2013 Annual Report

THE CANCER PROGRAM AND
LANASA GRECO CENTER
FOR CANCER AND
BLOOD DISORDERS

CHILDREN'S HOSPITAL
New Orleans

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CHILDREN'S HOSPITAL

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UMC UNIVERSITY MEDICAL CENTER NEW ORLEANS

CHILDREN'S HOSPITAL
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2013 Annual Report

THE CANCER PROGRAM AND LANASA GRECO CENTER FOR CANCER AND BLOOD DISORDERS

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ABOUT CHILDREN'S HOSPITAL

Children's Hospital began as a dream in the minds of a group of very special community leaders about a decade before the hospital became a reality. In the years following World War II, a poliomyelitis epidemic attacked thousands of children, leaving many handicapped. Concerns about these children led the late Elizabeth Miller Robin, a polio victim herself, to establish a rehabilitation hospital for children. The facility opened in 1955.

What makes the hospital unique is the combination of the latest developments in medical treatment and an atmosphere of love and concern for the whole child. Throughout its history, Children's Hospital has served as a teaching facility where faculty from the Louisiana State University Health Sciences Center forms a strong pediatric teaching program. In 1976, Children's Hospital was expanded to become a full-service general pediatric hospital. It has since expanded continually to meet the growing healthcare needs of our community.

Today, Children's Hospital is the only full-service pediatric hospital in Louisiana. A 247-bed, not-for-profit regional medical center offering the most advanced pediatric care, the hospital's more than 300 pediatric specialists care for children from birth to 21 years in more than 40 specialties, including life-threatening illnesses, routine childhood sicknesses and preventive care. In 2011, Children's Hospital recorded 194,339 visits by 59,403 children. ■

ACCREDITATIONS American Academy of Pediatrics, American College of Surgeons (ACoS), Commission on Cancer, Joint Commission on Accreditation of Healthcare Organizations, National Marrow Donor Program, Foundation for the Accreditation of Cellular Therapy (FACT)

MEMBERSHIPS Child Health Corporation of America, Children's Oncology Group (COG), Louisiana Hospital Association, Children's Hospital Association formerly CHCA, NACHRI, and N.A.C.H., Metropolitan Hospital Council of New Orleans

FROM OUR CHAIRPERSON

We are dedicating this year's cancer report to our adolescent and young adult patients (AYA) ranging in age from 15-21 years (AYA actually encompasses patients between 15-29 years of age).

Historically, this group of patients poses a number of challenges which may include complex medical care, a multitude of psychosocial issues and systemic barriers to care. This group of patients also tends to have a poorer outcome compared to their younger counterparts. One of the major factors for this inferior result can be attributed to the very low participation in clinical trials. In the United States, only ~ 5% of the AYA group are entered into clinical trials whereas more than 65% of younger patients are enrolled. In addition, these patients are usually treated in adult centers when their type of cancers are more pediatric related and as such, they may not get the most optimal treatment when using adult trials. To compound these problems, the incidence of cancers has increased more rapidly in the AYA group compared to the younger population (Table 1).

There are a number of reports published to date showing that adolescents and young adults with Acute Lymphoblastic Leukemia (ALL) treated in pediatric clinical protocols by pediatric oncologists in a pediatric center have significant improvements in their outcome. The difference is substantial, with a **20-30 percent** absolute improvement in their event-free survival. This remarkable outcome is also observed in other types of cancer such as in lymphomas and sarcomas.

We have included in this year's report, 2 studies on our AYA group, one on the outcome for patients with bone sarcoma and the other on AYA survivorship for patients treated in our institution compared to SEER results.

Clearly, the AYA group is a special cohort of patients with their unique features and needs. They should not be forgotten nor neglected but rather, we need to have increase awareness of their issues and intervene accordingly.

Fortunately, these needs are now being addressed, as the National Comprehensive Cancer network (NCCN) has published guidelines in 2012 for the care of the AYA oncology patients. The aims of these guidelines are "to identify issues specific to the AYA population, recommend interventions, and have special considerations related to cancer care in order to improve treatment compliance, tolerance, and clinical outcomes". Participation in clinical trials for the AYA population is strongly encouraged.

It is of paramount importance that these guidelines be actively considered and followed in order to provide the most favorable treatment plans for this special group of patients. ■

Lolie C. Yu, MD, Division Chief

AVERAGE ANNUAL AGE-SPECIFIC INCIDENCE RATES PER MILLION

ADOLESCENTS 15–19 YEARS OLD FOR SELECTED TUMORS, ALL RACES, BOTH SEXES, SEER, 1975-1995*

	RATE			
TUMOR TYPE (ICCC[3] CATEGORY)	**1975-1979**	**1980-1984**	**1985-1989**	**1990-1994**
All sites	183.0	187.7	199.3	203.8
Acute lymphoblastic leukemia	10.6	13.2	12.4	13.0
Non-Hodkin lymphoma	10.7	14.5	14.4	16.3
Osteosarcoma	6.6	8.9	9.7	9.3
Testicular germ cell tumor	22.1	26.7	24.9	28.4
Ovarian germ cell tumor	7.9	8.3	11.8	13.3
Gonadal carcinoma	2.7	2.4	4.3	5.3

* Modified from Smith MA et al [1].; [3] International classification of Childhood Cancer.; [1] Bleyer, A, Med Pediatr Oncol 2002

THE CANCER AND BLOOD DISORDERS PROGRAM AT CHILDREN'S HOSPITAL

The Cancer and Blood Disorders Program at Children's Hospital comprises the largest group of pediatric hematology and oncology physicians and nurses in the Gulf South dedicated exclusively to the comprehensive treatment of all types of malignancies and blood disorders including leukemia, anemia and hemophilia, among many others. They work side by side with a medical staff of more than 300 pediatric specialists, including pathologists, radiologists, oncology surgeons and neurosurgeons. Our pediatric experts realize that caring for children with malignancies and blood disorders commands a delicate balance of medical care and emotional support. Support for patients and their families is provided by child psychiatrists, psychologists and social workers. Other members of the multidisciplinary team include bone marrow transplant coordinators, pharmacists, dieticians, laboratory technologists, and physical, occupational, speech and hearing, music and recreation and child life therapists, who provide compassionate comprehensive "total care" for the child and family.

Children's Hospital Center for Cancer and Blood Disorders is approved/accredited by:

■ **American College of Surgeons (ACoS), Commission on Cancer (CoC) as a Pediatric Hospital Cancer Program.** Though patient care is our primary focus, Children's Hospital is an active participant in clinical and basic research of childhood cancers and blood disorders. We have received ACoS, CoC accreditation with commendation for the years 2010, 2011, 2012 and 2013.

■ **Children's Oncology Group (COG),** a national study group of premier research institutes in the United States and Canada. COG is a National Cancer Institute (NCI) sponsored cooperative group of individuals and institutions dedicated to improve the diagnosis and management of children and adolescents with cancer, with the aim of curing every newly diagnosed patient and to assure that every child with cancer achieves the highest quality of life during and following treatment. Most of the malignant tumors and leukemias are treated at Children's Hospital with the same protocols as those of other 240 COG institutions (i.e., St. Jude's Research Hospital, MD Anderson, Johns Hopkins) have adopted throughout the nation. COG has recognized Children's Hospital as the only approved bone marrow transplant program in Louisiana for COG protocol studies.

■ **Louisiana State University Health Science Center (LSUHSC) and the Stanley S. Scott Cancer Center** have been members of COG for more than 20 years. This allows the Children's Hospital/LSUHSC Minority Community Clinical Oncology Program (MCCOP) to offer innovative and up-to-date clinical trials as part of the NCI-sponsored COG.

■ Children's Hospital/LSUHSC School of Medicine is also a **teaching facility** for medical and nursing students and those completing graduate and post-graduate training in other allied health programs**.** The hospital plays a major role in the training of general pediatricians and pediatric hematology-oncology fellows. Our program is part of the LSU Health Sciences Center, Department of Pediatrics.

■ **National Marrow Donor Program (NMDP)** as a pediatric transplant center. Through the NMDP, Children's Hospital has access to the largest worldwide registry of hematopoietic stem cell donors. This affiliation provides patients with the best chance of finding a suitable donor for transplantation.

■ **The Foundation for the Accreditation of Cellular Therapy (FACT)** has accredited our clinical Bone Marrow and Hematopoietic Stem Cell Transplant (HSCT) program and the Cellular Therapy Collection and Processing Facility. We are one of 20 pediatric HSCT programs in the United States to receive FACT accreditation.

ONCOLOGY SERVICES

LEUKEMIA

- Acute Lymphocytic/Lymphoblastic Leukemia (ALL)
- Acute Myelocytic/Myeloblastic Leukemia (AML)
- Chronic Myelocytic Leukemia (CML)
- Juvenile MyeloMonocytic Leukemia (JMML)

Our pediatric oncologists develop the treatment plan adequate for each child based on the type of leukemia and the risk factors identified at the time of diagnosis. A full range of treatment modalities, including chemotherapy, bone marrow stem cell transplantation, and radiation therapy is available for children. With today's risk stratification and treatment, the overall survival for some types of leukemia is as successful as 85%.

LYMPHOMAS

- Hodgkin's Disease (HD)
- Non-Hodgkin's Lymphoma (NHL)

Children and adolescents with Hodgkin's disease and non-Hodgkin's lymphoma are evaluated and treated according to the specific subtype and stage of the disease. The supportive care provided by the members of our medical team helps alleviate the potential complications developed during the cancer treatment.

BRAIN AND SPINE TUMORS (NEURO-ONCOLOGY)

- Astrocytoma/Glioma
- Medulloblastoma
- Ependymoma
- Primitive NeuroEctodermal Tumor (PNET)
- Germ Cell Tumors (GCT)-Central Nervous System (CNS)
- Atypical Teratoid/Rhabdoid Tumor (ATRT)

OUR **TEAM** OF MEDICAL ONCOLOGISTS

LOLIE C. YU, MD, DIVISION CHIEF
Director, Bone Marrow Transplant Program, Children's Hospital/LSUHSC
Divison Chief
Professor of Pediatrics, LSU Health Sciences Center
LSU CCOP/Children's Oncology Group (COG) Principal Investigator

RENEE V. GARDNER, MD
Pediatric Oncologist, Children's Hospital
Director, Sickle Cell Clinics
Professor of Pediatrics, LSU Health Sciences Center

JAIME MORALES, MD
Pediatric Oncologist, Children's Hospital
Director, Bleeding and Thrombosis Clinic
Associate Professor of Pediatrics, LSU Health Sciences Center

CORI MORRISON, MD
Pediatric Oncologist, Children's Hospital
Assistant Professor of Pediatrics, LSU Health Sciences Center

PINKI K. PRASAD, MD
Pediatric Oncologist, Children's Hospital
Director, Late Effects Clinic
Assistant Professor of Pediatrics, LSU Health Sciences Center

MARIA C. VELEZ, MD
Pediatric Oncologist, Children's Hospital
Director, Pediatric Hematology-Oncology Fellowship Program
Professor of Pediatrics
LSU Health Sciences Center

Tumors of the central nervous system (brain and spine) constitute the most common solid tumors in children. These children require a comprehensive team of specialists with expertise in the special treatment and management needed for each particular child and the family. For most of these tumors, surgery is the main treatment option. Our team of Pediatric Neurosurgeons offers the latest surgical techniques to accomplish a gross total resection when possible.

PEDIATRIC NEUROSURGEONS

- Lorie McBride, MD
- Clarence Greene, MD
- O. Adetola Roberts, MD

Our pediatric oncologists coordinate the multidisciplinary team who contribute to the care of the child with a tumor of the central nervous system.

They recommend the most appropriate oncological treatment: observation with close monitoring after complete resection (for some low grade tumors); chemotherapy (standard or high doses with autologous stem cell rescue) and/or radiation therapy. Our Radiation Oncologists planned a detailed treatment program which is most appropriate for the young patient. Using advanced techniques like Intensity Modulated Radiation Therapy (IMRT) or Gamma Knife, when indicated, this team of specialists provides the care of our patients required within the national guidelines defined by COG. Touro Infirmary, where our patients receive their radiation therapy treatment, is a COG approved institution, and it is under the excellent leadership of our Radiation Oncologists.

