

2011 Cancer Program Annual Report



Inspiring medicine. Changing lives.



Introduction by Thomas M. Hoeltgen, MD and James L. Weese, MD, FACS

A Message from the Cancer Committee Co-Chairs:

The last few years have been a time of tremendous growth in the Advocate Christ Medical Center Cancer Institute and cancer program. With the addition of services, new technologies, partnerships and cancer specialists to the Cancer Institute, Advocate Christ Medical Center has created a Cancer Program of prominence. We are very pleased to be able to offer superb quality and comprehensive services to our patients and their families. We are also pleased to have been rated by *US News and World Report* in July 2011 as a high-performing hospital in cancer.

We are proud to present the 2011 Annual Report highlighting 2010 data and the accomplishments of our team in providing progressive, innovative and leading-edge care for the sole benefit of our patients and community. We are most fortunate in having been able to attract nationally known physicians to our program to help strengthen our ability to diagnose, treat and care for our patients in the best possible way.

Highlighted below are some of the Cancer Program's accomplishments:

- Recruited Drs. James Weese (surgical oncologist gastrointestinal and hepatobiliary), Yvonne Collins (gynecologiconcologist), Adam Riker (surgical oncologist-melanoma, breast and sarcoma), M. Patrick Lowe (gynecologic-oncologist and robotic surgery), Richard Belch (gynecologic-oncologist), and Eloise Chapman-Davis (gynecologic-oncologist).
- Achieved Host Affiliate status with MD Anderson through the MD Anderson Physicians Network—requiring a rigorous evaluation of the quality of our hospital services and physicians' practices.
- Received a three-year accreditation with commendation from the American College of Surgeon's (ACoS) Commission on Cancer (CoC) in the 2009 survey. As a result, the Cancer Program received the ACoS CoC *Outstanding* Achievement Award.
- Received an award from Cianna Medical as a Center of Excellence for utilization of SAVI® instrumentation for partial breast irradiation.
- Established a multidisciplinary clinic for patients with breast cancer.

- Recruited patient navigators for gastrointestinal, lung, as well as one for our multi-disciplinary clinics which complement our previous breast navigation program.
- Hosted annual symposiums featuring advances in Breast cancer, gastrointestinal cancers and Gynecologic cancers with key note speakers from MD Anderson.
- Hosted an annual pediatric oncology symposium.
- Offered free monthly educational programs to the community as well as some screening programs.
- Became members of the Gynecologic Oncology Group (GOG) and Eastern Cooperative Oncology Group (ECOG) cooperative groups for clinical research.
- Partnered with the American Cancer Society to bring a Masters prepared social worker to the program to provide navigation services for patients and families.
- Collaborated with and was a major sponsor of the American Cancer Society Relay for Life and Making Strides against Breast Cancer events.

- Hosted "Paint the Town Pink"—a breast health community education offering.
- Hosted an annual Survivor's Day Luncheon Celebration with over 300 participants this year.
- Initiated a Genetics High Risk Assessment Program in 2008.
- Increased staffing in the Clinical Research department allowing for a significant increase in the availability of new clinical trials and patient enrollment in those trials.
- Oncology EMR approved as a system-wide initiative as a result of Advocate Christ Medical Center's cancer program in 2008.
- Poster presentation by pediatric oncologists at the American Society of Pediatric Hematology.
- Initiated a Survivorship Education series and received a Livestrong grant to lead a specialized 6-week series of educational program offerings for survivors.

- Tumor boards were expanded from breast, lung and CyberKnife® to include neurologic-oncology, hematologic malignancies, gastrointestinal, genitourinary and gynecologic-oncology in addition to a weekly MD Anderson Physicians Network video-conferenced tumor board.
- Received a \$240,000 grant from The Coleman Foundation to support the development of a Survivorship Clinic.
- The Center for Breast Care received recognition as a Center of Excellence by the American College of Radiology.
- The Hospital continues as an active participant in the Chicago Breast Cancer Quality Consortium.
- Participating in the Southwest Airlines Medical Transportation Grant Program where patients (and their caregivers) who qualify for free or reduced care under Advocate's charity care guidelines can receive airline tickets to fly to Texas to meet with the cancer specialists at MD Anderson®.

We have an exciting time ahead of us with the planned expansion of our campus and an entire floor dedicated to the Cancer Institute in the new ambulatory services building scheduled to open in October 2013. We sincerely look forward to the next year of challenges in meeting our patients' needs and providing world class care.

We congratulate and thank the medical staff, nurses, ancillary staff members and cancer registry team on their accomplishments during the past year. Our constant purpose is to bring the best treatments and services to our patients and their families. We hope you enjoy reading this report which underscores our relentless commitment to state-of-the-art personalized and individualized care.

Sincerely,

Thomas M. Hoeltgen, MD Co-Chair, Cancer Committee

Thomas Hoetteen, MD.

James L. Weese, MD

Medical Director, Cancer Institute

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Vice President of Clinical Transformation

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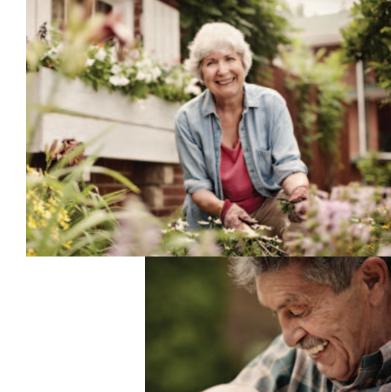
Patrice Stephens, MSN, APN, APN, Breast Health Specialist AOCN-BC

Deborah Stlaske, MSN, APN, APN, Gastrointestinal Cancer **AOCNS-BC**

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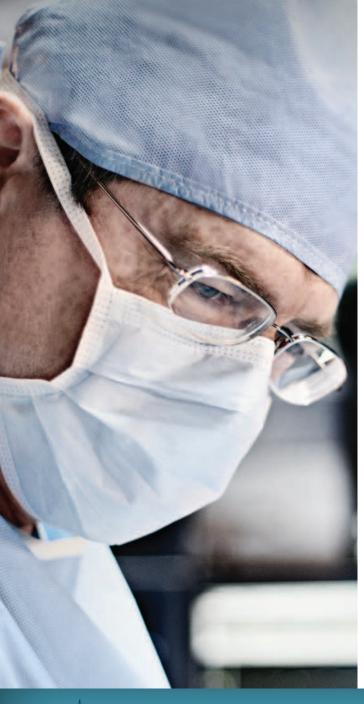
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In 2011, Advocate Christ Medical Center became the first site in the Advocate Health Care system to enter into an exclusive local affiliation with MD Anderson Physicians Network®.

As one of the nation's top 10 health systems, Advocate Health Care does more than provide top quality and compassionate care—it's also committed to collaborating/working with other leading hospitals, health and physician networks to ensure patients receive the best specialty care the country has to offer. In addition, Advocate Health Care treats more cancer patients than any other hospital or health system in the state.

