

Carole and Ray Neag Comprehensive Cancer Center

Mission Statement

The Mission of the Carole and Ray Neag Comprehensive Cancer Center is to:

- Provide high quality comprehensive cancer care.
- Reduce the incidence and mortality of cancer.
- Achieve excellence in research, education and community outreach.
- Train and develop future leaders in basic, translational and clinical cancer research.

2008
Cancer Program Annual Report
*With Statistical Data from 2007

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2007 Cancer Committee Membership

Physician Members

Dr. John Taylor III	Cancer Committee Chairman
Dr. Helaine Bertsch	Radiation Oncology
Dr. Lawrence Briggs	Radiology
Dr. Robert Dowsett	Radiation Oncology
Dr. Ellen Eisenberg	Educational / Cancer Conference Coordinator
Dr. Richard Everson	MPH, Assistant Professor of Medicine
Dr. Malon Hale	Psychiatry
Dr. Upendra Hegde	Quality Assurance of Registry Data Coordinator
Dr. Jack Nash	Performance Improvement Coordinator
Dr. Melinda Sanders	Pathology
Dr. Carolyn Runowicz	Director of Carole & Ray Neag Comprehensive Cancer Cancer
Dr. Lori Wilson	AcoS CoC Cancer Liaison Physician, Community Outreach Coordinator

Non-Physician Members

Sheri Amechi	CTR, Cancer Registry
Melissa Arsenault	RN, Carole & Ray Neag Comprehensive Cancer Center
Nancy Baccaro	APRN, Breast Cancer Program Coordinator, Palliative Care
Mary Ann Brown	Medical Records
Maureen McGuire	Communications
Maggie Nellisery	Research
James Thibeault	Signature Programs
Lisa Uguccioni	American Cancer Society

The Cancer Committee meets bi-monthly beginning in January. The meetings are held in the Carole and Ray Neag Comprehensive Cancer Center Conference Room at 7:00 a.m.

2008 Cancer Program Annual Report

The Carole and Ray Neag Comprehensive Cancer Center is committed to providing expert compassionate care through a comprehensive range of state-of-the-art cancer services in a multidisciplinary team approach setting.

Our team of dedicated, experienced providers are experts in the fields of medical and surgical oncology, gynecologic oncology, hematology and radiation oncology. Within the walls of the Cancer Center, patients have the added benefit of seeing physicians with expertise in the fields of breast health, endocrine neoplasia, and hemophilia, reconstructive surgery, integrative and complementary medicine. Special areas of expertise also include the treatment of breast gastrointestinal and head and neck cancers. Specialists in melanoma work closely with the nationally recognized leaders from UConn's Dermatology program. Experts in Geriatric Oncology address the special needs of this population.

Supportive services such as oncology nursing, social and nutritional services, pastoral care and genetic counseling are all part of the services provided by the Carole and Ray Neag Comprehensive Cancer Center. In addition cancer screenings, public education, and other free services are provided to ensure the highest standard of care for patients, families and the community.

Research is the cornerstone of all activity at the Carole and Ray Neag Comprehensive Cancer Center. Our basic scientists, clinical researchers, epidemiologists and cancer specialists are working to discover innovative new ways to prevent, diagnose and treat cancer. Because of this, our patients have the unique opportunity to participate in research studies developed at the Health Center as well as those studies conducted regionally and nationally.

<http://cancer.uhc.edu/about/index.html>

UConn Is First in State to Offer TomoTherapy **A Revolutionary New Cancer Treatment!**

UConn Health Center now offers patients a revolutionary new cancer treatment, the TomoTherapy® Hi-Art® treatment system.

The Health Center is the first facility in Connecticut to offer this innovative new treatment to patients!

TomoTherapy is an effective treatment for head and neck cancer, prostate cancer, brain cancer and others. Its advanced system:

- Acquires 3D images of tumors before every treatment.
- Delivers precise treatments in rotating beams of radiation that constantly modulate to the exact size and shape of the tumor.
- Targets large, small and multiple lesions.
- Minimizes radiation to healthy tissue.
- Provides the most advanced and integrated cancer treatment system available today.