RADIATION ONCOLOGISTS

- Ellen Zakris, MD
- Eleysia Outlaw, MD

Children's Hospital hosts the best Pediatric Rehabilitation Program in Louisiana and the Gulf region. Our patients with brain and spine tumors receive comprehensive evaluation and treatment plan specifically designed to maximize the potential recovery from these tumors. Members of the Rehabilitation Team include:

- Pediatric Neurologists
- Physical Therapists
- Occupational Therapists
- Speech Therapists
- Child Life Specialists and Therapists
- Music Therapists
- Neuropsychologists
- Nutritionists
- Social Workers

SOFT TISSUE SARCOMAS (STS) AND OTHER SOLID TUMORS

- Neuroblastoma
- Osteosarcoma
- Ewing's Sarcoma
- Rhabdomyosarcoma
- Wilms' Tumor

In close collaboration with our Pediatric Oncologists, The Center for Cancer and Blood Disorders at Children's Hospital offers a multidisciplinary team of specialists represented by the following medical and surgical disciplines:

PEDIATRIC SURGERY

- Charles Hill, MD
- Evans Valerie, MD
- David Yu, MD

ORTHOPEDIC ONCOLOGIC SURGERY

- Stephen Heinrich, MD

OTORHINOLARYNGOLOGY (ENT) SURGERY

- Anita Jeyakumar, MD
- Daniel Nuss, MD

GENITOURINARY SURGERY (UROLOGY)

- Joseph Ortenberg, MD
- Christopher Roth, MD
- Aaron Martin, MD

PEDIATRIC PATHOLOGY AND TRANSFUSION MEDICINE

- Randall Craver, MD
- Tom Carson, MD
- Matthew Stark, MD

PEDIATRIC RADIOLOGY

- Kenneth Ward, MD
- Chris Arcement, MD
- Marie Louise Haymon, MD
- Jane Congeni, MD
- Ewa M. Wasilewska, MD

Other Pediatric subspecialties including Endocrinology, Nephrology, Infection Diseases, Psychiatry, Cardiology, Gastroenterology, and Allergy and Immunology are available for consultation when the child's oncological care requires it.

BONE MARROW AND HEMATOPOIETIC STEM CELL TRANSPLANT PROGRAM

Bone marrow and Hematopoietic Stem Cell Transplantation (HSCT) has become an alternative treatment for many patients as the list of diseases for which HSCT has been considered continues to grow. The sources of stem cells are varied: bone marrow, peripheral blood stem cells mobilized by growth factors or chemotherapy, and cord blood.

COG has recognized Children's Hospital as the only approved bone marrow transplant program in Louisiana for COG protocol studies. This allows patients access to all COG transplant protocols without the need to travel far to get this life saving treatment. A multidisciplinary team of physicians, nurses, social workers, nutritionists, pharmacists, physical therapists, psychologists and blood bank personnel is available, with experience and commitment to the clinical practice and basic science of hematopoietic stem cell transplantation.

Children's Hospital is accredited by the National Marrow Donor Program (NMDP) giving Children's Hospital access to the largest worldwide registry of hematopoietic stem cell donors. This affiliation provides patients with the best chance of finding a suitable donor for transplantation. The Foundation for the Accreditation of Cellular Therapy (FACT) has approved our clinical HSCT program and our cellular therapy collection and processing facility as only one of 20 pediatric HSCT programs in the United States to receive this prestigious accreditation. Children's Hospital/HSCT program is a full member of the Pediatric Blood and Marrow Transplant Consortium (PBMTC) which is the largest forum focused on Pediatric BMT and it is a core member of the NIH-funded BMT-CTN network. This affiliation allows our patients to participate in clinical trials aimed at improving the clinical outcomes of BMT.

More recently, we got approval to be a member of the Primary Immune Deficiency Transplant Consortium (PIDTC) whose aim is to improve the outcome of patients with rare, life-threatening, inherited disorders of the immune system. It is part of the NIH rare diseases clinical research network (RDCRN) and is funded by the National Institute of Allergy and Infectious diseases (NIAID) and the NIH Office of Rare Diseases Research (ORDR).

In order to provide to our patients the most innovative and advanced knowledge and technology, our HSCT program has several firsts:

- **The first HSCT center to implement the use of mesenchymal stem cells (MSC) in transplantation to treat severe refractory graft versus host disease more effectively.**
- **The first program in Louisiana to perform dual cord blood transplantation**
- **The first program in Louisiana to participate in a clinical study with Celgene to perform transplants utilizing human placenta-derived stem cells (HPDSC) in combination with cord blood stem cells.**

For additional information regarding our hematopoietic stem cell transplant program, please contact Dr. Lolie Yu in the Hematology/Oncology department at (504) 896-9740.

LATE EFFECTS CLINIC AND SURVIVORSHIP PROGRAM

With advances in current therapy, 80% of childhood cancer patients will be cured of their disease and become survivors. Currently, there are more than

New Orleans Saints Player Thomas Morestead presents a check to the Hematology/Oncology program

270,000 pediatric cancer survivors living in the United States. Research has demonstrated that some survivors are at risk for physical and psychological issues related to cancer diagnosis and its therapy. Radiation, chemotherapy and surgery are used to successfully treat childhood cancer and can lead to "late effects." **The Treatment After Cancer and Late Effects (TACLE) Clinic** is Louisiana's first dedicated cancer survivorship clinic under the leadership of Dr. Pinki Prasad. Throughout her fellowship at Vanderbilt University, she conducted research specific to late effects in childhood cancer and is currently involved in the late effects group at Children's Oncology Group. The main goals of the TACLE Clinic is to improve the health and well-being of childhood cancer survivors by promoting adherence to a schedule of follow up appointments and routine screening tests, and to educate patients, families, and healthcare professionals about the long term effects of cancer treatment. The clinic meets twice a month. For appointments please call Dr. Pinki Prasad at 504-896-9740.

A visit in the Treatment after Cancer and Late Effects clinic includes:

- An individualized treatment summary
- A complete physical exam and routine laboratory and diagnostic testing as needed
- A review of previous therapy and potential long-term effects
- Guidance from the team on ways to improve quality of life and future health
- Availability of a psychologist to discuss any emotional or cognitive (learning) issues resulting from cancer and its treatment
- An opportunity to participate in research studies that focus specifically on the issues of childhood cancer

OUTPATIENT CLINIC AND INFUSION AREA

Treatments that once required a child to be admitted to the hospital are now often given on an outpatient basis. Patients visiting the Hematology/Oncology outpatient clinic will find themselves in an environment where the comfort and care of the child and family come first. Located in the hospital's Ambulatory Care Center, a separate HEPA-filtered patient suite with private entrance and waiting area has been dedicated for patients with cancer or blood disorders. The outpatient clinic provides the safest conditions for immunocompromised patients. Under the close monitoring and supervision of our Pediatric Hematology-Oncology team, a highly skilled group of nurses, trained in chemotherapy administration, blood products (platelets and red cells) transfusions, and gammaglobulin infusions, cares for our patients with compassion and sympathy.

Our infusion area consists of a large treatment room where the patients may watch TV, play video games, or relax while watching tropical fish in tanks set within the walls of the room—all this to induce a friendlier and non-threatening environment while the child receives chemotherapy infusions, blood product transfusion and other therapies.

The clinic sees on average 40 patients per day and is open Monday through Friday, 8 a.m. to 4:30 p.m.

If the need arises during a clinic visit, patients can be promptly admitted to the hospital's acute

care unit, designated specifically for hematology/oncology patients. To better serve our growing patient population, the Outpatient Clinic and Infusion Area is scheduled to start a complete renovation and expansion during 2014. For appointment please contact the Pediatric Hematology/Oncology Office at 504-896-9740.

LANASA GRECO CENTER FOR CANCER AND BLOOD DISORDERS INPATIENT UNIT

The LaNasa Greco Center for Cancer and Blood Disorders is on the fourth floor of Children's Hospital's West Tower. The inpatient unit boasts of 18 private rooms in a state-of-the-art and comfortable environment for patients and families. Each room, as well as the entire unit, is equipped with high efficiency particle air (HEPA) filtration. This system allows bone marrow transplants to be performed in any room and is essential to reducing the risk of infection. Accessed through a positive pressure vestibule, the unit allows for the highest level of protection for patients. The unit, overlooking Audubon Park, also includes a playroom stocked with games, toys, art supplies and computers, and an activity center, where music and recreation therapists can interact with small groups of children for organized play. A parents' lounge is available for those needing peace or respite.

Patients and their families develop a special bond with the staff on the fourth floor, and the staff is committed to helping them cope both emotionally and physically with the side effects and complications associated with disease and treatment.

HEMATOLOGY SERVICES

The Hematology/Oncology service treats a wide variety of hematologic disorders including sickle cell disease and other anemias, neutropenias, platelet and bleeding disorders. More children with blood disorders come to Children's Hospital for treatment than to any other hospital in the state. They receive the highest level of care from a medical staff experienced in the latest treatments for a full spectrum of disorders.

HEMOPHILIA, OTHER BLEEDING DISORDERS, AND THROMBOPHILIA CENTER

In 2013, the Division of Hematology-Oncology at Children's Hospital received accreditation as a federally-recognized **Hemophilia Treatment Center (HTC)** to provide state-of-the-art comprehensive mul-

CANCER COMMITTEE **MEMBERS**

Lolie C. Yu, MD, Professor of Pediatrics, Cancer Committee Chairman, Pediatric Hematology/ Oncology

Matthew Stark, MD, Physician Liaison, Pediatric Pathology

Simone Bienvenu, RN, Quality Assessment and Improvement

Cynthia Boudreaux, CTR, Cancer Registrar

Chittalsinh Raulji, MD, Hematology/Oncology Fellow

Randall D. Craver, MD, Pediatric Pathology

Matthew Fletcher, MD, Pediatric Hematology/Oncology Fellow

Renee V. Gardner, MD, Professor of Pediatrics, Hematology/ Oncology

Cherie Hadley, RN, Pediatric Nurse Coordinator

Kristen Haugen, Child Life Specialist

Anita JeyaKumar, MD, Pediatric ENT

Emily Kirk, LSCW, Social Services department

Marie-Louise Haymon, MD, Radiology

Wendy Huval, RHIA, Director of Medical Records

Dana Leblanc, Pediatric Hematology/Oncology Fellow

Suresh Mandhare, Director of Pharmacy

Jaime Morales, MD, Associate Professor of Pediatrics, Hematology/Oncology

Cori A. Morrison, MD, Assistant Professor of Pediatrics, Hematology/Oncology

Pinki Prasad, MD, Assistant Professor of Pediatrics, Hematology/ Oncology

Lisa Patterson, RN, Nurse Coordinator, Pediatric Hematology/ Oncology

Maria Patterson, RN, BMT Nurse Coordinator

Natasha Haynes, Assistant Vice-President, Hospital Operations

Muriel Roberts, RN, CRA, Clinical Trials Center

Stephanie Sonnier, RN, Director, Clinical Trials Center

Roxanne Stegall, MSW, Social Services department

Jamie Suckerman, MSW, Social Services department

Maria C. Velez, MD, Professor of Pediatrics, Hematology/ Oncology

Claudette Vicks, RN, Pediatric Hematology/Oncology Nurse Coordinator

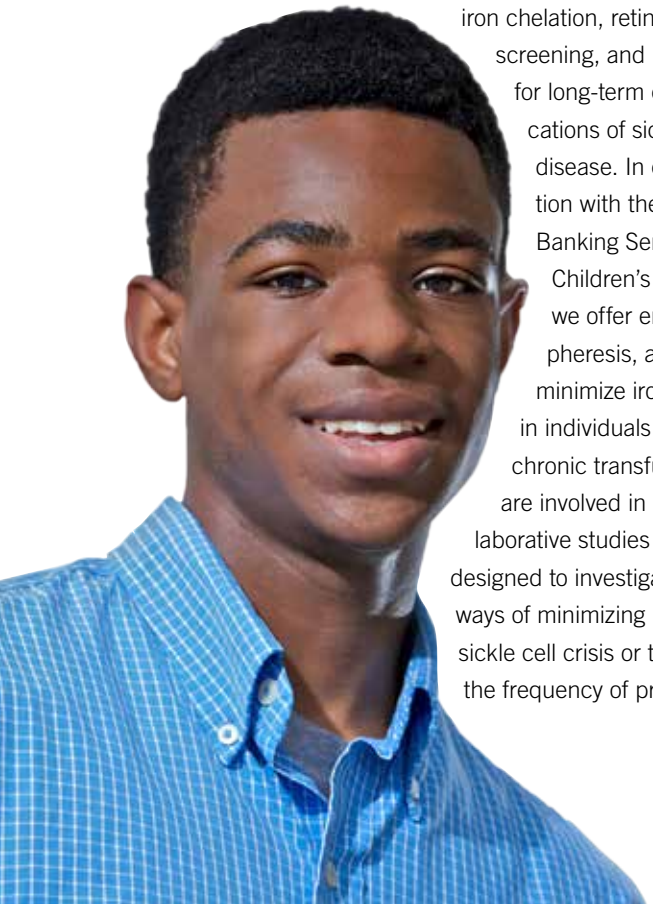
Lynn Winfield, RN, Nurse manager

Ellen L. Zakris, MD, Pediatric Radiation-oncologist

tispecialty care to Louisiana children with all types of bleeding and clotting disorders. Furthermore, our Program became an affiliate of the American Thrombosis and Hemostasis Network (ATHN), the leading organization committed to advancing and improving care for individuals affected by bleeding and clotting disorders in the U.S. Through its HTC status and ATHN affiliation, our Division is collaborating with the Center for Disease Control and Prevention and its Universal Data Collection Program, a national public health surveillance project created to address the needs and improve the health of individuals with hemophilia and other blood disorders. In addition, our Program actively participates in several industry-sponsored clinical trials, with the goal of locally providing the most advanced and up-to-date treatments for our patients.