MD Anderson Physicians Network® is a supporting organization of The University of Texas MD Anderson Cancer Center, one of the world's most respected leaders in cancer care. MD Anderson Cancer Center has been ranked No. 1 in cancer care in the United States by *U.S. News & World Report's* "America's Best Hospitals" survey for eight of the past ten years, including 2011.

Advocate Christ Medical Center is the only hospital in Illinois to establish an exclusive affiliation with MD Anderson Physicians Network®. The MD Anderson Physicians Network® affiliation is provided selectively to hospitals and their medical staff after undergoing an extensive evaluation process, guided by evidence-based treatment standards and quality management.

Advocate Christ Medical Center's affiliation with MD Anderson Physicians Network® will enhance and offer new hope for cancer care in our community. The Cancer Institute at Christ Medical Center will provide patients some of the world's most advanced treatment options developed, using MD Anderson's protocols.

Associates, nurses and physicians at the Cancer Institute also have access to extensive professional development programs offered by MD Anderson specialists, including multidisciplinary treatment planning conferences.

Affiliated with MD Anderson Physicians Network®

The University of Texas
MD Anderson Cancer Center







Breast Cancer Program

Advocate Christ Medical Center's breast cancer program has been available to patients for more than 10 years. It offers the latest in diagnosis, staging and treatment of breast malignancies. The breast cancer program is our most established program, with an exceptional team of caregivers led by Dr. Barbara Krueger, a board-certified surgeon specializing in breast surgery. To care for these patients, Dr. Krueger partners with our breast health specialist/advanced practice nurse, the first "patient navigator" at Christ Medical Center. The breast cancer team also features some of the most well respected specialists in their fields, including medical oncologists, radiation oncologists, plastic surgeons and genetic counselors. We are especially pleased to welcome Dr. Adam Riker, nationally renowned surgical oncologist specializing in breast surgery, melanoma and sarcoma. Our multidisciplinary approach to care provides patients with numerous options, depending upon the state of their disease and medical condition.

Established in October 2009 as the first Cancer Institute multi-disciplinary clinic, the breast clinic evaluated more than 200 patients and provided them with a recommended treatment plan for their specific type of breast cancer. Nowhere is our coordinated and integrated approach to care more apparent than in our multidisciplinary clinic. Patients diagnosed with breast cancer can be referred to this clinic for the purpose of obtaining a primary cancer evaluation or second opinion, or discussing the option of participating in clinical trials. The breast clinic's multi-specialty team includes a breast surgeon, medical oncologist, radiation oncologist, breast health specialist/ advanced practice nurse, a genetic counselor, a physician assistant and an oncology research nurse. The intent is to ensure that patients receive a complete consultation with every specialist in one day and that the results are communicated to the referring physicians. Plastic surgical consultation is also available. Our highly trained team at Christ Medical Center works together to create a customized treatment plan for each patient.





Thoracic Oncology Program

The thoracic cancer program at Advocate Christ Medical Center's Cancer Institute offers a comprehensive program to diagnose and treat patients. A multi-disciplinary approach is used to treat thoracic malignancies, with an emphasis on minimally-invasive techniques, leading-edge technology and extensive knowledge of cancer treatment options. The weekly interdisciplinary lung conference enables a team of board-certified pulmonologists, medical oncologists, radiation oncologists, thoracic surgeons, a pathologist, research nurse and advanced practice nurse to review each case and outline a course of treatment. Using evidence-based recommendations and approved national guidelines, the team creates a customized plan for each patient.

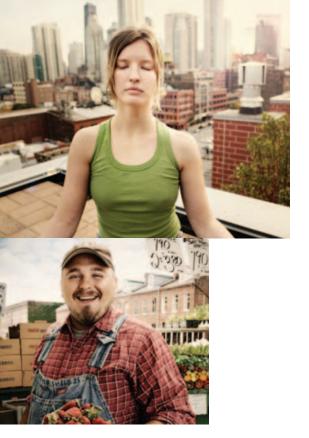
The thoracic oncology program is led by Paul Gordon, MD, FACS a board-certified thoracic surgeon. He is partnered by a lung health clinical nurse specialist. The clinical nurse specialist's role in the Cancer Institute is extremely critical. The nurse works with the lung cancer patients of the thoracic surgeons and other physicians to help them

"navigate" through the health care system and complex world of cancer care.

In the United States, lung cancer is the number one

cause of cancer-related deaths, killing more people every year than breast, prostate, colon and pancreatic cancers combined. Early diagnosis offers hope. The Cancer Institute at Advocate Christ Medical Center purchased an Electromagnetic Navigation Bronchoscopy (ENB). Using the patient's natural airways, the "superDimension i-Logic™ System" provides the ability to diagnose, stage and prepare to treat distal lung lesions in one procedure. The technology is comparable to GPS devices found in automobiles. ENB provides turn-by-turn navigation out to the peripheral nodule in the lung. Our Cancer Institute is the only hospital in Illinois combining Electromagnetic Navigation Bronchoscopy and CyberKnife® Radiosurgery in the treatment of lung cancer patients.

Our Cancer Institute is the only hospital in Illinois combining Electromagnetic Navigation Bronchoscopy and CyberKnife® Radiosurgery in the treatment of lung cancer patients.



Gastrointestinal (GI) Cancer Program

Under the leadership of nationally renowned surgical oncologist, Dr. James Weese, Advocate Christ Medical Center's gastrointestinal cancer program offers the very latest in diagnosis, staging and treatment of malignancies in the gastrointestinal tract. Our exceptional team of physicians features some of the most well respected and highly trained specialists in their fields, having pioneered procedures, therapies and treatment protocols. Our multi-disciplinary approach to care provides patients with numerous options, depending upon their state of disease and medical condition. From gastroenterologists and interventional radiologists to surgical and medical oncologists to radiation oncologists, the highly trained physicians at Christ Medical Center work together to create a customized treatment plan for each patient, considering conventional evidence-based therapy, clinical trials and investigational therapy.

Gastrointestinal cancer refers to malignancies of the gastrointestinal tract, including the esophagus, stomach, duodenum, pancreas, liver, gall bladder, biliary tract, small bowel, colon, rectum and anus. As is the case with colorectal cancer, the most prevalent gastrointestinal cancer and the third most commonly diagnosed cancer in the United States, early detection of gastrointestinal cancers can lead to better patient outcomes.

Using cutting-edge technology such as endoscopic ultrasound, gastroenterologists can detect and stage esophageal, pancreatic, stomach and hepatobiliary tumors that are less than a centimeter in size and that would otherwise be invisible on a Computed Tomography (CT) scan or Magnetic Resonance Imaging (MRI) image.

Our commitment to advancing the field of cancer research and improving outcomes in gastrointestinal cancer patients is of the utmost importance at Advocate Christ Medical Center's Cancer Institute. We participate in high priority national clinical trials in which patients can enroll, based on their illness and condition.