“This technology fits in perfectly with our mission and vision to provide state-of-the-art care to the residents of Connecticut and throughout the region,” explains Carolyn D. Runowicz, M.D., director of the Carole and Ray Neag Comprehensive Cancer Center, chair of the National Cancer Advisory Board and former president of the American Cancer Society.

“Precision and accuracy can make a big difference in treating some tumors that are adjacent to critical organs, such as the brain, head and neck, and prostate,” said Robert Dowsett, M.D., chief of the Division of Radiation Oncology at the Health Center. The TomoTherapy system is housed within the Health Center’s newly renovated, state-of-the-art Radiation Oncology center.

Before a patient receives TomoTherapy, a detailed three-dimensional image is taken of the area being treated. The physician then uses special software to “paint” on the image, identifying specific regions to receive radiation, and those areas to remain untouched.

Unlike previous technologies that use wide bands of radiation from a limited choice of directions, TomoTherapy uses rotating narrow “pencil” beams of radiation to treat the tumor from all sides, with variable intensity.

This exciting new advancement was made possible by a generous donation from Connecticut natives Carole and Ray Neag, who have a long history of support to the Health Center and the university.

The Neag's say that their interest in TomoTherapy stems from Mrs. Neag's radiation treatments, and their desire to put the Health Center at the forefront of cancer research and technology.

Among their many contributions, the Neag's gave \$10 million for the cancer program at the Health Center in 2004. Named in their honor, the Carole and Ray Neag Comprehensive Cancer Center's ultimate goal is to create a world-class program that transforms cancer treatment. The new system furthers that goal.

<http://tomotherapy.uchc.edu/>

2007 Cancer Related Programs

January 30, 2007	Lung Cancer: Facts, Choices & Hope Dr. Tannenbaum, Dr. Foley, Dr. Fusco
February 16, 2007	Ovarian Cancer Prevention: What you need to Know Dr. Molly Brewer
March 21, 2007	Parathyroid Disorders Dr. Beatriz Tendler
April 12, 2007	Benefits of Mind, Body & Spirit Medicine in Treating Cancer Patients Dr. Karen Prestwood
May 14, 2007	Free Breast Exams / Pap Tests Nancy Kalagher APRN
May 16, 2007	6 Prevention Displays / Osteoporosis / Melanoma Screenings Mary Kinahan, NP
June 13, 2007	Melanoma Screenings Karen Slade
June 27, 2007	Melanoma Screenings Karen Slade
July 10, 2007	Ovarian Cancer Prevention: What you need to Know Dr. Molly Brewer
August 13, 2007	Ovarian Cancer Prevention: What you need to Know Dr. Molly Brewer
September 11, 2007	Prostate Health Dr. Peter Albertsen, Dr. Robert Dowsett
September 25, 2007	Women's Cancers Dr. Molly Brewer, Jennifer Stroop, Stacey Cruess
September 26, 2007	Complimentary Medicine and Cancer Treatment Dr. Lori Wilson, Dr. Guha, Dr. Kennedy & Dr. Simmons
October 10, 2007	A Passion to Lead: 7 Leadership Secrets for Success UCONN Men's Basketball Coach Jim Calhoun
October 11, 2007	Celebrate Women Spirituality Study Group Kathleen Kiley