SICKLE CELL DISEASE AND OTHER HEMOGLOBINOPATHIES

Children's Hospital provides comprehensive management and care for over 300 patients with sickle cell disease. Satellite clinics are located in Baton Rouge, Lafayette and Lake Charles, La. From the time the patients are first identified as having a hemoglobinopathy, they are offered the most progressive treatment available for stroke prevention, iron chelation, retinopathy screening, and monitoring for long-term complications of sickle cell disease. In collaboration with the Blood Banking Services at Children's Hospital, we offer erythrocytopheresis, a method to minimize iron overload in individuals receiving chronic transfusion. We are involved in national collaborative studies which are designed to investigate newer ways of minimizing pain during sickle cell crisis or to lessen the frequency of problems associated with sickle cell disease. In addition to sickle hemoglobinopathies, we also treat individuals who are diagnosed with other hemoglobinopathies like thalassemia, Hemoglobin E, and Hemoglobin C disease. Our involvement in the National Marrow Donor Program and the National Cord Blood Registry permits us to offer transplantation to greater numbers of patients with hemoglobinopathies, who might otherwise have had to forego this treatment option due to the unavailability of a suitable donor. We are currently in an agreement with Celgene to collect and bank cord blood for families whose child has been inflicted with a malignancy or blood disorder—a service often beyond the financial means of many of our families.



RESEARCH

The members of the Hematology/Oncology section of the Department of Pediatrics (LSU and Children's Hospital) have maintained a strong and energetic interest in research, in the effort to improve care and expand knowledge regarding the various disease processes that are encountered by them. One main venue for research has been with the Children's Oncology Group (COG), in which all members of the division participate. Collaboration with other LSUHSC faculty and with research staff in The Clinical Trials Center has also brought exciting and fruitful results.

CLINICAL TRIALS CENTER

The Clinical Trials Center™ (CTC) was established in 1999 to improve health care for children and adolescents through the development of new medications and treatments. Our efforts help to create a culture in which safer and more effective drugs and treatments are available for a wide range of health problems. The Clinical Trials Center ™ organizes community and hospital-based physicians into a multispecialty research network. The CTC is located in the Research and Education Building on the main campus of Children's Hospital. The 60,000-square-foot, state-of-the-art facility is the permanent home for the Research Institute for Children (RIC), a collaboration between Children's Hospital, LSU Health Sciences Center (LSUHSC) and University of New Orleans, which houses some of the region's fore-

most scientists and clinicians dedicated to pediatric research. The RIC benefits from the ease at which research efforts can be transferred from the laboratory to the bedside.

Support services are essential to providing the infrastructure to conduct research. The CTC provides a full-range of services designed to provide researchers with the tools necessary to conduct clinical trials within the confines of their practice. CTC staff provides complete administrative and clinical support to assist researchers through the protocol lifecycle. Services include, but are not limited to:

- Study procurement
- Protocol review
- Sponsor contract and budget negotiation
- Completion, submission and maintenance of required regulatory documents
- Institutional Review Board submissions
- Coordination of ancillary services
- Confidentiality of record
- Facilities

The clinical facilities and resources at Children's Hospital are available to researchers and study teams. The CTC staff coordinates inpatient and outpatient services to ensure research procedures are performed according to the protocol. For more information visit our website at www.chnola.org.

CLINICAL AND TRANSLATIONAL RESEARCH

Our faculty members have been active as mentors for the summer cancer and/or genetics research programs offered at LSUHSC and the Stanley S. Scott Cancer Center. Some of this year's projects include:

■ Survivorship Analysis for Adolescents and Young Adults (AYA) with Cancer: Our Experience at Children's Hospital. Drs. Chittalsinh Raulji (fellow); Amanda Glinky (LSU School of Medicine); Renee Gardner and Pinki Prasad (faculty). A 10 year retrospective study examining our institution's survival data in the adolescent and young adult population and comparing it to national Survival, Epidemiological and End Results (SEER) data. The results of this study are published in this annual report and will be presented at local and regional professional meetings.

■ Survivorship Analysis for Osteosarcoma and Ewing's Sarcoma in Children and Adolescents at Children's Hospital of New Orleans: Comparison to SEER Data. Drs. Chittalsinh Raulji (fellow), Hope Pritchett (resident), and Jaime Morales (faculty). The results of this study are published in this annual report and are submitted for publication in a peer-reviewed journal.

■ Patient Satisfaction with Hurricane Readiness Plan Given to Hematology-Oncology Patients at Children's Hospital of New Orleans. Drs. Chittalsinh Raulji (fellow); Maria C Velez, and Renee Gardner (faculty). This study's aim is to assess the effectiveness of our hurricane plan given to our patients and their families and the barriers encountered at the time of evacuation. The results of this study at our local professional meeting (LSUHSC and School of Medicine).

■ Optimization of Pain Management Strategies in Children with Sickle Cell Disease and Vaso-occlusive Crises. The aim of this study is to develop a standardized treatment plan for the management of these children, including healthcare providers and patients' education to enhance the recognition of signs and symptoms and prompt intervention. Drs. Dana LeBlanc (fellow); Cori Morrison, Maria C. Velez, and Renee Gardner (faculty).

■ Establishing a Palliative Care Program at Children's Hospital of New Orleans. A collaborative effort to establish a palliative care team at Children's Hospital to provide comprehensive care to children with life threatening or life-limiting diseases. Drs. Matthew Fletcher (fellow) and Cori Morrison (faculty).

■ Development of a Co-morbidity Scale in the Adolescent and Young Adult Population using the AYA Hope Study Data. Using a population based series of AYA cancer patients to determine the prevalence

of co-morbidities by socioeconomic and clinical characteristics. Dr. Pinki Prasad is co-Principal Investigator in this national study in collaboration with the Children's Oncology Group (COG).

■ Psychological and Neurocognitive Outcomes in Survivors Diagnosed with Cancer as AYA: A Report from the Childhood Cancer Study (CCSS). The aim of this study is to describe the neurocognitive and emotional functioning among long term survivors of cancer diagnosed during AYA using the CCSS cohort. Dr. Pinki Prasad is co-Principal Investigator in this national study in collaboration with the Children's Oncology Group (COG).

■ The Utility of Peripheral Blood Cultures in Febrile Pediatric Oncology Patients. Our primary objective is to assess the frequency of blood stream infections detected by peripheral blood culture when the central line culture is negative in order to determine if the peripheral blood culture is necessary in the evaluation of the pediatric febrile neutropenic patient. Drs. Dana LeBlanc (fellow); Lolie Yu (faculty).

SCIENTIFIC TRANSLATIONAL RESEARCH

■ The Role of Myeloid Derived Suppressor Cells in Graft vs. Host Disease in Pediatric Hematopoietic Stem Cell Transplantation. The aim of this study is to evaluate the role of the immunomodulatory cells (myeloid derived suppressor cells) in pediatric hematopoietic stem cell transplant patients to better understand the etiology of graft vs. host disease and potentially find new therapies for this disease. This research is being conducted in collaboration with the Louisiana Cancer Research Center and is supported by the Hyundai Hope on Wheels Grant Program. Drs. Matthew Fletcher (fellow); Drs. Paulo Rodriguez (Research Mentor) and Lolie Yu (Clinical Faculty Mentor).

■ The Effects of Fenofibrate in Glioblastoma. The study of the effects and mechanism of action of fenofibrate in the treatment of glioblastoma, an aggressive form of brain tumor. Drs. Jennifer Mullinax (fellow); Luis del Valle and Krzysztof Reiss (Research Mentors).

■ Association of Human Neurotropic JC Virus with Pediatric Brain Tumors. PCR amplification and immunohistochemical studies of archived pediatric brain tumors from Children's Hospital, New Orleans to investigate the presence of polyomavirus genomic sequences and the expression of viral proteins, such as T-Antigen, and their role in the pathogenesis of pediatric brain tumors. The results of this study were presented at the national meeting of the American Society of Clinical Oncology (ASCO) and are submitted for publication in a peer-reviewed journal. Drs. Jennifer Mullinax (fellow); Luis del Valle (Research Faculty Mentor) and Randall Craver (Faculty). ■

PATIENTS RECEIVE A SPECIAL INVITE:

H&M STORE GRAND OPENING WITH ACTORS BLAKE LIVEY AND RYAN REYNOLDS

A TEAM APPROACH: SUPPORT SERVICES

Pediatric cancer is a devastating diagnosis that affects the entire family. When a child is diagnosed with cancer, the child and his/her family can experience intense and often overwhelming feelings of anxiety, helplessness, anger, guilt, fear, depression, shock and denial. As part of our comprehensive and multidisciplinary program, the following supportive services are available to all our patients:

SOCIAL SERVICES

The Pediatric Hematology-Oncology Social Services staff is here to support families during this difficult time. Social workers help patients and families identify their concerns, consider effective solutions, and better cope with the child's illness. Support for families is offered in the form of emotional assistance, coping with the child's illness, sibling support, assistance with school needs, and wish granting organizations. Assistance is also provided in the areas of temporary lodging while the child is receiving treatment, directing families to transportation services, providing forms of financial assistance, referrals to community programs, crisis intervention, discharge planning. Our overall goal is to assist families with problem solving and adjusting to daily life after diagnosis.

EMOTIONAL SUPPORT

- HOPE Group
- Sunshine Kids
- Super Sibs
- Bec's R&R Fund
- The S.MI.L.E Project (See below

LODGING

- **RONALD MCDONALD HOUSE**—provides temporary residence for the families of children receiving treatment in New Orleans area hospitals

ADDITIONAL SUPPORT PROGRAMS

Coordinating with the child's primary oncologist the child's wish through one of the following organizations:

- **MAKE-A-WISH FOUNDATION**—provides children throughout Louisiana with an opportunity to participate in activities that they might never otherwise have been able to enjoy. For more information: http://texgulf.wish.org/
- **DREAMS COME TRUE**
- **CAPS FOR KIDS**—an international non-profit organization dedicated to providing headwear autographed by athletes, entertainers and other notable personalities to children, adolescents and young adults with cancer who lose their hair as a result of their treatment. Caps for Kids was founded in 1993 by Dr. Stephen Heinrich, a pediatric orthopedic oncology surgeon at Children's Hospital. The program now exists at more than 70 hospitals in the United States, four in Canada, and one in Frankfurt, Germany. For more information: http://www.capsforkids.org

PSYCHIATRY/PSYCHOLOGY

The Child Psychiatry and Psychology departments provide comprehensive evaluation and management of emotional and behavioral disorders stemming from the diagnosis of cancer and its treatments. They work closely with the Hematology/Oncology physicians and social workers pioneering multidisciplinary psychosocial conference to ensure the stability of mental health of these patients under stressful conditions. Counseling is provided for patients and families allowing them to freely discuss their concerns regarding the diagnosis, treatment, treatment aftermath, school and other social concerns.

PASTORAL CARE

Pastoral care services are provided to assist the child and family members as they ask these and other questions and express their feelings. Our chaplain is on call at all times and in case of emergencies. The chaplain participates in meetings with the staff as an integral member of our team and also participates in family conferences when asked to do so. A non-denominational chapel is located in the main lobby area where the parents, family members, and friends can gather to pray, meditate, or spend some quiet time.