Our commitment to advancing the field of cancer research and improving outcomes in gastrointestinal cancer patients is of the utmost importance at Advocate Christ Medical Center's Cancer Institute.



Gynecologic Oncology Program

The gynecologic oncology interdisciplinary team treats cancers of the uterus (endometrium), ovary, trophoblastic tumors, cervix, vulva, vagina, peritoneum, and fallopian tube. The team provides comprehensive, multi-disciplinary care for women with known or suspected gynecologic cancer. There is a biweekly interdisciplinary conference to discuss these cases. Growth in our program has been evident with the number of newly diagnosed cases in 2010, at 152, in contrast to 114 in 2008.

Yvonne Collins, MD joined Advocate Christ Medical Center mid-year 2009 and has enhanced the scope and breadth of services available to patients. In addition, Drs. Patrick Lowe (noted robotics gynecologic-oncology surgeon), Eloise Chapman-Davis and Richard Belch joined the Cancer Institute in 2011.

Surgical procedures include radical pelvic exenteration, gastrointestinal, urological, and reconstructive surgery.

In conjunction with the Department of Radiation Oncology, the team develops treatment plans and places brachytherapy devices. Outstanding teamwork amongst the gynecologic oncologists, medical oncologists, surgical services and radiation oncology enabled these innovative modalities to be available to our patients.

Advocate Christ Medical Center participates in the Gynecologic Oncology Group (GOG), a national research organization funded by the National Institutes of Health to provide patients access to cutting-edge therapy. Enrollments in the GOG studies continue to rise.



Genitourinary (GU) Cancer Program

At Advocate Christ Medical
Center's Cancer Institute, patients
have access to the full spectrum of
treatment for genitourinary cancers,
including prostate, kidney, testicular,
penile and bladder. Our specially
trained physicians have completed
fellowships in oncology and
laparoscopic and robotic surgery,
and offer the very latest in
cancer treatments.

When a patient is diagnosed with a genitourinary cancer, experience matters. Urologists at the Cancer Institute see more newly diagnosed cases and perform more procedures than most medical centers in this area—more radical prostatectomies, more laparoscopic nephrectomies and more cystectomies. Our high volumes translate into better patient outcomes. Fellowship-trained urologists in Christ Medical Center's genitourinary cancer program perform laparoscopic and robotic resections, laparoscopic cryoablations and radiofrequency ablations to treat kidney tumors without large surgical incisions.

Urologists at the Cancer Institute are continuously utilizing less invasive treatments for prostate cancer that further improve patient outcomes. Advanced technologies such as the CyberKnife® Radiosurgery System and brachytherapy (radioactive seed implants) provide patients with much more targeted treatments without major surgery and long recovery times. High-intensity-focused ultrasound is another minimally invasive treatment and involves no incisions.

Our commitment to contributing to the expansion of knowledge and best practice treatment options is of the utmost importance at the Cancer Institute.



Our commitment to advance the field of cancer research and improve outcomes for neurological cancer patients is of critical importance at Advocate Christ Medical Center's Cancer Institute.

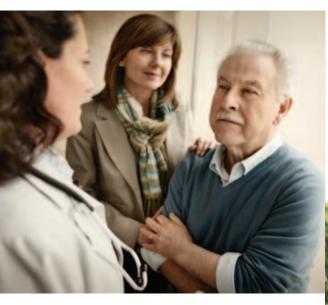
Neurologic Oncology Program

When faced with cancer, patients want the best possible treatment options and care available. Advocate Christ Medical Center offers just that in our neurologic oncology program. In collaboration with our highly advanced Neurosciences Institute, the neurologic oncology program offers a unique combination of advanced diagnostics, evidence-based care, clinical trials, cutting-edge treatment technology and an exceptional interdisciplinary team of neurologists, neurosurgeons, medical oncologists, radiation oncologists, advanced practice nurses in oncology, and a neuropathologist to treat neurologic cancers. This exceptionally trained team provides compassionate treatment for adult and pediatric patients with primary and metastatic brain tumors, spinal cord cancer, cancers of the nervous system and neurologic complications of cancer and its treatments.

This team approach, coupled with the latest in diagnostic and treatment technology, enables our institute to focus on providing the very best therapy and treatment options for our patients. Team members share a passion to do whatever is necessary for the patient and to make sure the patient is cared for in a timely and coordinated fashion. Neurologic-oncology case conferences are held regularly in order for the clinical caregivers to share findings, discuss collectively different approaches to care and coordinate a plan for the best treatment options.

Our commitment to advance the field of cancer research and improve outcomes for neurological cancer patients is of critical importance at Advocate Christ Medical Center's Cancer Institute. Therefore, we have invested in a clinical research department and participated in high priority national clinical trials in which patients can enroll, based on their illness and condition.

Nowhere is our coordinated approach to care more evident than within a multidisciplinary clinic setting.



Multi-disciplinary Clinics

Decisions about cancer treatment present a difficult challenge for patients, primary care physicians and specialists. When a patient feels a lump, has systemic symptoms, notes blood in their sputum or stools, or is given a definitive diagnosis of cancer, the patient's anxiety level increases markedly. It is at this time that the option of a multi-disciplinary cancer clinic becomes important to our patients, their families and physicians.

In 2009, we established the first of our multi-disciplinary clinics. The first clinic focused on breast cancer. This evaluation clinic offers patients the opportunity to be seen by multiple specialists in one day and to leave knowing what their team of experts recommends for treatment of their specific type of cancer.

In the upcoming year, other clinics will be established in the areas of gastrointestinal, lung, gynecologic and genitourinary cancers. Nowhere is our coordinated approach to care more evident than within a multidisciplinary clinic setting.



The visit to the clinic is coordinated by an advanced practice nurse (APN) who has expertise in oncology care. She ensures that the patient is evaluated in a timely manner by appropriate specialists. In addition, she confirms contact information, presents available treatment guidelines and clinical trials to physicians, and contacts the research nurse in order to discuss clinical trials where appropriate. The APN also assures that the referring physician is contacted at the conclusion of the clinic visit, and a preliminary report of the visit and recommended treatment plan is faxed or e-mailed to the referring physician's office.

The introduction of multi-disciplinary clinics is designed to provide a patient-centered, coordinated approach that will decrease time from diagnosis to definitive treatment, enable good communication amongst all treating physicians and reduce the anxiety level of the patients and families going through this challenging journey.



Genetics has a powerful role to play in the prevention and treatment of cancer. The causes and origins of cancer are multifactorial, involving the interaction of life-style, medical, environmental and genetic factors. The base of knowledge being gained in cancer genetics helps to improve our understanding of cancer biology, assists us in identifying individuals at risk for cancer, and aids in increasing our ability to characterize different cancers and establish treatment tailored to those findings. In summary, cancer genetics has an impact on all aspects of managing cancer—prevention, detection and treatment.