October 18, 2007

Breast Health in Adolescent Girls

Dr. Lori Wilson, Nancy Baccaro, APRN, Pam Miller & Dr. Caffey

November 8, 2007

Ovarian Cancer: Hope through Research

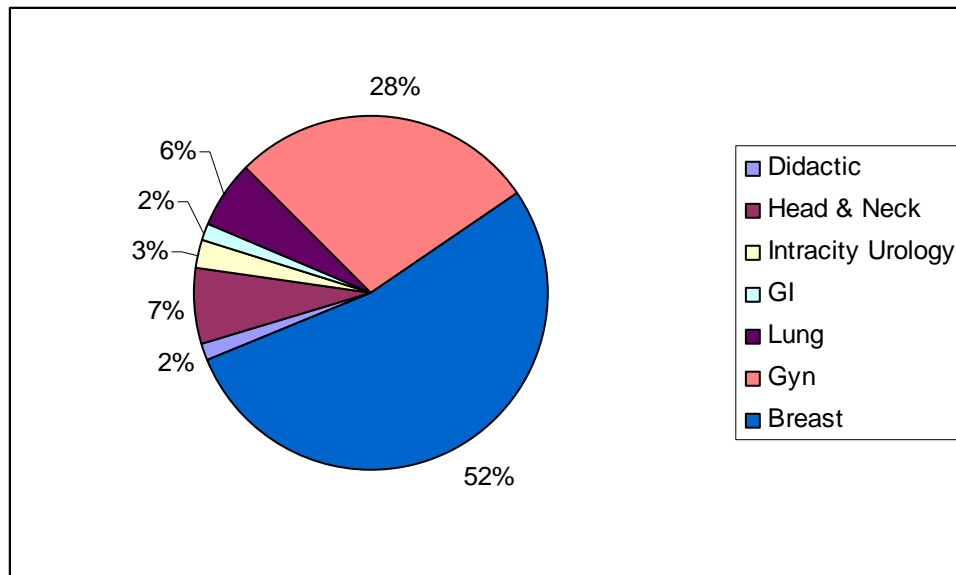
Dr. Molly Brewer, Dr. James Egan

December 4, 2007

Changes in your skin and Mohs Surgery

Dr. Hanspaul Makkar

2007 Cancer Conferences



John Dempsey – University of Connecticut Health Center continues to hold multidisciplinary patient oriented conferences and provide consultation on treatment alternatives for new and follow up patients. These conferences are held weekly and are attended by representatives from Medicine, Medical Oncology, Otolaryngology, Pathology, Radiation Oncology, GYN Oncology, Diagnostic Radiology, General Surgery, Genetics, Nursing, Social Work, Rehabilitation Services and the Cancer Registry.

In 2007, there were 600 cases presented at our Cancer Conferences. This represented 72% of all the analytic cases for 2007.

During each conference, cases were presented to a multidisciplinary team in which discussions took place regarding diagnosis, staging of disease and treatment options. Available clinical trials were also discussed if applicable.

The Collaborative Clinical, Basic and Translational Research Forums continued to take place in 2008, serving as two didactic lectures for the Cancer Center.

Cancer Registry

The Cancer Registry staff continue to collect, manage, analyze and disseminate information on all cancer patients diagnosed and or treated at John Dempsey Hospital – University of Connecticut Health Center. The data collected include demographic information, patient medical history, diagnostic findings, cancer information, cancer staging, cancer treatment and cancer outcomes. This data collected is used to assist in evaluating diagnostic and therapeutic efforts. The data is also used to assess the quality of care provided to cancer patients in accordance to the Commission on Cancer. The monitoring of the Cancer Registry is done in accordance with the requirements of the following regulatory agencies, The Department of Public Health, Connecticut Tumor Registry, The SEER Program of the National Cancer Institute (NCI), and the Commission on Cancer (CoC) of the American College of Surgeons (ACoS). The reference date of the Cancer Registry remains at January 1, 1989.

The primary functions of the Cancer Registry are to register all patients with malignant neoplasm's and benign tumors of the brain and central nervous system, to conduct lifetime follow-up on analytic patients within the registry database and to provide cancer information to staff physicians, hospital administrators and hospital researchers. All cancer information collected is then submitted to the State of Connecticut Tumor Registry located in the Department of Public Health per Public Health Code 19a-73-1 to 19a-73-7. The State Tumor Registry is a population –based registry and is a member of the Surveillance, Epidemiology and End Results Program (SEER) of the National Cancer Institute. Confidentiality of patient identification information is strictly maintained. Individuals are not identified in any reports from the Cancer Registry.

The Cancer Registry accessioned 826 (58%) analytic cases in 2007 and 599 (42%) non-analytic cases bringing the total number of cases accessioned in 2007 to 1425 cases. Analytic cases are those cases that were first diagnosed and / or received all or part of their first course of treatment at John Dempsey Hospital – University of Connecticut Health Center; non-analytic cases are those whom were seen for recurrent or progressive disease. The top five primary sites for our facility in 2007 were: Melanoma, Breast, Prostate, Head & Neck, and Digestive system. These five major sites accounted for 60% or all analytic cases accessioned in 2007.