CHILD LIFE THERAPY

Using developmentally appropriate play, the dedicated child life therapists:

- Promote opportunities for children to understand their new diagnosis
- Adjust to the hospital experience
- Learn coping skills
- Express themselves
- Maintain normal growth and development

An attractive playroom, with a view of Audubon Zoo is located on the Pediatric Hematology-Oncology unit. Some of the playroom activities during the evening hours include bingo night and movie night. The Child Life Therapy department is dedicated to improving the quality of life for children facing the many challenges of cancer treatment while they remain hospitalized. Other activities sponsored by the Child Therapists are:

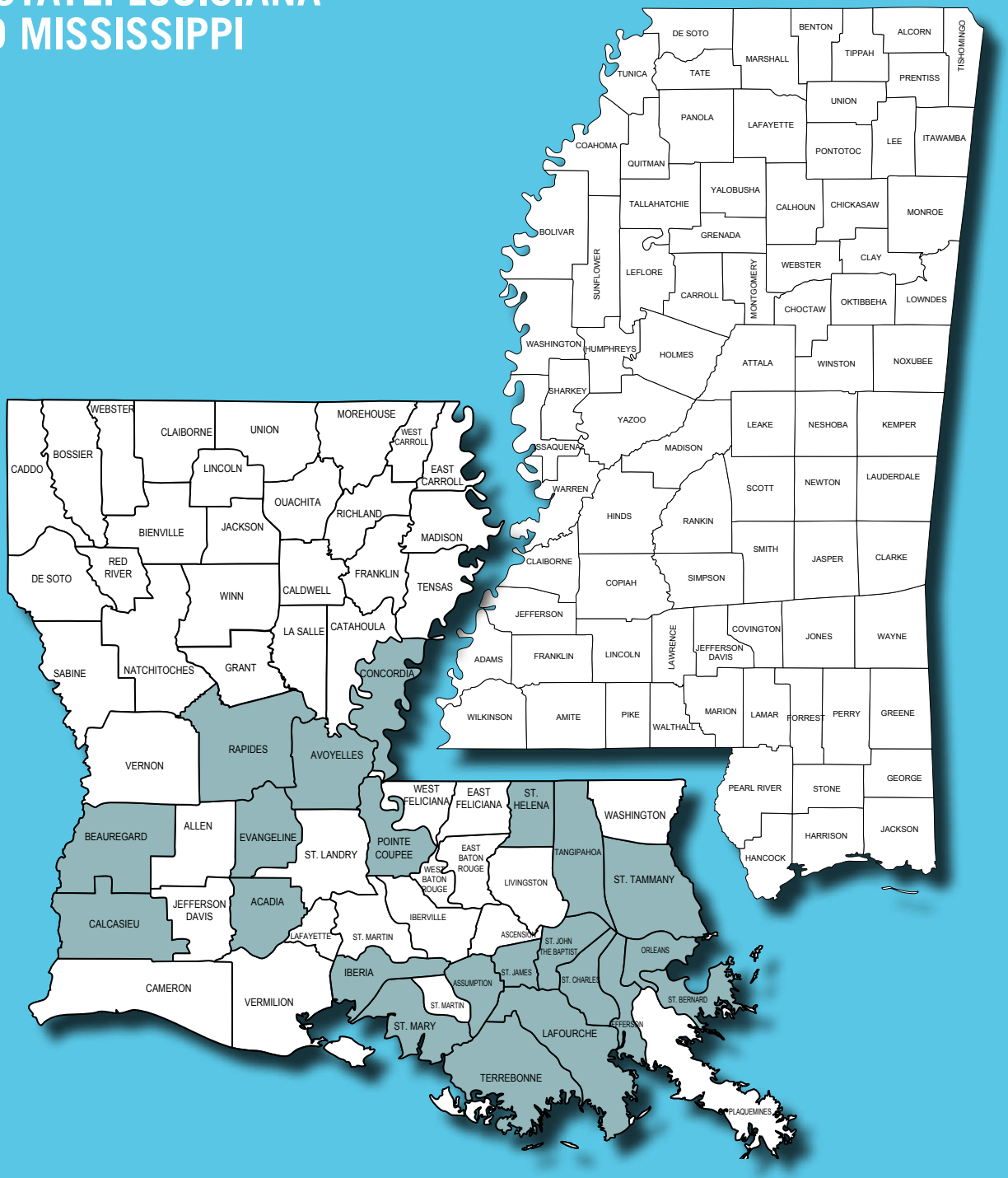
THE S.M.I.L.E. PROJECT: STUDENTS MAKING IT A LITTLE EASIER

For over a decade now, Children's Hospital has had the only successful SMILE Program in the state. The SMILE Program is a collaboration between Children's Hospital, LSUHSC School of Medicine-New Orleans, and the American Cancer Society. The goal is to pair first-and-second year medical students as "buddies" with children with cancer and their siblings. The buddies then maintain a relationship with the children that are non-medical but emotionally supportive through difficult hospitalizations and treatment. Throughout the year, members of the SMILE program plan theme-specific parties to enjoy time together with the patients while creating crafts and lifetime memories. This has proven to be a very rewarding program for both patients and medical students alike.

FERTILITY IN CANCER SURVIVORS

As the number of childhood cancer survivors continue to increase with modern treatment modalities, the concern of the survivors, their partners and relatives, as well as their oncology treating team about their fertility has ignited the identification of fertility specialists who help our cancer survivors find answers to their concerns. The LSUHSC Department of Obstetrics and Gynecology under the leadership of Dr. Amy Young offers consultation to our patients when needed. Since January 2011, we have actively offer Sperm Banking Services to our young male patients at the time of diagnosis to cryopreserve sperms for future use if needed. ■

PATIENT DATA
BY STATE: LOUISIANA AND MISSISSIPPI



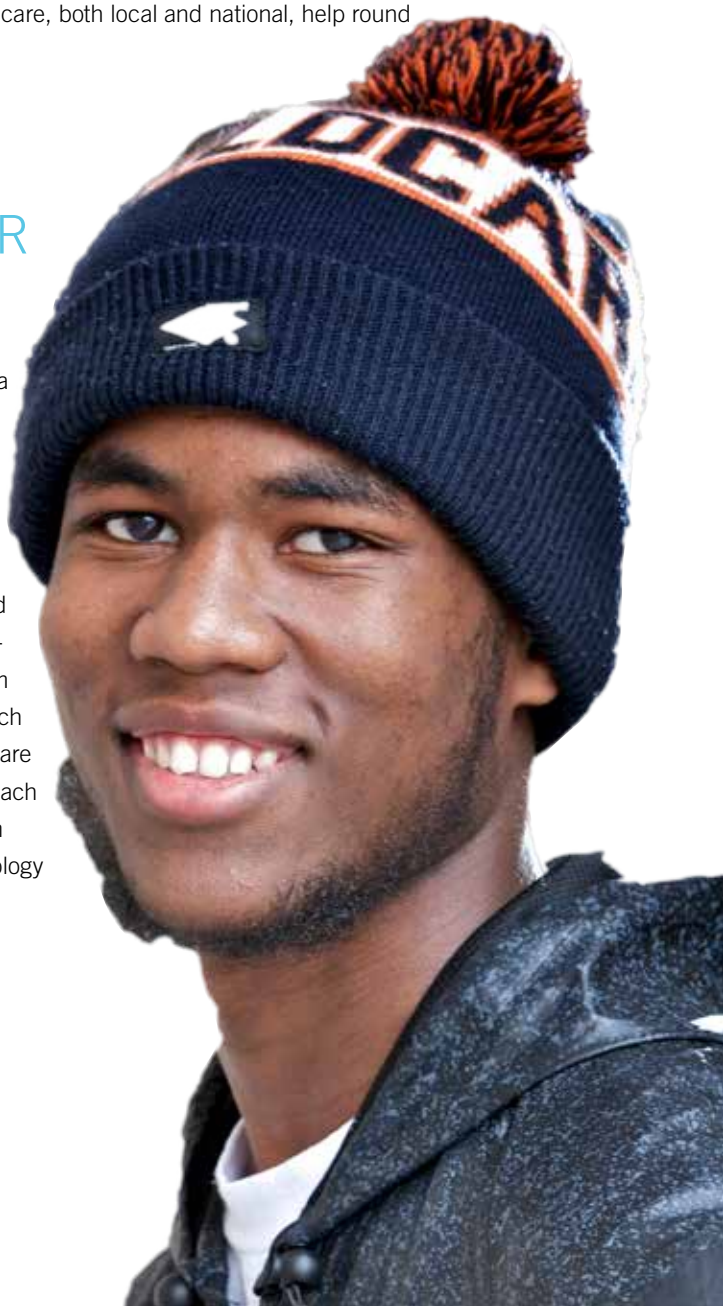
FELLOWSHIP PROGRAM

The Pediatric Hematology-Oncology and Hematopoietic Stem Cell Transplant Fellowship Program at LSUHSC/Children's Hospital was formally accredited by the Accreditation Council for Graduate Medical Education (ACGME) in 1989. The program is directed by Dr. Maria C. Velez and comprised of faculty members Drs. Gardner, Morales, Morrison, Prasad and Yu. Our program draws individuals from around the country and throughout the world. Graduates of the program have gone on to distinguish themselves in many fields, assuming at times roles of leadership wherever they have gone. The program utilizes the clinical resources and faculty expertise available at Children's Hospital and LSUHSC, New Orleans.

Teaching and patient care take place at Children's Hospital. The program maintains an active partnership with the LSUHSC Stanley S. Scott Cancer Center and the Louisiana Cancer Research Consortium (LCRC). Research activities are conducted through the establishment of partnerships with experienced and capable investigators such as Drs. Augusto Ochoa, Paulo Rodriquez, Krzysztof Reiss, and Luis del Valle. Different rotations for the fellowship are offered in blood banking, hemophilia, bleeding disorders and thrombophilia care, radiation oncology and hematopathology. Fellows play an integral role in the planning and organization of conferences and lectures. Teaching activities include the Cancer Conference, journal club, protocol reviews, psychosocial conferences, and core lectures. Guest speakers with expertise in different areas of our subspecialty involved in cancer care, both local and national, help round out the fellowship's educational opportunities. ■

HOPE GROUP (HEMATOLOGY ONCOLOGY PARENTAL/CAREGIVER SUPPORT GROUP)

Having a child diagnosed with a life threatening disease can be a devastating time in both the child and the caregiver's life. Not only are families faced with financial stressors, but emotional strains may arise as well. In order to provide our families with support, the Hematology/Oncology social workers developed the Hematology Oncology Parental Encouragement Group. The Hope Group's purpose is to create a safe opportunity for caregivers to give and receive emotional and practical support, as well as to exchange information. Meeting with others who share a common experience enables them to not only sympathize, but empathize. Group members can relate to each other's experiences, minimize feelings of loneliness, and learn and/or share new coping strategies. The HOPE Group meets the first Wednesday of each month from 6:00 p.m. to 7:00 p.m. in the second floor conference room at Children's Hospital. Each group is facilitated by two Hematology/Oncology social workers. ■



SURVIVORSHIP ANALYSIS FOR OSTEOSARCOMA AND EWING'S SARCOMA IN CHILDREN AND ADOLESCENTS: **A CHILDREN'S HOSPITAL EXPERIENCE**

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INTRODUCTION

Primary malignant bone tumors account for approximately 6% of all childhood malignancies. Of these, osteosarcoma and Ewing's sarcoma are the most common and have an annual incidence of 8.7 per million under the age of 20 years[1]. Osteosarcomas and Ewing's sarcomas comprise 56% and 34% of all malignant bone tumors, respectively[2].