With this in mind, the Cancer Institute established a genetics division and a Genetics High Risk Assessment Program to support our cancer patients and their family members. For people who have a personal or family history of cancer, understanding and managing their risk for cancer is extremely important. Our program offers hereditary cancer risk assessments, genetic counseling and genetic testing performed by our specially trained and licensed genetic counselors. We provide information needed to make medical decisions about how to manage the risk for cancer.

In 2010, the genetic counselors saw over 200 new patients and provided consultation to those patients and their physicians. They attended the breast, gynecologic-oncology and gastrointestinal case conferences and offered expert opinions during case reviews. In addition, they provided 17 educational offerings throughout the year to a variety of audiences, including medical students, residents, physicians, support groups, nurses and the community at large.



Genetic Cancer Risk Assessment Program



The Pediatric Hematology/Oncology Program



Advocate Hope Children's Hospital is home to one of the largest, most comprehensive outpatient pediatric cancer programs in the Midwest. The pediatric hematology/oncology division at Advocate Hope Children's Hospital provides the latest advancements in diagnostic and treatment services for all childhood cancers, including leukemia, brain tumors, non-Hodgkins and Hodgkins lymphoma, neuroblastoma, tumors of the kidney, sarcomas and retinoblastoma. Treatment may include chemotherapy, radiation, surgery and non-commercial investigational agents available only through the National Cancer Institute.

As a member of the Children's Oncology Group (COG), an international research organization sponsored by the National Cancer Institute, the cancer division at Hope Children's Hospital offers patients the latest available treatment options and leading-edge therapies.

The program is under the direction of nationally renowned, board-certified physicians in pediatric hematology and oncology, Sharad Salvi, MD and Ammar Hayani, MD. In addition, Jason Canner, DO, and Rebecca McFall, MD work with the pediatric cancer team in providing outstanding care.

Our highly trained physicians also care for all pediatric hematological disorders, including thrombocytopenia, hemophilia, von Willebrand Disease, coagulapathies, hemoglobinopathies, leukopenia, neutropenia and all anemias. Most recently, a comprehensive Sickle Cell Clinic was established under the medical leadership of Dr. Jason Canner. Through the program's community outreach, education and leading-edge treatment innovations, 200 children and teens diagnosed with sickle cell are currently receiving the specialized care they need to manage their disease.

Our physicians and staff pride themselves on offering a family-centered, multi-disciplinary approach to all children. Complete care is provided with access to social workers, child life specialists, an in-hospital teacher, spiritual care support and psychosocial resources.



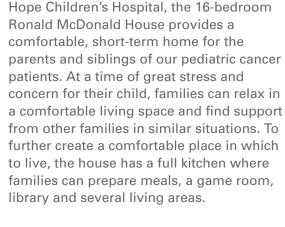
Advocate Hope Children's Hospital has a 22-bed inpatient cancer unit and three positive pressure rooms. There is also a 15-bed Pediatric Intensive Care Unit (PICU) available. A variety of services are offered to make a child's stay more comfortable while he or she is an inpatient receiving treatment. We have a child life department staffed by certified child life specialists who offer distraction methods, medical play and volunteer services for the children. A music therapist and an art therapist work closely with any child who may be interested in music or art as a complement to treatment. Pet therapy, offered once a week, give children an opportunity to interact with specially-trained dogs. There are also two age-specific playrooms where children can relax and have fun away from their room.

The Keyser Family Pediatric Cancer Center at Advocate Hope Children's Hospital is an 8,000-square-foot, state-of-the-art facility developed to deliver high quality outpatient care in a comfortable and healing environment. The outpatient pediatric oncology clinic features the following:

- Six examination rooms, a private consultation room, an in-house pharmacy, and a large patient/visitor waiting area
- The Logan Molenhouse Day Room, a large infusion treatment center with eight private treatment bays utilizing natural light and giving patients a view of the outdoors, which is integral to the healing process
- Large recliners, well-lit homework spaces, individual televisions, toys, video games, movies, crayons, art supplies and other activities to bring the comforts of home to the patients
- Child-friendly décor, including handpainted colorful ceramic tiles that adorn the walls of the cancer center and a 1,200-gallon exotic saltwater fish tank

Our physicians and staff pride themselves on offering a family-centered, multi-disciplinary approach to all children.

Improving the relationship between the child and his or her sick brother or sister can lead to a stronger connection and, therefore, a better quality of life for the patient as well as the entire family.



Located across the street from Advocate

A new program called "Planting Seeds of Hope" offered by child life services addresses the unique needs of the siblings of cancer patients. Although the program centers around the siblings, it helps to foster better relationships between the siblings and the entire family by working through feelings, such as resentment and fear. Improving the relationship between the child and his or her sick brother or sister can lead to a stronger connection and, therefore, a better quality of life for the patient as well as the entire family.

Other programs offered include the Pediatric Oncology Survivorship in Transition (P.O.S.T.) clinic. The P.O.S.T. clinic at Advocate Hope Children's Hospital is one of the most extensive pediatric cancer survivors support programs in the Midwest. It addresses the needs of patients treated for pediatric cancer who are survivors and have been off treatment for two to three years. A cornerstone of the program is to provide an annual general health screening for childhood cancer survivors per standard age recommendations.

The purpose of the P.O.S.T. clinic is to provide childhood cancer survivors with close medical follow-up in order to detect any health, psychosocial or developmental problems that may be a result of the cancer itself or the treatment received. Significant late effects can be subtle and may go unnoticed unless evaluated in a structured manner. The clinic educates survivors about potential problems and take steps to identify and treat them early if they do develop. The success of the P.O.S.T. clinic is largely dependent on the experiences and quality work of the P.O.S.T. clinic coordinator, Linda Rivard, RN, BSN, CPON. Linda is both a cancer survivor and parent of a survivor. She has dedicated herself to providing the most current Children's Oncology Group recommendations and therapies to all of our childhood cancer survivors and working with the team to assure healthy living.



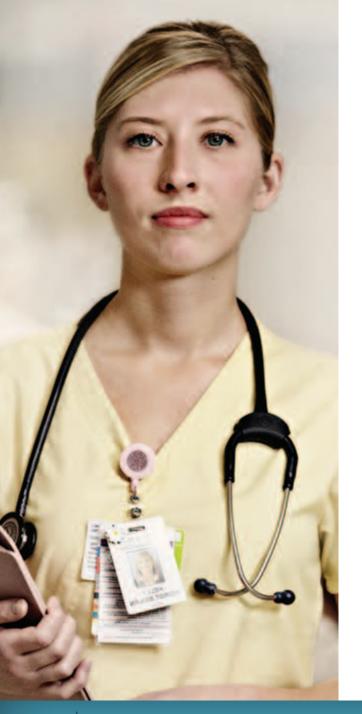


The H.O.P.E. School Program is committed to providing educational support to all school age patients ages 10 to 18. The staff strives to provide a sense of normalcy and consistency in patients' daily routines while staying within Hope Children's Hospital. A rich learning environment that is filled with trust, care, concern and respect in assisting all our patients and their families is provided.

