treatments.

Immunotherapies represent just one of the families of treatments that continue to ripple out of transplantation, extending the reach of this landmark approach and its cousins to more and more patients.

Researchers (many of whom trained under Thomas early in their careers) have built upon the foundation of transplantation new houses of treatment and cures for other diseases as well, including autoimmune disorders such as Crohn’s disease.

Infectious disease

Because transplantation destroys much of the immune system, patients are especially susceptible to infections, many of which can be dangerous or even deadly. In an effort to improve transplant safety, Hutch teams have made seminal contributions to understanding how to detect, prevent and treat many of the viruses and fungi that can cause disease — work that also kicked off research that has impacted care for other immunocompromised people, including organ transplant recipients and patients with HIV.

Gene therapy

What researchers have learned about both transplantation and stem cells has broadened the possibilities for modern gene therapy. Researchers at the Hutch and elsewhere are developing cutting edge gene therapies that aim to reach directly into patients’ genomes and correct disease-causing mutations or split out hidden viral DNA, thus curing potentially virulent diseases such as HIV, sickle cell disease, thalassemia, severe combined immunodeficiency (SCID) and Fanconi anemia.

Cord blood transplants

Using stem cells from donated umbilical cords, which don’t need to be as strictly matched to the recipient as adult stem cells, cord blood transplantation broadens options for the thousands of cancer patients every year who can’t find a matched adult donor.

Mini-transplants

Developed at Fred Hutch, these gentler versions of bone marrow transplantation brought the procedure’s curative power to an older population not previously eligible for the more toxic preparations of the traditional transplant.

Supportive care

Methods developed to support transplant patients through the difficult procedure — like food safety guidelines for immunocompromised patients and the Hickman line, an extended-use catheter developed at the Hutch to deliver IV nutrition or chemotherapy and draw blood samples without requiring patients to undergo hundreds of individual needle sticks — have helped shape the standard of care for patients undergoing many other forms of treatment beyond transplantation.

Bone marrow transplants

Pioneering work by Dr. E. Donnall Thomas and his colleagues at Fred Hutch made bone marrow transplantation a curative therapy for patients with certain blood cancers. Over the years, their unique approach to refining the procedure and steadily building on discoveries has rippled into many other spheres of treatment — and continues to drive new ideas that could translate into therapies for many more patients in need.

Immunotherapy

This collection of techniques developed at the Hutch and at many other research centers around the world harnesses and boosts the body’s own ability to eliminate cancer cells and is based on Thomas’ original observations of the immune system’s power to fight cancer. Whether through immune molecules known as antibodies that can precisely recognize tumors, killer immune cells known as T cells engineered or selected for their ability to home directly to and destroy cancer cells, or viruses that can trigger the patient’s immune system to prevent or treat cancer, immunotherapeutic approaches are already being used to treat certain cancers.

Today, blood stem cell transplants are used for numerous forms of leukemia and lymphoma as well as dozens of other diseases, including myelodysplastic syndromes (MDS), multiple myeloma, Wiskott-Aldrich syndrome, anemias and more, as well as for children with blood cancers.

Researchers are also testing transplantation to treat autoimmune disorders such as Crohn’s disease.

Broadening transplantation’s reach

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‘This little bag of cells is going to save her life’

A girl and her mom remember a lifesaving transplant

BY JENNA AND JULIE GIBSON,
AS TOLD TO SUSAN KEOWN

JENNA GIBSON WAS DIAGNOSED with acute myeloid leukemia when she was 9 years old. She was treated with a cord blood transplant. She and her mother, Julie, shared their story.

JULIE: We took Jenna in to her pediatrician — it was March 5, 2012 — and her doctor looked at her, just one look, and said, “Huh, Jenna, something’s just not right.”

As soon as the doctor got the blood results back — it was just two hours — she was calling us and telling us to go to the ER at Seattle Children’s Hospital, immediately.

The word “surreal” gets overused. This, this was surreal, to have this moment. I can remember calling my husband, and telling him, “Hey, we’re on our way to Seattle Children’s,” and I’m using this voice that doesn’t match what I’m saying. I didn’t want to get Jenna all nervous if we didn’t have to. But when your pediatrician says, “The ER will see you immediately,” you know that’s not good.

JENNA: I took the diagnosis of leukemia pretty hard, just like anyone would, and I broke down in tears. I was really nervous to see what would happen to me.

JULIE: She went on one round of chemo, and it was after that round that they knew that chemotherapy alone was not going to be enough, she was labeled “high risk.” And it was at that point that they knew that she was going to have to have a bone marrow transplant.

One reason we were so devastated when we found out she was going down the transplant road is that you need a matched donor, and the first place they look is siblings. Jenna happens to be adopted, so we knew a sibling donor match was not an option. And secondly, the percentage of donors that are non-Caucasian is tiny. Jenna’s non-Caucasian.

When a matched bone marrow donor could not be found for Jenna, she got a cord blood transplant under the care of Fred Hutch’s Dr. Colleen Delaney. Cord blood is a lifesaving option for the thousands of patients every year who, like Jenna, need a transplant of blood stem cells but cannot find a matched adult donor.

It was amazing to watch those cells go into her. It’s just this little bag, and it’s so nonchalant. Because by then she’d had so many blood and platelet transfusions, for Jenna it was no different procedurally. But this is what was going to save her life. Going back to that word “surreal,” this is what that word is used for. Because it’s unbelievable: This little bag of cells is going to save her life.

In the end, she walked away from cancer treatment with just three rounds of chemo plus full-body radiation. There are kids that go rounds and rounds and rounds and rounds of chemo. So, hindsight’s 20/20 and we were devastated then [when we found out she would need a transplant], but we’ve praised God every day since.

We’re almost at three years, but at the five-year mark we can finally feel pretty confident that it’s not coming back. We’re looking forward to that.

Jenna Gibson, 13, and her mom, Julie, in their Maple Valley, Wash., home on March 20, 2015. Jenna survived leukemia when she was 9 years old. Photo by Robert Hood / Fred Hutch

PATIENT PROFILE

Write to Susan Keown at skeown@fredhutch.org

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Double your gift through your employer’s match program.

Your support helps patients like Jessie Quinn, whose life was saved by a treatment pioneered by Dr. Colleen Delaney at Fred Hutch. Maximize your support for lifesaving treatments today by asking your employer to match your gift.

Jessie Quinn with her husband, Brett Williams, their daughter Luna Williams and dog Topo.

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At Fred Hutch, we tell the world about the incredible, life-changing science happening here, and we know the importance of being part of our community. To that end, and for the first time ever, we are opening the doors to a visitor center to showcase our research, tell our stories and give everyone who visits an opportunity to connect with us on a personal level. Starting in September 2015, you can visit our campus, learn how Fred Hutch continues to change lives and share your own story. Come with questions and leave inspired. Cures Start Here.