Osteosarcomas are derived from primitive bone-forming mesenchymal stem cells and most often occur near the metaphyseal portions of long bones. Most osteosarcomas occur in the extremities, with the most common sites being the distal femur, the proximal tibia, and the proximal humerus[1] (Figures 1 and 2). About 80% of cases have localized tumor at presentation whereas the remainder present most commonly with pulmonary metastasis[1]. Treatment generally includes high dose methotrexate, doxorubicine and cisplatin, with some regimens addingifosfamide and etoposide[1, 3]. Neoadjuvant chemotherapy

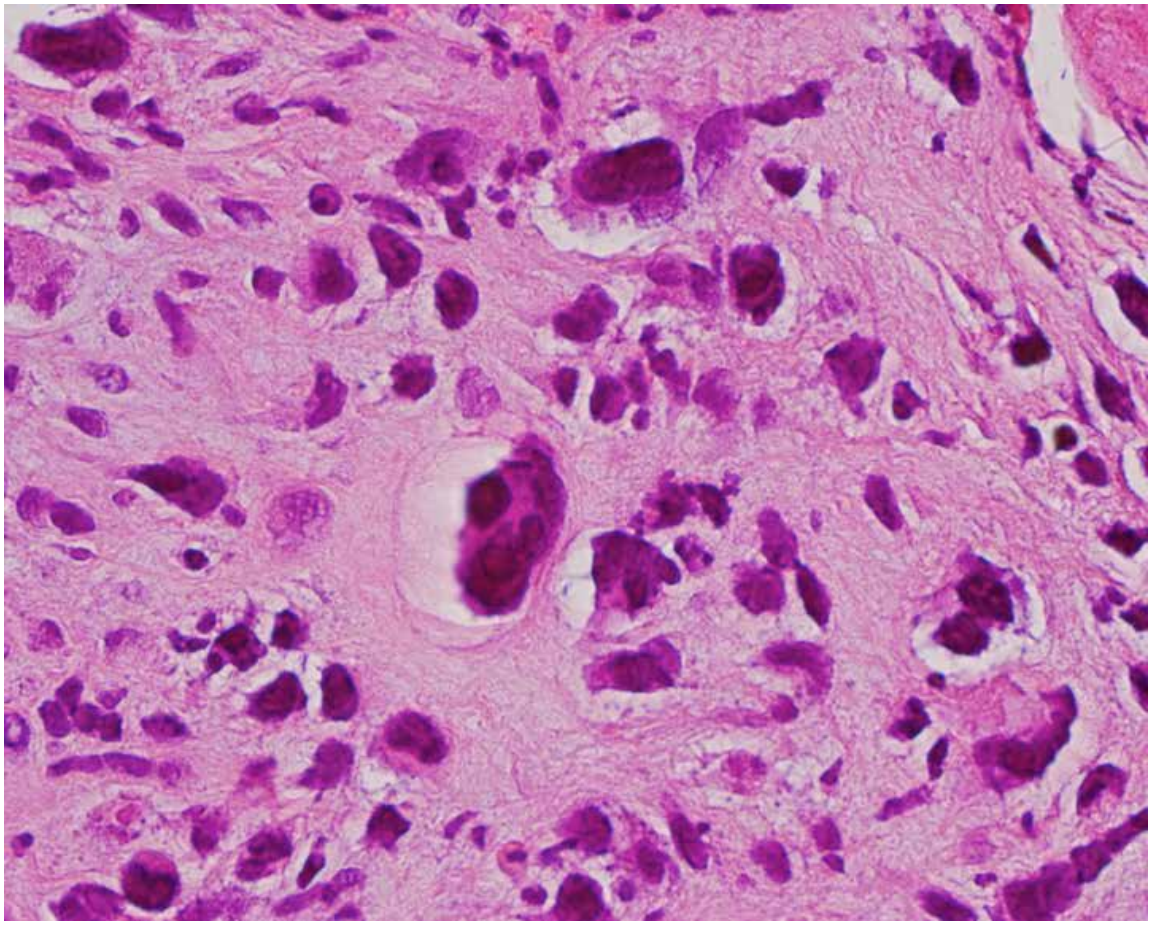

FIGURE 1. High gradeosteoblastic osteosarcoma with cellular pleomorphism (different cell sizes) and anaplasia (dark "hyperchromatic" nuclei) as seen in this photomicrograph. The individual cells are embedded in a pink background matrix; this is neoplastic osteoid, the essential characteristic for diagnosis (hematoxylin-eosin,

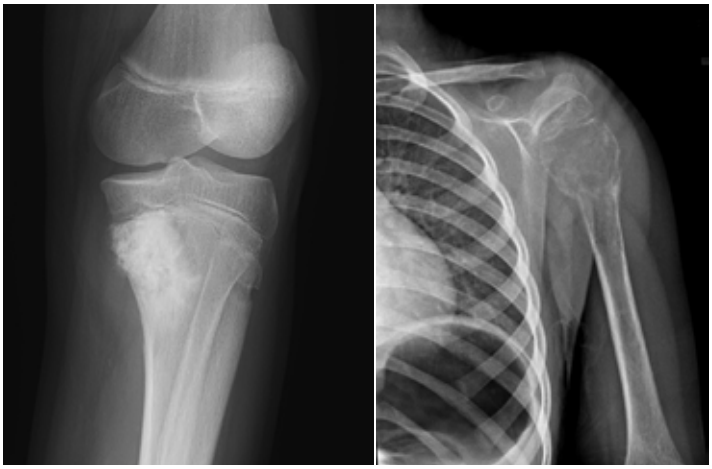

FIGURE 2. a) On Left, AP plain radiograph demonstrates focal blastic changes in the proximal medial tibial metaphysis. There is cortical irregularity and poor delineation of the tumor margins consistent with malignancy. The presence of dense blastic new bone production within a primary bone neoplasm is characteristic of osteosarcoma. b) On right, AP plain radiograph of the left shoulder demonstrates a lytic expansile lesion of the proximal left humerus with cortical irregularity consistent with superimposed fracture deformity. The aggressive ill-defined margins against the adjacent humeral shaft suggest malignancy, as opposed to the more typical and expected well-defined margins of a benign bone cyst. Telangiectatic osteosarcoma is known for its aggressive behavior and lack of new bone production.

TABLE 1: DEMOGRAPHICS OF THE PATIENTS

DEMOGRAPHICS		DISEASE			P VALUE
		TOTAL N (%)	OS N (%)	ES N (%)	
AGE	Mean (Years)	12.75	13.4	11.9	0.275
SEX	Male	20 (45%)	12 (48%)	8 (42%)	0.697
	Female	24 (55%)	13 (52%)	11 (58%)	
RACE	African-American	15 (34%)	13 (52%)	2 (11%)	0.015
	White	26 (59%)	11 (44%)	15 (79%)	
	Other	3 (7%)	1 (4%)	2 (10%)	
METASTASIS	No	23 (53%)	13 (52%)	10 (56%)	0.818
	Yes	20 (47%)	12 (48%)	8 (44%)	
RELAPSE	No	33 (84%)	21 (88%)	12 (77%)	0.528
	Yes	6 (16%)	3 (12%)	3 (23%)	
NECROSIS AT SURGERY	<90 %	7 (23%)	6 (27%)	1 (12%)	0.398
	>90 %	23 (77%)	16 (73%)	7 (88%)	
MARGINS	Negative	28 (82%)	17 (77%)	11 (92%)	0.201
	Positive	6 (18%)	5 (23%)	1 (8%)	
OVERALL SURVIVAL	Alive	33 (85%)	20 (83%)	13 (87%)	0.779
	Dead	6 (15%)	4 (17%)	2 (13%)	

N: Number of patients; OS: Osteosarcoma, ES: Ewing's Sarcoma.

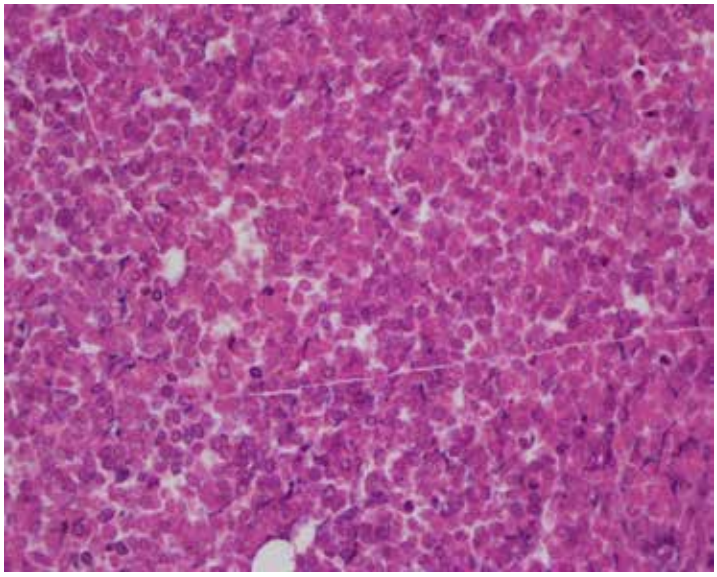

FIGURE 3. Typical Ewing's sarcoma lesion, homogeneous population of cells with poor definition of the individual cell membranes and regular round to oval nuclei with granular chromatin and one to two small nucleoli in a background devoid of recognizable matrix formation (hematoxylin-eosin, original magnification ×400).

is given for 3 months prior to surgical resection of the tumor. Histologic response to preoperative chemotherapy has been identified as an important prognostic factor[3].Long term disease-free survival for non metastatic osteosarcoma can be expected in the range of 60 to 75%[4]. In contrast, it is only 10% to 30% for patients with metastases[4].

Ewing's sarcoma is the second most common malignant bone tumor of childhood and adolescence. It is a small, round, blue-cell tumor thought to arise from neural crest cells1. It is evenly distributed between the axial and appendicular skeleton, and, in the long bones, the diaphysis is its most typical location[1, 5](Figures 3 and 4). Treatment includes an alternating regimen of chemotherapy drugs (vincristine-doxorubicin-cyclophosphamide and ifosfamide-etoposide) and interval compression

TABLE 2: FACTORS AFFECTING OVERALL SURVIVAL IN BONE TUMORS

Demographic		N	% survival	p value
Gender	Male	18	94	0.189
	Female	21	76	
RACE	White	22	82	0.69
	African American	14	86	
	Other	3	100	
Diagnoses	OS	24	87	1
	ES	15	83	
Time of Surgery	At Diagnoses	4	100	0.296
	<3 months	22	77	
	>3 months	9	100	
Metastasis	Yes	17	65	<0.001
	No	21	100	
Relapse	Yes	6	33	<0.001
	No	31	94	
Margin	Positive	6	33	<0.001
	Negative	27	96	
Necrosis	> 90 %	22	100	<0.001
	< 90 %	7	29	

N: Number of Patients; OS: Osteosarcoma; ES: Ewing's Sarcoma

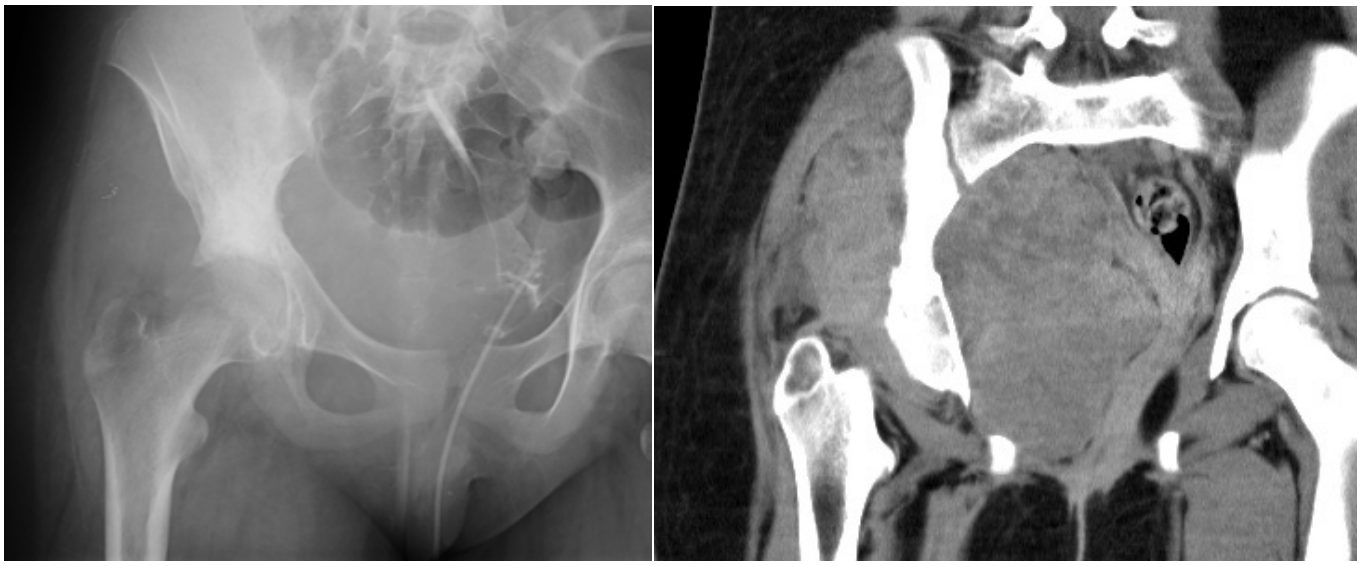

FIGURE 4: a) On Left, AP plain radiograph of the pelvis demonstrates soft tissue mass surrounding the right ilium with displacement of the bladder and right ureter to the left of midline. There is sclerosis and permeation of the ilium above the acetabulum with subtle periosteal new bone production. b) On right, non-contrast CT of the pelvis demonstrates the large soft tissue mass surrounding the right ilium without significant new bone production in the soft tissue component, most consistent with Ewing's sarcoma. There is irregularity and sclerosis of the underlying ilium consistent with tumor involvement.