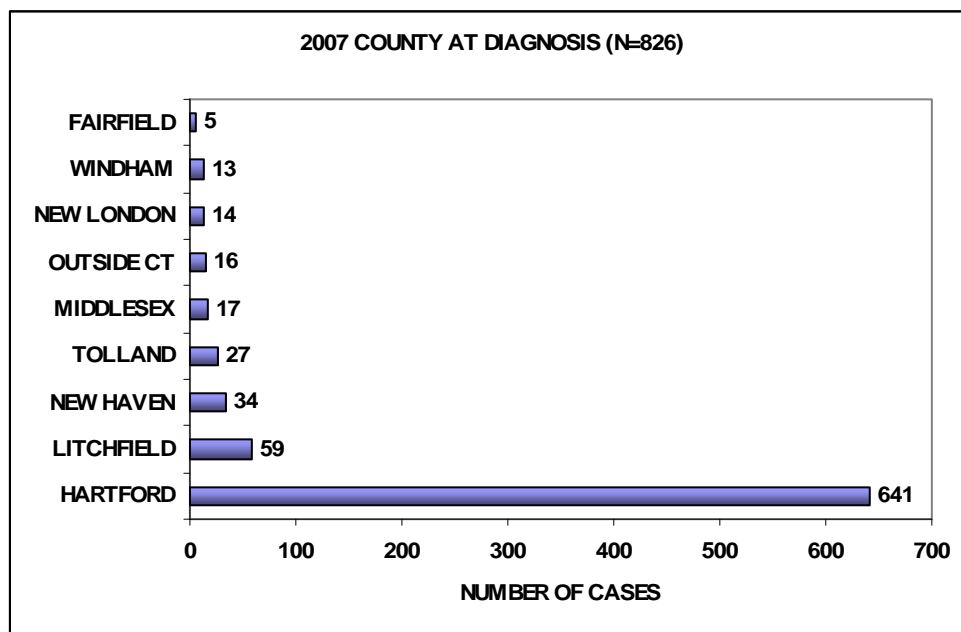
As in past years, the John Dempsey Hospital – University of Connecticut Health Center participated in the 2008 call for data by the National Cancer Database (NCDB) of the ACoS Commission on Cancer. The Cancer Registry submitted patient data for years 1992, 1997, 2002 and 2007. All years were submitted free of any errors. The benefits of participating include an annual review of patient care nationally, a general summary report of our hospital's patterns of care for comparison to the national data and data edit reports to ensure quality of our

cancer data. The NCDB provides a useful benchmark for patient care and continuous quality improvement efforts for the John Dempsey Hospital – University of Connecticut Health Center Cancer Program. This data evaluates therapies and their outcomes, which may assist in better treatment strategies for cancer patients.

Cancer Registry data is reviewed by a physician member of our Cancer Committee. The accuracy of the data, the timeliness and quality of data are evaluated. The Quality of the 2007 data was completed with 10% of our analytical caseload being reviewed.

The following pages contain statistical reports that are based only on the 826 analytic cases.