It has been known that while hospitalized, many children succumb to a great deal of stress over

falling behind in their school work. Keeping school as a fundamental part of each child's life is important at Advocate Hope Children's Hospital.

Thanks to our new H.O.P.E. School Program, kids can continue that sense of "normalcy" in their lives. We know the importance of education in a child's life and want to help keep their routine as consistent and stress-free as possible.





Laurel Barbour, APN
Multi-disciplinary
Clinic



Patricia Mullenhoff, APN *Lung Cancer*



Deborah Stlaske, AP Gastrointestinal Cancer



Patrice Stephens, APN Breast Cancer

A diagnosis of cancer brings many challenges for patients and their loved ones. It is common to feel overwhelmed by the amount of new information and decisions to be made. Understanding of the "What comes next?" is where the disease-specific clinical nurse specialists at Advocate Christ Medical Center come into play. These advanced practice nurses, who have a disease-site-specialty are available to assist or navigate the patient with one-on-one support through the cancer experience. Some of their clinical responsibilities to patients include, but are not limited to:

- Assessing for clinical, emotional, spiritual, psychosocial, and financial needs
- Guiding through the complex treatment "maze" and lessening any confusion of the processes involved
- Eliminating barriers to care
- Ensuring patients receive a treatment plan that is understandable, feasible and within national guidelines

- Reinforcing patient education and directing patients and families to available and reliable resources
- · Facilitating access to clinical trials
- Providing information, history and films for multi-disciplinary conferences
- Helping to provide hands-on care and referrals for support services

The Cancer Institute has four "patient navigators," who act as liaisons between patients and the patient care team in order to help coordinate care and ensure all health care needs are met. These nurses include a breast health specialist, gastrointestinal specialist, a lung health specialist and an advanced practice nurse for the multi-disciplinary clinics.



Patient Navigation with Advanced Practice Nurses

Community Benefits





Advocate Christ Medical Center's Cancer Institute professionals strongly believe that community education and involvement are a vital part of our mission.

Support groups are available for people who are undergoing or have completed cancer treatment. At Advocate Christ Medical Center, there are groups focusing specifically on prostate and breast cancer.

Up-to-date, accurate information is crucial to making informed health care decisions. The Cancer Institute provides this via formal and informal health educational opportunities in the community. Members of the Cancer Institute regularly participate in health fairs throughout the surrounding communities. Doctors, nurses, dieticians and therapists all lend their expertise to educational sessions on campus

and in the community. An example of this is "Paint the Town Pink," a free breast cancer awareness and education program. This annual half-day program is held on campus for the public. It provides education, support and motivation for anyone interested in or affected by breast cancer.

The Cancer Institute believes that early detection is key to better outcomes. A free skin cancer screening was offered in May and October, and free prostate cancer screening was offered in September. For colon cancer awareness month in March, free take home screening kits were distributed, at a local library, several nearby pharmacies and on the medical center campus.

We strive to be a community resource by providing screenings, support groups and the latest health information.



The Advocate Christ Medical Center Cancer Institute's involvement in clinical trials provides access to a wide range of new, experimental drugs or treatments without having to leave the community for cancer care. Christ Medical Center manages a robust portfolio of clinical trials covering a vast number of disease sites and cancers. Most patients are referred to these clinical trials through their physician or disease-specific conferences, which are held on a regular basis. These meetings provide a forum where cancer care team members discuss patients and identify those who might potentially benefit from a clinical trial. Once the potential clinical trial is discussed with the patient, the patient makes the final decision about whether or not to participate.

Most of the clinical trials managed within the Cancer Institute each year are Phase III, which means that the study drug or treatment is given to large groups of people (1,000 – 3,000) to confirm its effectiveness, monitor side effects, compare it to commonly used treatments and collect information that will allow the drug or treatment to be used safely. Earlier phases of clinical studies are designed to evaluate safety, determine a safe dosage range, and identify side effects in smaller groups of people.

The Advocate Christ Medical Center Cancer Institute participates in studies sponsored by the National Cancer Institute through groups such as the Eastern Cooperative Oncology Group, the Radiation Therapy Oncology Group, the Gynecological Oncology Group, the National Surgical Adjuvant Breast and Bowel Project, and the American College of Surgeons Oncology Group.







Patient safety during the clinical trial is the first priority. Every clinical trial at Advocate Christ Medical Center must by law be approved and monitored by an Institutional Review Board (IRB) to make sure the risks are as low as possible and are worth any potential benefits. Clinical trials follow a carefully controlled protocol and study participants are monitored very closely. Participants have scheduled visits throughout the course of the study, and are seen regularly by the research coordinator and the research physician. The Cancer Institute

at Advocate Christ Medical Center strives to use research as a tool to increase its patient's options through clinical trials and increase the level of care through process improvement studies and evidence-based practice. By participating intensively in clinical trials, the Cancer Institute is advancing the body of knowledge in cancer medicine and making a difference in the lives of cancer patients.

Philanthropy Makes a Difference



Advocate Charitable Foundation builds relationships and partnerships to inspire charitable giving by individuals, foundations, corporations and organizations to Advocate Christ Medical Center and other Advocate hospitals. The Cancer Institute's Foundation Council raises philanthropic funds specifically to advance the medical center's clinical, educational, research, patient-support and outreach programs. The council comprises physician leaders, community members and business owners and serves in an advisory capacity.

Philanthropic support to the Cancer Institute increased by 40 percent in 2010, and the total number of donors increased by 103 percent. Over the past two years, the Foundation and the Cancer Institute have hosted two major fund raising events featuring the award winning shows of Billy Elliot and Memphis. The proceeds of these events have been utilized to support new services and programs for cancer patients. What follows are several highlights of how philanthropic funds were used to support the Institute's mission in 2010:

- A microscope camera with Internet capability enables surgical teams to send "live" video images between operating suites and pathologists in remote locations for immediate interpretation. A second camera enables pathologists to take still photos of tissue samples for use in powerpoint presentations, publications, and other educational materials.
- Women coming to the Institute's breast center can now use computer notebooks to complete a questionnaire about their family history with cancer. A special software program allows staff to analyze the results and identify women who may be at higher risk for breast cancer and who are then educated about measures they can take to potentially extend their lives.

- More than 200 area residents attended the Cancer Institute's annual breast-health awareness and education event, "Paint the Town Pink," which is offered free to the public.
- More than 300 survivors attended the annual Cancer Survivor's Luncheon celebration—another free program for our community.
- Patients of the Infusion Center and 3 South can enjoy the benefits of comfort with the two blanket warmers made possible by donated funds.



Now 14 years old, Logan Molenhouse was just 2 when a prolonged fever sent his family to a pediatrician. Initial blood work signaled something wasn't right, so his parents took him to Advocate Hope Children's Hospital, where he was diagnosed with B-lineage leukemia "Your world stops," says his father, Rick. "You hear the word leukemia, and all you know is that it's bad."