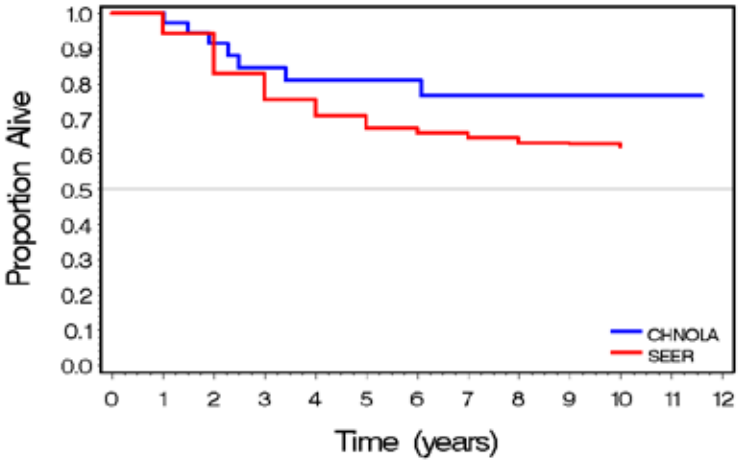

FIGURE 5: Comparison of relative survival by survival times for all bone tumor patients at CHNOLA and SEER.

for localized disease6. Non-metastatic disease at presentation has a 5-year disease-free survival rate of 70% whereas patients with metastases have a poor prognosis with a survival rate of approximately 25%[1, 5].

OBJECTIVES

To examine all cases of osteosarcoma and Ewing's sarcoma treated at Children's Hospital of New Orleans (CHNOLA) between 1999-2012 and compare our survival and other characteristics to national data from the 2010 Survival, Epidemiological and End Results (SEER) study.

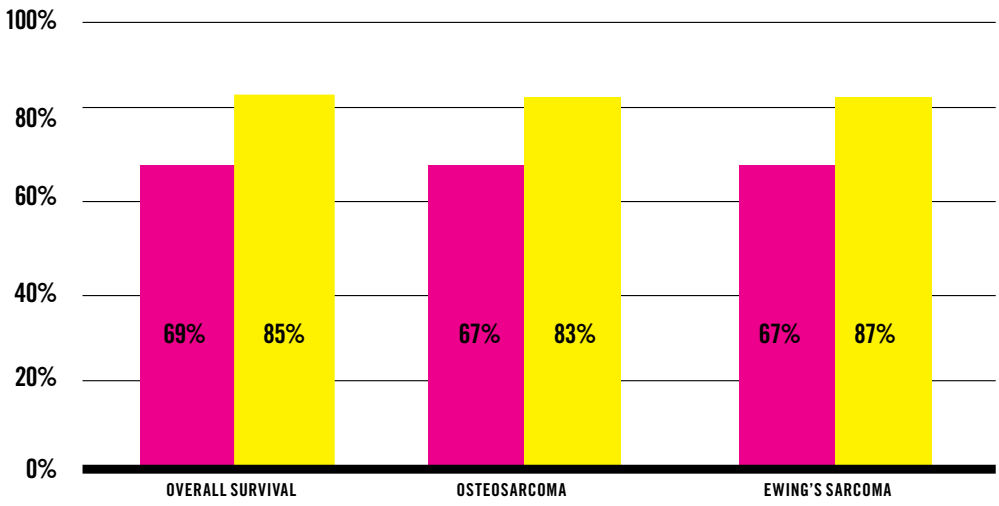

FIGURE 6. Five year survival rates for the CHNOLA patient cohort compared to SEER data.

STUDY DESIGN

A 13-year retrospective analysis of medical records for all patients diagnosed with osteosarcoma or Ewing's sarcoma and treated at CHNOLA was performed. Basic information including patient age, sex, race, date of diagnosis and type of diagnosis was recorded. Data was also collected regarding the type of treatment received, surgery, response to treatment prior to surgery, date of relapse (if any) and survival. Statistical analysis was performed to determine correlation between clinical variables and overall/ disease-free survival and comparison was made to SEER data from 2010.

RESULTS

From January 1, 1999 to December 30, 2012, 44 patients were diagnosed and treated for either Osteosarcoma or Ewing's sarcoma at our institution. 25 of the cases were osteosarcoma and 19 were Ewing's sarcoma. Demographic information from the cohort is presented in table 1.

Of note, Ewing's sarcoma was significantly more prevalent in white patients, which is consistent with national norms. The number of patients with and without metastasis were evenly distributed in our patient cohort, although it was not statistically significant.

Overall survival for all cases was 85%, with 83% for osteosarcoma and 87% for Ewing's sarcoma. This was superior to the reported SEER 5-year survival of 68.7% for malignant bone tumors for ages 0-19 years from 2003 to 2009. Figures 5 and 6 show comparison of outcomes between our cohort and the available SEER data.

Furthermore, survival was not affected by patients' age, gender, race or timing of initial surgery. All non-survivors had metastatic disease at presentation, which was a statistically significant adverse prognostic factor ($p<0.01$).Additionally, positive margins after surgery, relapse and poor tumor necrosis post-chemotherapy negatively affected survival (Table 2).

DISCUSSION

Major advances have been achieved in the treatment of osteosarcoma with the discovery of several chemotherapeutic agents that are active in this disease[7] as well as improvements in local control and limb-sparring surgical modalities. For non-metastatic osteosarcoma, the efficacy of surgery in combination with systemic chemotherapy is well established8. Similarly, the treatment of Ewing's sarcoma typically begins with neoadjuvant chemotherapy. Local control is then addressed with surgery, radiation therapy, or a combination of the two modalities. Additional adjuvant chemotherapy is then used after local control.

A number of studies have shown better outcomes in survival when adolescents are treated at pediatric oncology centers compared to their adult counterparts 9–11. Most patients in our cohort were treated per Children's Oncology Group protocols or by following strict pediatric oncology standards of care. This in turn may have contributed to our cohort havingbetter survival rates than the national average.

Previous data has shown that having metastatic disease is one of the most important factors affecting survival in bone tumors[4, 12, 13]. Other relevant factors includepoor histological response to chemotherapy, inadequate surgical margins and relapse[14, 15]. We were able to duplicate thesefindings, again demonstrating the importance of local control for the treatment of these malignant tumors.

In summary, our data showed improved outcomes for bone tumor patients when treated at a pediatric oncology center with a highly specialized comprehensive team that included orthopedic surgeons with expertise in advanced local control techniques. More effective therapies, perhaps targeting biological markers, are still needed for patients with metastatic disease.

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SURVIVORSHIP ANALYSIS FOR ADOLESCENTS AND YOUNG ADULTS WITH CANCER: **A SINGLE INSTITUTION REVIEW**

CHITTALSINH RAULJI, MD[1]; AMANDA GLINKY, MS[1]; CRUZ VELASCO, PHD[2]; RENEE GARDNER, MD[1]; PINKI PRASAD, MD, MPH[1]; DEPARTMENT OF PEDIATRICS, PEDIATRIC HEMATOLOGY ONCOLOGY, LSUHSC / CHILDREN'S HOSPITAL, NEW ORLEANS, LA, UNITED STATES[1] AND DEPARTMENT OF BIOSTATISTICS, LSUSHC NEW ORLEANS, LA[2]

INTRODUCTION

Adolescent and young adults (AYAs) cancer patients encompass a distinct, understudied, and underserved group in cancer care[1]. AYA cancers represent a distinct biology of tumors compared to pediatric and adult cancers[2]. The most common cancers in this age group in order of prevalence are lymphomas (Hodgkin and non-Hodgkin) followed by male genital system cancers, endocrine system cancers (thyroid), female genital system cancers, central nervous system (CNS) cancers, leukemias, breast cancer, soft tissue cancers and bones and joint cancers.. Figure 1 demonstrates the incidence of cancers in individuals aged 15-29 years old[3]. This distribution contrasts with that in young children in whom embryonal, small round-cell tumors such as neuroblastoma, Wilms tumor, retinoblastoma, rhabdomyosarcoma and teratomas are common, and with middle-aged and older persons in whom epithelial malignancies such as carcinomas of the prostate, breast, colorectum and urinary bladder, lymphomas, malignant melanoma, and carcinomas of the ovary, kidney and pancreas account for more than 85% of cancers[2].

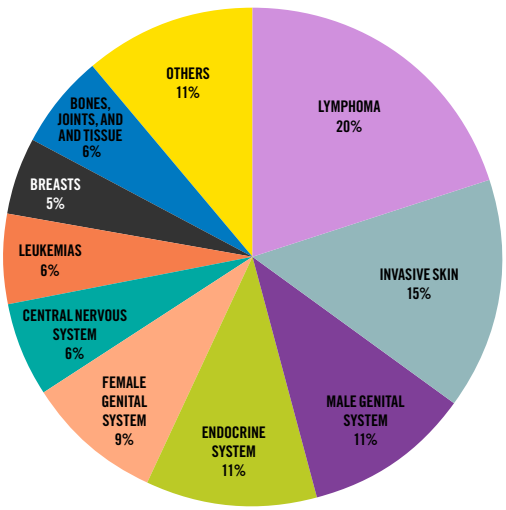

FIGURE 1: Cancer in individuals ages 15 to 29 years by primary site

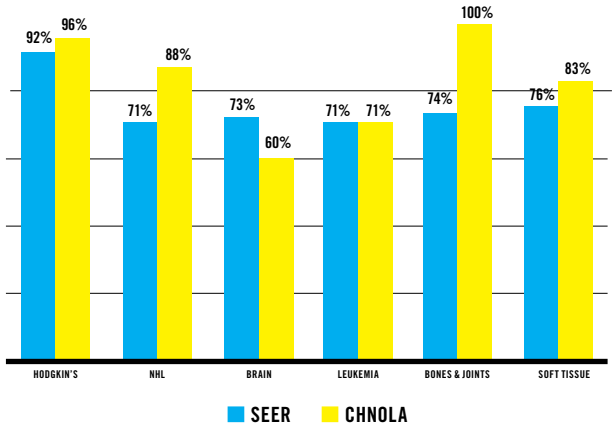

FIGURE 2: Comparison of outcome for patient cohort with the SEER data
Total number of patients at CHNOLA for different cancer types: Hodgkin's Disease – 26, Non-Hodgkin's Lymphoma (NHL)- 16, Brain tumors- 5, Leukemia- 22, Bone and Joint tumors- 9, Soft Tissue Sarcoma- 12. (Not shown in the figure Germ Cell Tumor- 4, Melanoma- 3, Renal Tumors- 3, Liver cancers- 3)

The 5 year relative survival for the top 5 cancer sites for ages 15-19 years has changed from 68.7% in the years 1975-1981 to 84.5% during the years of 2003-2009[3]. However, progress in survival improvement has been a fraction of that achieved in younger and older patients3. Various authors have noted that AYAs treated by pediatric oncologists have better outcomes[4-6]. We examined the cases of newly diagnosed cancer in AYA treated at Children's Hospital of New Orleans (CHNOLA) from 2003 to 2012, and compared treatment and outcomes to 2010 Survival, Epidemiological and End Results (SEER) data. Our goal was to demonstrate differences in survival of the AYA population treated at a pediatric center compared to national data.

METHODS

After institutional review board (IRB) approval was obtained, a 10-year retrospective analysis of medical records of patients aged 14-21 years at time of diagnosis was performed. Medical records were abstracted for data on age at time of diagnosis, race, gender, diagnosis, insurance, treatment (including chemotherapy, radiotherapy, hematopoietic stem

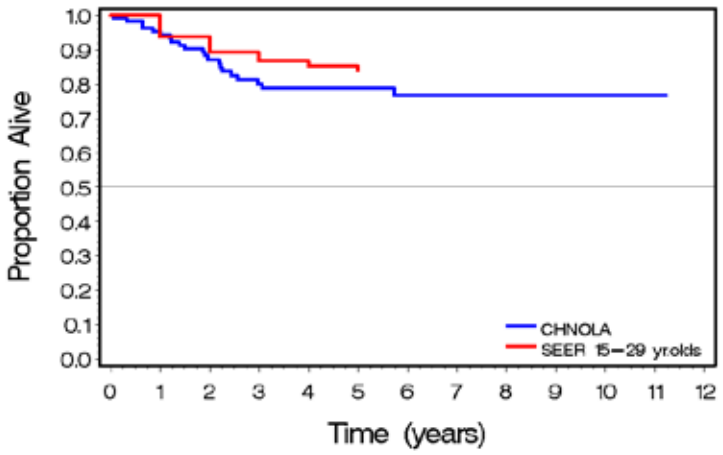

FIGURE 3: Comparison of relative survival by survival times for patients at CHNOLA and SEER.

cell transplantation) and outcome. CDC Epi Info was used for data entry and analysis. Data were analyzed using Chi-square to determine if clinical variables correlated with survival. Also institutional survival was compared to national data from SEER, using SEER stat software.

RESULTS

We identified 105 patients who were diagnosed between the ages of 14-21 years and received treatment during 2003-2012 at Children's Hospital in New Orleans. Demographic data is shown in Table 1. Mean age at diagnosis was 16 years and 5 months. There were 62 (59%) males and 43 (41%) females; the majority of the AYA patients (64%) had Medicaid as their primary insurance. Most of the patients were white (50%) or African American (41%) and only 9% were classified as other races. Many patients received radiation (54%) as part of their treatment protocol and a few (19%) required hematopoietic stem cell transplant as part of their therapy. Only 40 of the 105 patients treated during this time period were enrolled on a clinical trial. Females were more likely to be enrolled on a clinical trial (p=0.002) but males were more likely to be compliant with their clinic visits (p=0.007). Apart from that there were no significant differences between the groups. Of the 105 patients treated at CHNOLA, the majority of patients (61%) were diagnosed with lymphoma and leukemia. Table 2 shows frequency of distribution of types of cancer in our patient cohort compared to SEER data.

The 5 year overall survival was 80% in our AYA patient cohort diagnosed and treated between 2003-2012; this was comparable to SEER survival of 84.5% for the year 2003-2009[7]. Figure 2 shows outcomes for our patient cohort compared with SEER data. The survival for lymphomas, especially NHL, bone and joint tumors and soft tumors was slightly better than the SEER data, while the survival for leukemia was comparable. Survival for brain tumors was slightly better in SEER data than our patient cohort. The relative survival by survival times for patients at CHNOLA and SEER cohort is compared in Figure 3.

Factors such as gender, ethnicity, clinical trial enrollment, insurance at diagnosis, compliance to clinic visits, receipt of radiation therapy, relapse of primary disease, and necessity for stem cell transplant

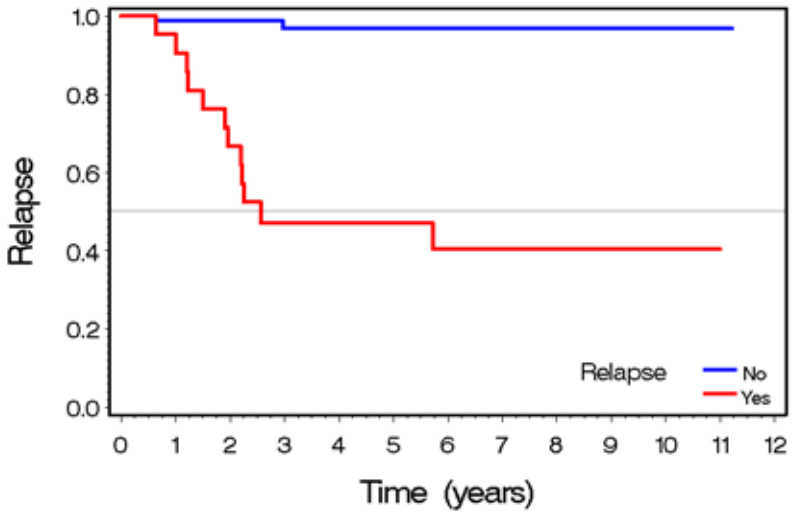

FIGURE 4: Comparison of relative survival by survival times for patients with relapse and without relapse.

as possible were examined to determine if they affected survival. Table 1 shows effect of these factors on relative survival. As noted, survival was not affected by patients' gender, race, clinical trial enrollment or patient compliance. Radiation therapy, which was used as a treatment modality for many cancers, did not seem to affect survival adversely. A total of 21 patients (22%) included in the study, had relapse of their primary disease. Relapse was found to be a significant factor adversely affecting survival ($p<0.001$)(Figure 4). Similarly, 20 patients (19%) received either autologous or allogeneic stem cell transplant for their disease, which was associated with decreased survival as well ($p<0.001$).

DISCUSSION

The AYA population has been variably defined internationally but is most commonly classified as patients ages 15 to 39 years of age at the time of cancer diagnosis[8, 9]. Nearly 68,400 AYAs were diagnosed with cancer in 2009 which is almost six times the number of children ages 0–14 diagnosed with cancer[10]. Due to the lack of progress in this age group relative to younger and older patients, there is a new found focus on the AYA population[2, 9, 11]. Steady progress with changes in therapy has improved the 5-year survival rate in children and older adults. For patients between 15 and 39 years of age, however, progress in survival improvement has been a fraction of that achieved in younger and older patients[3]. Between 1975 and 1998, the survival rate among childhood cancer cases in the United States (US) rose by nearly 40% compared with 23% among adolescents with cancer[12]. The lack of improvement in survival for AYA cancer patients is thought to be due to a variety of factors including unique disease biology, available standardized treatment protocols, and ability to tolerate therapy.

The distribution of cancer in our patient cohort was different from SEER data (Table 2). These differences were possibly because of inclusion of younger adolescents in our cohort. Most pediatric oncology providers agree that patients newly diagnosed with cancer between 14 and 18 years of age benefit from services distinct from those of younger patients13.African-Americans and Hispanics are known to enter puberty earlier than whites14and a significant proportion of our patients were African-American, which prompted us to define our age range for AYA as 14-21 years. Also, our survival data were comparable to the national averages when all the cancers were combined. We did not have many patients for the rarest types of cancers to compare outcome to national data in those cancers.

Survival in our study was adversely affected by presence of relapse or need for stem cell transplant. Both, relapse of the disease and need for a transplant, signified an advanced stage of disease and presumably resistance to initial treatment and were understandably related to adverse outcome. SEER data does not take into account those patients who need stem cell transplant, but there are a number of studies that have shown that childhood cancer patients with advanced disease, relapsed disease, or those who require a stem cell transplant have worse outcomes than those that do not[15, 16].

For a number of reasons, outcomes for adolescents with cancer are generally more favorable when treatment is provided in a pediatric compared with an adult oncology center6. Pediatric oncology specialists are more familiar with treatment of childhood leukemias and lymphomas and many AYA cancers are similar to these childhood cancers. For example, leukemias and non-Hodgkin's lymphomas are common in children and these cancers have excellent cure rates, in part due to age-appropriate supportive care that is more readily available in pediatric centers. Also the chance of being enrolled in a clinical trial is higher in a pediatric center compared to an adult treatment center[6]. Even when they are not enrolled in a clinical trial they are treated according to standard pediatric cancer treatment protocols, thus care is more standardized from one center to the next. In fact, several childhood cancer care task forces have recommended recently that adolescents with cancer always be treated in a pediatric rather than an adult setting[6, 17]. All of the patients in our cohort were treated with pediatric cancer protocols at a freestanding children's hospital. This may be a major contributing factor for better survival rates in most cancer groups in our cohort.

In the U.S., more than 90% of children with cancer who are less than 15 years of age are managed

TABLE 1: Demographic of the patients and 5 year survival					
PATIENT DEMOGAPHICS		**PATIENT NUMBERS**		**% Survival**	**p value**
		N	**Percentage**		
SEX	Male	62	41%	79%	0.809
	Female	43	59%	81%	
RACE	Caucasian	52	50%	77%	0.611
	African American	43	41%	81%	
	Other	10	9%	90%	
CLINICAL TRIAL ENROLLMENT	Enrolled	40	39%	75%	0.307
	Not Enrolled	64	61%	84%	
PATIENT COMPLIANCE	Compliant	86	82%	77%	0.112
	Non-compliant	19	18%	95%	
RADIATION TREATMENT	Radiation	48	46%	73%	0.081
	No Radiation	56	54%	88%	
INSURANCE	Medicaid	63	61%	78%	0.612
	Private	40	39%	83%	
RELAPSE	No Relapse	73	78%	97%	<0.001
	Relapse	21	22%	43%	
TRANSPLANT	Autologus	9	9%	56%	<0.001
	Allogenic	11	10%	89%	
	No Transplant	85	81%	27%	

at institutions that participate in NCI-sponsored clinical trials, and 55–65% of these young patients are entered into clinical trials. In contrast, only 20–35% of 15- to 19- year-olds with cancer are seen at such institutions, and only about 10% are entered into a clinical trial[17]. Although not statistically significant for survival, in our program 38.5% (N=40) patients were enrolled in (NCI sponsored) clinical trials, which was a lower rate than for <15 years old but still higher than national average of only 10%[17]. This may in part have ensured that these patients were receiving the newest treatment modalities. One of the reasons for low enrollment may be limited availability of open clinical trials nationally. Historically, pediatric cooperative groups did not include patients over the age of 18; therefore many of these patients were treated by adult oncologists. More recently, pediatric cooperative groups such as Children's Oncology Group (COG) have expanded their age requirements for leukemia, lymphoma and soft tissue and bone cancer protocols to include patients up until the age of 31 years of age at time of diagnosis.

Young adults are the most underinsured age group, falling in the gap between parental coverage and programs designed to provide universal health insurance to children and the coverage supplied by a full-time secure job[17]. The lack of insurance coverage can cause delays in AYAs seeking medical advice for their conditions and delays in diagnosis. In our cohort most of the patients had Medicaid as their primary source of insurance. Survival was not affected based on availability of insurance in our patient cohort, since a patient's lack of insurance does not adversely impact treatment at our hospital. The study was limited by being a single institution retrospective chart review. Data could not be collected for patients that were lost to follow up.The patient pool of 100 patients although sizable for a single institution, is not as large a population as that represented by SEER data.

Though progress is being made in treatment and

TABLE 2: Incidence of difference types of AYA cancers at CHNOLA vs SEER		
CANCER TYPE	**INCIDENCE PERCENTAGE**	
	CHNOLA	**SEER**
Lymphoma	40%	23%
Leukemia	21%	13%
Germ Cell Tumors	4%	13%
CNS Tumors	5%	10%
Soft Tissue Sarcoma	11%	7%
Bone tumors	9%	8%
Melanoma	3%	8%

survival of the AYA population, there is much work to be done. Cooperative groups such as COG have dedicated sections that are studying the biology and different therapeutic needs for the AYA population. Large cohort studies such as the Childhood Cancer Survivorship Study are expanding their cohorts to examine the late effects that may be seen by the AYA population. Dedicated AYA cohorts such as AYA Hope Study are following prospectively a group of AYA patients to determine outcomes of therapy along with psychosocial services that may be needed for this population. With studies that are dedicated to this vulnerable population, we hope to determine not only the best method of treating AYA cancers but also of improving their well being and survival.

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BONE MARROW/HEMATOPOIETIC STEM CELL TRANSPLANT PROGRAM

Children's Hospital/LSUHSC Pediatric Hematopoietic stem cell transplantation (HSCT) program is the only approved Children's Oncology Group (COG) transplant program in the state of Louisiana. It offers patients access to all COG transplant protocols without the need to travel far to get this life saving treatment.

We are also a full member of the Pediatric Blood and Marrow Transplant Consortium (PBMTC) which is the largest forum focused on Pediatric BMT and it is a core member of the NIH-funded BMT-CTN network. This affiliation allows our patients to participate in clinical trials aimed at improving the clinical outcomes of BMT.

The transplant patient is treated in the state-of-the-art 18-bed unit with a specialized HEPA air-filtration system. This special environment provides the severely immunocompromised transplant patients the best protection from opportunistic infections.

Our HSCT program applies a multidisciplinary approach to the care of the transplant patient. The HSCT team consists of a highly skilled team of board certified Pediatric Hematologists/Oncologists, Bone Marrow Transplant (BMT) trained nurses, dieticians, child life therapist, child psychologists, pharmacists, social workers, clinical research associates, physical therapists and transplant nurse coordinator.

Our HSCT program offers innovative treatment for children with cancer such as leukemia, lymphoma, neuroblastoma, brain tumors and other recurrent cancers as well as for children with non-malignant conditions including immunodeficiency disorders, bone marrow failure syndromes and blood disorders such as transfusion-dependent sickle cell disease and thalassemia major.

Under the leadership of Lolie Yu, M.D., director of the HSCT program, we performed the first human placenta-derived stem cell transplant (HPDSC) in the world in 2008. These HPDSC cells will be used for malignant and non-malignant conditions which can be cured with transplantation. The study is in collaboration with the cellular therapy section of Celgene. We also were the first transplant center in Louisiana to implement the use of Mesenchymal stem cells (MSC) to treat refractory graft versus host disease (GVHD).

Our HSCT is certified by the Foundation for the Accreditation of Cellular Therapy (FACT) for its high quality of patient care and HPC collection/processing laboratory performance. We are one of only 20 pediatric facilities in the U.S. to be FACT- accredited.

Our Pediatric HSCT program provides quality care that is designed to accommodate the full range of a child's unique needs with expertise in both autologous and allogeneic transplants. ■

TRANSPLANT BY DISEASE

ACUTE LEUKEMIA	**TOTAL**
AML/MDS	56
ALL	51
Other	14
SOLID TUMORS	
Lymphoma	25
Neuroblastomas	51
Brain tumor	16
Wilms	3
Histiocytosis	4
Sarcoma	11
Germ cell tumor	2
NON-MALIGNANT CONDITIONS	
BMF	47
Metabolic disorders	5
Immunodeficiency	25
Hemoglobinopathy	
Sickle cell	11
Thalassemia	2
TOTAL	**323**

CANCER PROGRAM EVENTS & FUND RAISERS

PROM OF CHAMPIONS

The Prom of Champions is dedicated to providing amazing events throughout the year to Children's Hospital New Orleans patients battling cancer and blood disorders, as well as support for their loved ones.