Under the care of a team led by director of pediatric oncology and hematology, Sharad Salvi, MD and his colleague, Ammar Hayani, MD, Logan began a two-year course of chemotherapy. Eventually, the cancer went into remission, but the struggle wasn't over. He suffered two relapses, which required progressively stronger chemotherapy and removal of an infected spleen to overcome.

The Molenhouses' sometimes overwhelming experience was tempered by the professional care and personal attention they received from physicians, nurses and other staff, whose compassion was genuine. "When one of our young patients relapses, it becomes emotionally tough for the physicians," says Dr. Salvi. "By that time, we've developed a relationship with the child and family."

Today, Logan continues to do well, and the extended Molenhouse family maintains a strong relationship with Advocate Christ Medical Center and Hope Children's Hospital. Rick serves on the medical center's Development Council, which works to build philanthropic support from the community. Logan's grandparents, Dick and Pixie Molenhouse, played a key role in making and securing the charitable gifts that made possible the Logan Molenhouse Day Room, an infusion treatment center, with eight private treatment bays, that provides a relaxing atmosphere for childhood cancer patients. Martin Ozinga III, another relative, serves on the Cancer Institute's new Foundation Council.

The entire family gets great satisfaction from knowing they're making a real difference for the people in their community. "That's what it's all about," says Dick Molenhouse, who was honored at the medical center's 2010 gala, along with Pixie, for their many contributions. "It's not just Logan; it's all the little kids going through the same thing. Your heart just goes out to them and their parents—and their grandparents!"



Logan's Heroes





Remission Accomplished



Several years ago, Pat Fisher of Stickney began experiencing symptoms of a serious illness. Her appetite and weight declined, she became bloated and constipated and was in terrible pain. "I could almost feel something growing in my abdomen," she says.

At the insistence of her worried daughter, Pat finally went to the emergency department at Advocate Christ Medical Center, nearly six months after she first started feeling sick. A CT scan revealed several large tumors in her ovaries, one of them wrapped around her large intestine. Within a few hours, she was admitted to the medical center's oncology unit, where she was quickly diagnosed with Stage III ovarian cancer—the most deadly of the gynecologic cancers because its vaque symptoms often enable it to progress undiscovered. "If she had waited any longer before seeking medical help, her outcome could have been much worse," says Dr. Amar Hamad, oncologist. "The cancer might have been incurable."

Pat was started almost immediately on two chemotherapeutic drugs to destroy

cancer cells throughout her body and shrink the tumors to an operable size. The medicines were delivered through a power port surgically implanted under her skin, preventing her from having to be "stuck" for each treatment and blood draws.

After only four six-hour treatments, a CT scan revealed that her tumors, remarkably, were gone. To minimize the possibility of any stray cancer cells remaining, gynecologic oncologist, the late, Michael Regan, MD, removed her ovaries, fallopian tubes, uterus, nearby lymph nodes and the tissue covering the intestines. "Hers was a very complex case requiring a major, delicate surgery and a team of specialists working together," says Dr. Hamad.

After her discharge from the hospital, Pat received preventative chemotherapy once every three weeks, in five-hour sessions, as an outpatient. She continues to be carefully monitored by Dr. Hamad, but all indications are good. All her blood tests, CT scans and pathology reports indicate that Pat's cancer is officially in remission. "It's like a miracle," she says.

Cancer Registry Data 2008 - 2010

Primary Site	2008	2009	2010
Breast	397	376	377
Lung	336	374	356
Colorectal	190	163	169
Prostate	90	92	80
Brain	86	105	78
Hematopoeitic	87	74	83
Other	623	654	713
Total	1,809	1,838	1,856

By participating intensively in clinical trials, the Cancer Institute is advancing the body of knowledge in cancer medicine and making a difference in the lives of cancer patients.

Cancer Incidence by Site: Comparison 2010

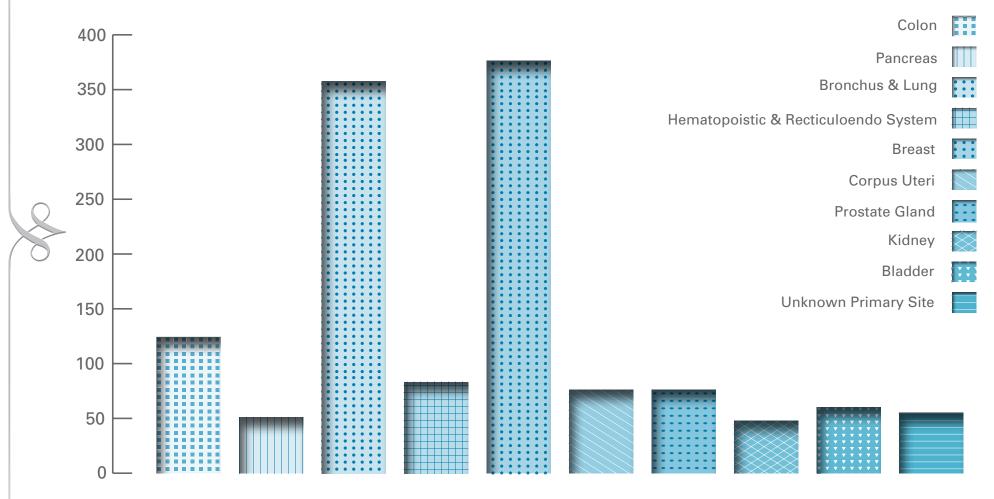
Female	Christ Medical Center	National
Breast	33%	28%
Lung/Bronchus	16%	14%
Colon/Rectum	7%	10%
Uterine Corpus	8%	6%
Non-Hodgkin's Lymphoma	2%	4%
Melanoma-Skin	2%	4%
Thyroid	3%	5%
Ovary	2%	3%
Kidney/Renal Pelvis	2%	3%
Leukemia	2%	2%
All Other Sites	24%	25%

Male	Christ Medical Center	National
Prostate	11%	28%
Lung/Bronchus	24%	15%
Colon/Rectum	13%	9%
Urinary Bladder	5%	7%
Non-Hodgkin's Lymphoma	4%	5%
Melanoma-Skin	3%	5%
Kidney/Renal Pelvis	4%	4%
Leukemia	4%	3%
Oral Cavity	3%	3%
Pancreas	3%	3%
All Other Sites	26%	18%



Program Statistics

Top 10 Primary Sites – 2010

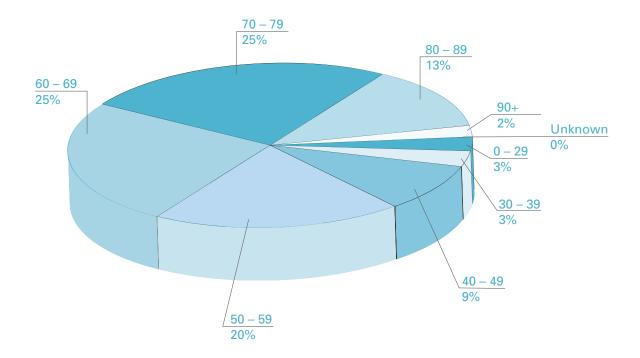


Age at Diagnosis

Age at Diagnosis (in years)	Count (N)	Percent (%)
0 – 29	67	3.61%
30 – 39	52	2.80%
40 – 49	161	8.67%
50 – 59	367	19.77%
60 – 69	463	24.95%
70 – 79	469	25.27%
80 – 89	243	13.09%
90+	30	1.62%
Unknown	4	0.22%
Total	1,856	100.00%