The night starts out with everyone arriving in limousines and being announced on the red carpet, where local celebrities greet them as they enter. The night is filled with dancing, singing, pictures, food and quite possibly the biggest candy table ever!

The 2013 Prom of Champions was held Friday, March 29, at Blaine Kern's Mardi Gras World, and would not have been possible without all of the donations and time that we received from our sponsors. A very big thank you goes out to Magnolia Holdings & G. Smith Motorsports.

JAZZ HALF MARATHON, 5K AND CHILDREN'S MEMORIAL CANCER WALK

Run each fall, the Jazz Half Marathon, 5K and Children's Memorial Cancer Walk was organized to raise awareness and support for the Cancer Program at Children's Hospital. New Orleans' NBC affiliate WDSU broadcasts four hours of race coverage, musical entertainment along the route, interviews and vignettes on the impact Children's Hospital's Cancer Program makes across the Gulf South and volunteers manning a phone bank of volunteers collecting pledges.

The 5th annual Jazz Half Marathon & 5K raised $309,685. The day got off to a great start with New Orleans Queen of Soul Irma Thomas addressing the runners and singing the National Anthem before the gun. Runners exerted their last bit of energy dancing to Shamarr Allen & the Underdawgs at the post-race celebration in Lafayette Square.

The Jazz Children's Cancer Walk, which recognized and remembered pediatric cancer patients, was added to the event this year. Several survivors were presented on stage to mass applause.

In addition to runners taking to the streets of New Orleans, several members of our Armed Forces serving overseas also participated in the run. On the Thursday before the race, several U.S. Marines based in Afghanistan participated in a shadow running of the race. Master Sgt. Marcelino Marquez, Jr., organized the event at Camp Leatherneck in Helmand Province. After hearing about the Marines' organizing a shadow race, Chief Warrant Officer Rob D. Gibbs of the U.S. Army set up a run at Camp Arifjan in Kuwait. We thank our service men and women for choosing to defend us, our rights and freedoms, and for going the extra 13.1 miles to help Louisiana children fighting pediatric cancer and blood disorders.

Major sponsors included The Grainger Foundation, Merrill Lynch, Budweiser, Bryan Subaru, Marriott, Varsity Sports, Kentwood Springs, Blue Bell Ice Cream, Superior Grill, Take 5 Oil Change, Your Nutrition Delivered, Jefferson Auto Service, Acadian Ambulance Service, Louisiana Health and Fitness Magazine and River Parish Disposal.

BACCHUS CROWNING

Each Carnival season, The Krewe of Bacchus crowns their celebrity monarch at Children's Hospital. Actor G.W. Bailey was crowned Bacchus XLVon the weekend before Mardi Gras. He stars on the TNT series Major Crimes, a spinoff of The Closer. He is executive director of the Sunshine Kids, a nationally recognized foundation dedicated to children with cancer.

The Krewe of Bacchus parade was founded in 1968 by a handful of New Orleans business leaders whose dream was to revolutionize Mardi Gras with larger and more spectacular floats, a more diverse membership, and a national celebrity as king. Bacchus staged their first parade in 1969 with 250 members and fifteen floats. Bacchus has now grown to 1,350 members and 33 animated super-floats.

HYUNDAI HOPE ON WHEELS

Hyundai's Hope on Wheels program presented a grant to Children's Hospital resident Matthew Fletcher, M.D., to help fund bone marrow transplantation research. During the visit, pediatric cancer patients

Prom of Champions

participate in the annual hand print ceremony, in which they dip the palm of their hand in paint and put their palm print on Hyundai's.Since 1998, Hope on Wheels has given $72 million to hospitals across the country, including $330,000 to CHNOLA over the last four years.

THOMAS MORSTEAD MATCHES TRIUMPH OVER KID CANCER FOUNDATION'S DONATION

New Orleans Saints punter Thomas Morstead matched a gift from the Triumph Over Kid Cancer Foundation, a non-profit organization founded in 2010 that raises money for pediatric cancer research, raising their total donation to $25,000. The funds will support the Oncology Department's provide critical cancer services to local children. Morstead was joined at the check presentation by foundation co-founder Mecklin Ragan, and board members John and Michelle Hennessy. For more information about Triumph Over Kid Cancer Foundation you can go to their website at www.TriumphOverKidCancer.org or check out their Facebook page.

TOUR DE LIS SUPPORTS LATE EFFECTS CLINIC

The very popular and successful Tour De Lis cycling event, held each spring, committs their support to the Treatment After Cancer and Late Effects Clinic. The group made a gift of $20,000 to help children who struggle with the after effects of the cancer treatments that saved their lives.

The late effects clinic offers a comprehensive follow-up program to help childhood cancer survivors stay well. Through case-specific diagnostic tests and evaluations, Children's Hospital's Late Effects Cancer Survivorship Center will be able to help patient families identify, understand, prevent and treat many of the maladies cancer survivors endure.

THE JEFF GORDON CHILDREN'S FOUNDATION AWARD

The Jeff Gordon Children's Foundation awarded a $2,000 grant to Children's Hospital's Late Effects Cancer Survivorship Center to help the growing number of Gulf South children who are beating cancer yet facing potential treatment-related problems.

In the past 40 years, medicine has made major advancements in the fight against pediatric cancer. A child diagnosed with cancer in 1970 had only a 10 percent chance of survival, whereas children diagnosed today have a nearly 80 percent chance. But for the more than 40,000 children who undergo treatment each year, their struggle does not end when their disease is eradicated.

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2011-2012

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GLOSSARY

Accession: To list in order of acquisition. An accession number is assigned to each new patient who is eligible for inclusion in the Cancer Registry database.

Allogenic: Having cell types that are antigenically distinct. In transplantation biology, denoting individuals (or tissues) that are the same species but antigenically distinct.

American Joint Committee on Cancer (AJCC): A committee designated to coordinate efforts of sponsoring organizations to develop staging systems for various cancers within the TNM system in the United States.

American College of Surgeons (ACoS): A fellowship of surgeons, organized in 1913 "to elevate the standard of surgery, to establish the standard of competency and character for practitioners of surgery," and, in general, to assure that surgeons are properly qualified.

Analytic Cases: Cases that are first diagnosed and/or receive all or part of their first course of treatment at Children's Hospital. In accordance with the American College of Surgeons guidelines for approved cancer programs, these cases must be accessioned, included in the patient index file, abstracted and followed for the lifetime of the patient by the Cancer Registry.

Autologous: Autogenous, related to self; originating within an organism itself.

Class of Case: A classification of treatment status determined by a reporting hospital. This classification is determined at the patient's first admission. Whether a case is included in the hospital's treatment and/or survival statistics depends upon the patient's classification.

Initial Therapy: Initial definitive treatment, or series of treatments, that normally modifies, controls, removes or destroys proliferating tumor tissue. This is usually initiated within the first four months (two months for leukemia) of diagnosis. Types of initial therapy include the list below:

Surgery: The partial or total removal of the tumor, excluding biopsy.

Radiation: Cancer-related direct beam and non-beam therapy. Non-beam includes radium, cesium and radioactive isotopes.

Chemotherapy: Includes antimetabolites, alkylating agents, vinca alkaloids and antibiotics, among other agents.

Hormone: Includes administration of hormones/steroids, and in some cases, endocrine surgery.

Combination Therapy: Includes possible combinations of surgery, radiation, chemotherapy and hormone therapy.

Immunotherapy: Passive immunization of an individual by administration of pre-formed antibodies actively produced in an individual.

No Treatment: A treatment option that includes cases in which no information was available or no treatment was received.

Non-Analytic Cases: Cases that were not seen at Children's Hospital within the first four months following diagnosis (two months for leukemia) or who were first diagnosed at autopsy. This class of case is usually not included in a report of hospital's treatment and survival statistics. In accordance with the American College of Surgeons guidelines for approved cancer programs, these cases must be accessioned and a patient index record prepared. Although abstracting and lifetime follow-up are encouraged, these are matters of local decision by the hospital cancer committee.

Stage: The extent to which a primary tumor has spread from its original site. The extent of disease is determined at the time of diagnosis and/or initial therapy.

Surveillance, Epidemiology and End Results Program **(SEER):** A registry conducted by the National Cancer Institute for the collection and analysis of data on the incidence and treatment of cancer and survival of cancer patients in the United States. A staging system was developed in 1977 by SEER and is approved for use in cancer registries by the American College of Surgeons Commission of Cancer.

Survival: All survival statistics were calculated using the actuarial or life-table method for observed survival rate. This method takes into account both patients with observations for varying lengths and patients lost to follow-up.

TNM: A staging system developed by the American Joint Committee on Cancer, in which T stands for the size of the tumor, N for lymph node involvement and M for metastasis.

RESOURCES

Children's Hospital Main Number .... (504) 899-9511
Oncology Department ..... (504) 896-9740
Oncology Department Fax ..... (504) 896-9758
Oncology Unit – inpatient ..... (504) 896-9442
Oncology – outpatient clinic..... (504) 896-9848
Neurosurgery Department..... (504) 896-9568
Social Services Department..... (504) 896-9367
Surgery Department..... (504) 896-9478
Orthopaedics Department..... (504) 896-9569
Medical Records/Tumor Registry.... (504) 896-9585
Administration ..... (504) 896-9450
Diagnostic Radiology..... (504) 896-9565
Pathology Department..... (504) 896-9873
Bone Marrow Transplant Program ... (504) 896-9740
Lolie C. Yu, MD
Cancer Committee Chairman..... (504) 896-9741
Cancer Program Liaison ..... (504) 896-9814
Matthew Stark,MD

CANCER INFORMATION/RESOURCES

American Cancer Society ..... (800) ACS-2345
American Cancer Society,
New Orleans Chapter..... (504) 469-0021
National Cancer Institute 1-800-4CANCER

CANCER INFORMATION WEB SITES

American Cancer Society, ... www.cancer.org
National Cancer Institute ..... www.cancer.gov
Children's Hospital, New Orleans..... www.chnola.org
National Childhood
Cancer Foundation ..... www.curesearch.org
Cancer Care..... www.cancercare.org
Cancer Surviors
Project ..... www.cancersurvivorsproject.org
National Children's
Cancer Society ..... www.children-cancer.com

FINANCIAL

Medicaid – Enroller ..... (504) 896-9152
Office of Family Security..... (504) 599-1700
Social Security ..... (800) 772-1213
Children's Hospital Assistance
Program (CHAP) ..... (504) 894-5166
American Cancer Society ..... (504) 469-0021
Leukemia/Lymphoma Society ..... (504) 887-0945
Optimist Leukemia Foundation ..... (800) 685-9611
J.L Foundation ..... (225) 698-1010
National Children's Cancer Society ... (314) 241-1600
Cancer Recovery Fund ..... (717) 564-4100
First Hand Foundation ..... (816) 201-1569
Cancer Association
of Greater New Orleans ..... (504) 733-5539
Total Community Action ..... (504) 304-6676
Kids Kicking Cancer ..... (504) 455-7754

HOUSING

Ronald McDonald House ..... (504) 468-6668
American Cancer Society Patrick F.
Taylor Hope Lodge ..... (504) 219-2202
Hotels – medical rates list available
in Social Services Department

WISHES

A Child's Wish ..... (504) 367-9474
Make-A-Wish ..... (504) 846-9474
A Special Wish ..... (614) 575-9474

SUPPORT

Candlelighters ..... (800) 366-2223
Sperm Bank Reproductive Services.. (504) 454-7973
Camp Challenge ..... (504) 347-2267
Sunshine Kids ..... (713) 524-1264
Caps for Kids ..... (504) 891-4277

MENTAL HEALTH

Rehabilitation Program/RTC..... (504) 483-0415
Via Link (24 hour counseling)..... (800) 749-2673
Angel's Place (Respite Care) ..... (504) 455-2620
COPELINE - Suicide Prevention ..... (800) 273-8255
Children's Hospital Behavioral Health Unit,
Calhoun Campus..... (504) 896-7200
Family Service of GNO ..... (504) 822-0800

DEATH

Compassionate Friends ..... (504) 454-5078
Seasons – The Center for Caring ..... (504) 834-1453
St. Joseph Hospice ..... (504) 734-0320
Serenity Hospice..... (504) 366-3996

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