Range: 0 to 103

Mean: 63



Oral Cavity & Pharynx – 19 (3%)

Lung & Bronchus – 174 (24%)

Pancreas – 19 (3%)

Kidney & Renal Pelvis – 31 (4%)

Urinary Bladder – 35 (5%)

Colon & Rectum – 90 (13%)

Prostate – 80 (11%)

Non-Hodgkin Lymphoma – 30 (4%)

Melanoma of the Skin – 22 (3%)

Leukemia – 32 (4%)

Females

Males



Thyroid – 31 (3%)

Lung & Bronchus – 182 (16%)

Breast - 373 (33%)

Kidney & Renal Pelvis – 22 (2%)

Ovary - 26 (2%)

Uterine Corpus – 85 (7%)

Colon & Rectum – 79 (7%)

Non-Hodgkin Lymphoma – 22 (2%)

Melanoma of the Skin – 20 (2%)

Leukemia – 27 (2%)

All Other Sites – 188 (4%)

All Other Sites – 269 (24%)



Clinical Outcomes Report



Analysis of CyberKnife® Radiosurgery for Treatment of Non-Small Cell Lung Cancer

Paul J. Gordon, MD James L. Weese, MD, FACS Contributor: Christopher Blair

As the population of the world ages, there has been similar aging of patients presenting with non-small cell lung cancer (NSCLC). Of the 220,000 new cases of non-small cell lung cancer in the United States many will occur in patients who are either elderly or at high risk for surgery. In surgical candidates, lobectomy with lymphadenectomy remains the treatment of choice resulting in a 5 year survival rate of 80%¹. While approximately 20% of these high risk elderly patients are surgical candidates, many will not undergo surgical resection of their tumor. This inability to undergo surgery may be due to comorbidities associated with this patient population. Many times another factor is the patient's personal refusal of surgery and/or their ability to tolerate the pain and recovery associated with surgery. The risk factors which predispose these patients to lung cancer, especially tobacco use, also predispose them to multiple medical illnesses which make them poor candidates for surgery. Overall a significant number of stage I patients (30% - 60%) are medically inoperable secondary to comorbidities,^{2,3} the most common of which is COPD.4,5 In a recently reported series of patients

who were deemed high risk for surgery, there was a 54% five year survival after surgical resection. There was no observed operative mortality in this group and the major morbidity rate was only 14% in the high risk group. The morbidity and mortality were not significantly different than a low risk control population. Only 18% of these patients underwent lobectomy while 6% had segmentectomy and 76% underwent wedge resection.⁶

Prior to the development of Stereotactic Body Radiotherapy (SBRT), conventional radiotherapy was a preferred treatment alternative for stage one non-small cell lung cancer in nonoperative candidates. Conventional radiotherapy has not demonstrated good efficacy. In only 30 – 40% of patients is the primary tumor controlled with two-year survival of less than 40%.⁷⁻¹⁰

SBRT has emerged as a leading technique for treatment of NSCLC patients who fall into this high-risk category. SBRT can be performed with frameless and non-frameless techniques. Frameless SBRT such as CyberKnife® (Accuray Inc.,

Sunnyvale, CA) employs advanced imaging techniques which allow for tumor tracking and accurate treatment of a moving target volume. These techniques deliver radiation to the target volume along with a 5 to 10 millimeter additional treatment area. SBRT was associated with superior local control and overall survival. Prior studies of patients with non-small cell lung cancer who underwent wedge resection of NSCLC suggested a local and regional recurrence rate of approximately 15 – 18%. 11,12 Early series reporting the outcomes of patients undergoing SBRT for early stage non-small cell lung cancer do not suggest the same rate of regional recurrence but purport better regional control than the results of published surgical series.

Multiple studies have shown local control rates of early stage NSCLC with SBRT ranging from 85% to 98% and regional control rates of 86% to 95%. 13-19

In an attempt to document the efficacy of Stereotactic Body Radiosurgery in the treatment of early stage non-small cell lung cancer, a retrospective review of patients undergoing image guided frameless stereotactic body radiosurgery at our institution was undertaken.

Methods: Between August 2007 and November 2010, 122 patients underwent Stereotactic Radiosurgery for thoracic malignancy. 36 patients were found to have clinical T1 N0 M0 stage I Non–small cell lung cancer after full staging work-up including CT/PET scanning and biopsy. Due to co-morbidities they were deemed medically inoperable. Patients with a history of a prior malignancy were excluded. These 36 patients had an average age of 78 years with 28 females (78%) and 8 males (22%). 25 patients (69%) required fiducial tracking markers and 11 patients (31%) were treated

with computer tracking. The average dose delivered was 5336 centigray. The mode dose was 6000 centigray. 19 patients (53%) received 4 fractions and 17 patients (47%) were treated in 3 fractions. Patients were followed up every 3 months utilizing alternating Positron Emission Tomography (PET)/Computed Tomography (CT) scans and CT scans to assess local control of the treated tumor along with history and physical exam.

Results: Follow-up ranged from 3 to 39 months with a mean follow-up of 15 months. In follow-up, 31 patients (86%) were alive and 5 patients (14%) were dead (Figure 1). In 32 of 36 patients (88 %), the primary tumor was smaller or unchanged in size and in 4 of 36 patients (12%), the tumor had enlarged. In 7 of the 36 patients (19%), tumor progressed in a region outside the treatment area. There was no evidence of tumor in 23 of 36 patients (73%), while 10 of 36 patients (27%) had either local or distant treatment failure. As shown in Figure 2, local control was excellent with stereotactic body radiotherapy utilizing the CyberKnife® system for the treatment of early stage lung cancer. These results appear to be superior to external beam radiation therapy for the treatment of this patient population. Although our overall results do not appear to be as good as those with surgical staging and resection, our failures outside of the radiation field are suggestive of the approximately 1/3 of patients understaged by non-surgical techniques. When taking this into account, our early results appear to compare favorably with patients undergoing surgical resection without the inherent morbidity and mortality associated with operative management. We therefore believe that SBRT is an appropriate consideration for high risk, surgically inoperable patients with clinical stage I NSCLC.

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Overall Survival

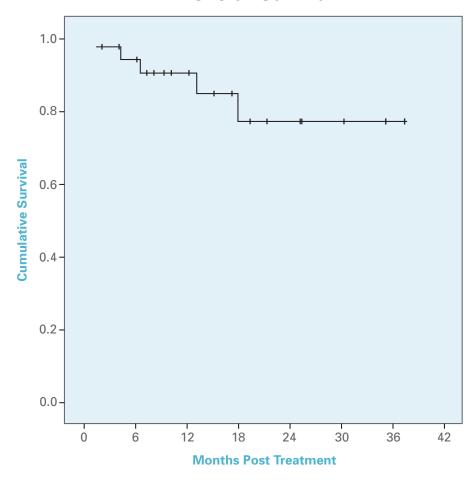


Figure 1: Survival of partients undergoing Stereostatic Radiosurgery for clinical stage I NSCLC

Freedom for Local Recurrence

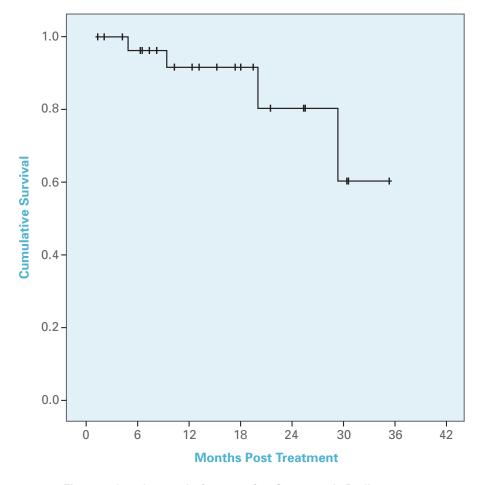


Figure 2: Local control of tumor after Stereostatic Radiosurgery for Clinical Stage I NSCLC

References

- 1. Cerfolio RJ, Bryant AS. Survival of patients with true pathologic stage I non-small cell lung cancer. *Ann. Thorac. Surg.* 2009;88(3):917-922; discussion 922-923.
- 2. McGarry RC, Song G, des Rosiers P, Timmerman R. Observation-only management of early stage, medically inoperable lung cancer: poor outcome. *Chest.* 2002;121(4):1155-1158.
- 3. Nyman J, Johansson K-A, Hultén U. Stereotactic hypofractionated radiotherapy for stage I non-small cell lung cancer—mature results for medically inoperable patients. *Lung Cancer*. 2006;51(1):97-103.
- 4. Paludan M, Traberg Hansen A, Petersen J, Grau C, Høyer M. Aggravation of dyspnea in stage I non-small cell lung cancer patients following stereotactic body radiotherapy: Is there a dose-volume dependency? *Acta Oncol.* 2006;45(7):818-822.
- Stephans KL, Djemil T, Reddy CA, et al. Comprehensive analysis of pulmonary function Test (PFT) changes after stereotactic body radiotherapy (SBRT) for stage I lung cancer in medically inoperable patients. *J Thorac Oncol.* 2009;4(7):838-844.
- Mery CM, Pappas AN, Bueno R, et al. Similar long-term survival of elderly patients with non-small cell lung cancer treated with lobectomy or wedge resection within the surveillance, epidemiology, and end results database. *Chest.* 2005;128(1):237-245.
- 7. Armstrong JG, Minsky BD. Radiation therapy for medically inoperable stage I and II non-small cell lung cancer. Cancer Treat. Rev. 1989;16(4):247-255.
- 8. Dosoretz, Katin, Blitzer, et al. Medically Inoperable Lung Carcinoma: The Role of Radiation Therapy. *Semin Radiat Oncol.* 1996;6(2):98-104.
- Kaskowitz L, Graham MV, Emami B, Halverson KJ, Rush C. Radiation therapy alone for stage I non-small cell lung cancer. *Int. J. Radiat. Oncol. Biol. Phys.* 1993;27(3):517-523.
- 10. Timmerman R, Paulus R, Galvin J, et al. Stereotactic body radiation therapy for inoperable early stage lung cancer. *JAMA*. 2010;303(11):1070-1076.
- 11. Ginsberg RJ, Rubinstein LV. Randomized trial of lobectomy versus limited resection for T1 N0 non-small cell lung cancer. Lung Cancer Study Group. *Ann. Thorac. Surg.* 1995;60(3):615-622; discussion 622-623.
- 12. Grills IS, Mangona VS, Welsh R, et al. Outcomes after stereotactic lung radiotherapy or wedge resection for stage I non-small-cell lung cancer. *J. Clin. Oncol.* 2010;28(6):928-935.

- Lagerwaard FJ, Haasbeek CJA, Smit EF, Slotman BJ, Senan S. Outcomes of risk-adapted fractionated stereotactic radiotherapy for stage I non-small-cell lung cancer. *Int. J. Radiat. Oncol. Biol. Phys.* 2008;70(3):685-692.
- 14. Onishi H, Shirato H, Nagata Y, et al. Hypofractionated stereotactic radiotherapy (HypoFXSRT) for stage I non-small cell lung cancer: updated results of 257 patients in a Japanese multi-institutional study. *J Thorac Oncol.* 2007;2(7 Suppl 3):S94-100.
- Fukumoto S-I, Shirato H, Shimzu S, et al. Small-volume image-guided radiotherapy using hypofractionated, coplanar, and noncoplanar multiple fields for patients with inoperable Stage I nonsmall cell lung carcinomas. *Cancer*. 2002;95(7):1546-1553.
- 17. Brown WT, Wu X, Amendola B, et al. Treatment of early non-small cell lung cancer, stage IA, by image-guided robotic stereotactic radioablation—CyberKnife®. *Cancer J.* 2007;13(2):87-94.
- Nagata Y, Takayama K, Matsuo Y, et al. Clinical outcomes of a phase I/II study of 48 Gy of stereotactic body radiotherapy in 4 fractions for primary lung cancer using a stereotactic body frame. *Int. J. Radiat.* Oncol. Biol. Phys. 2005;63(5):1427-1431.
- 19. Xia T, Li H, Sun Q, et al. Promising clinical outcome of stereotactic body radiation therapy for patients with inoperable Stage I/II non-small-cell lung cancer. *Int. J. Radiat. Oncol. Biol. Phys.* 2006;66(1):117-125.
- 20. Onishi H, Kuriyama K, Komiyama T, et al. Clinical outcomes of stereotactic radiotherapy for stage I non-small cell lung cancer using a novel irradiation technique: patient self-controlled breath-hold and beam switching using a combination of linear accelerator and CT scanner. *Lung Cancer*. 2004;45(1):45-55.
- 21. Lanni TB Jr, Grills IS, Kestin LL, Robertson JM. Stereotactic radiotherapy reduces treatment cost while improving overall survival and local control over standard fractionated radiation therapy for medically inoperable non-small-cell lung cancer. *Am. J. Clin. Oncol.* 2011;34(5):494-498.
- 22. Nguyen NP, Garland L, Welsh J, et al. Can stereotactic fractionated radiation therapy become the standard of care for early stage non-small cell lung carcinoma. *Cancer Treat. Rev.* 2008;34(8):719-727.





A caring and compassionate nurse, a loving mother and our colleague and friend.

She will be greatly missed.

March 3, 1953 – October 14, 2011



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