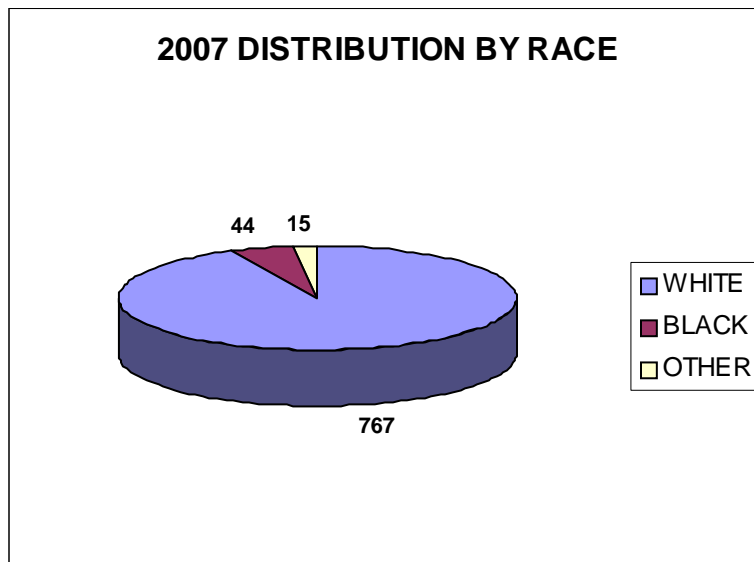
2007 County at Diagnosis



Geographically, most of our newly diagnosed patients reside in Hartford County. There were 641 patients in 2007 from Hartford County. The County breakdown is as follows:

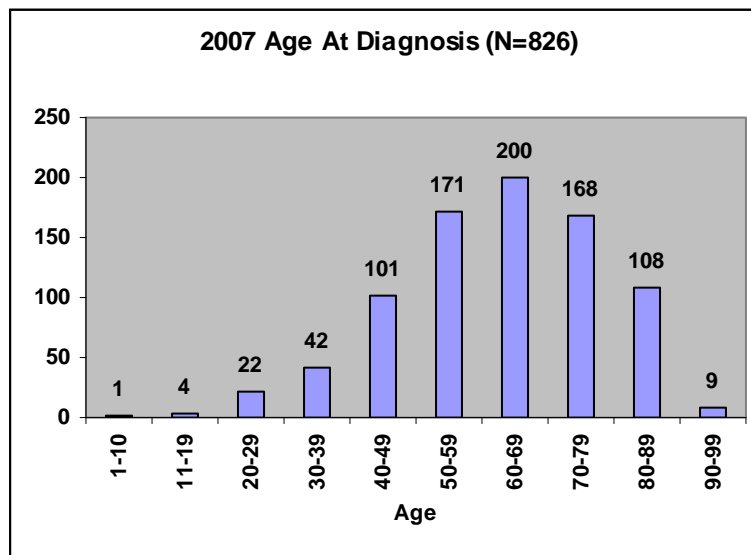
Hartford County	641 patients	78%
Litchfield County	59 patients	7%
New Haven County	34 patients	4%
Tolland County	27 patients	3%
Middlesex County	17 patients	2%
New London County	14 patients	2%
Windham County	13 patients	2%
Fairfield County	5 patients	1%
Outside of CT	16 patients	2%

2007 Distribution by Race



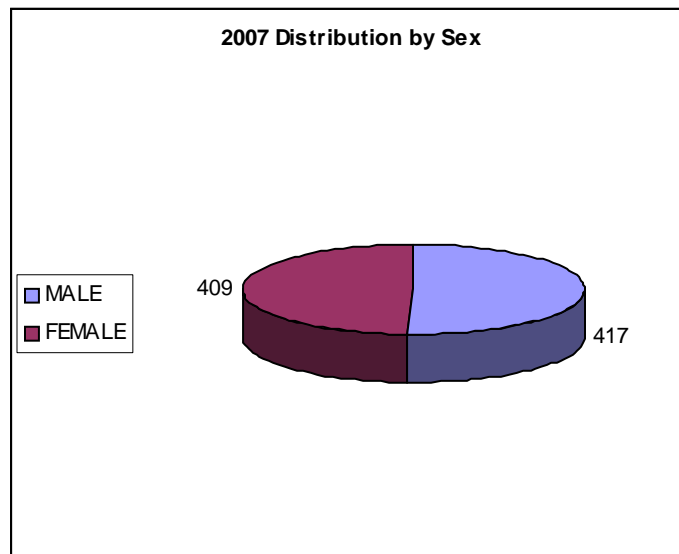
In 2007, the racial distribution was as follows: there were 767 patients whom were Caucasian. These patients represented 93% of our analytic cases. 44 patients whom were African American, these patients represented 5% of our analytic cases. 15 patients listed other as their race as other and they represented 2% of our analytic cases.

2007 Age at Diagnosis



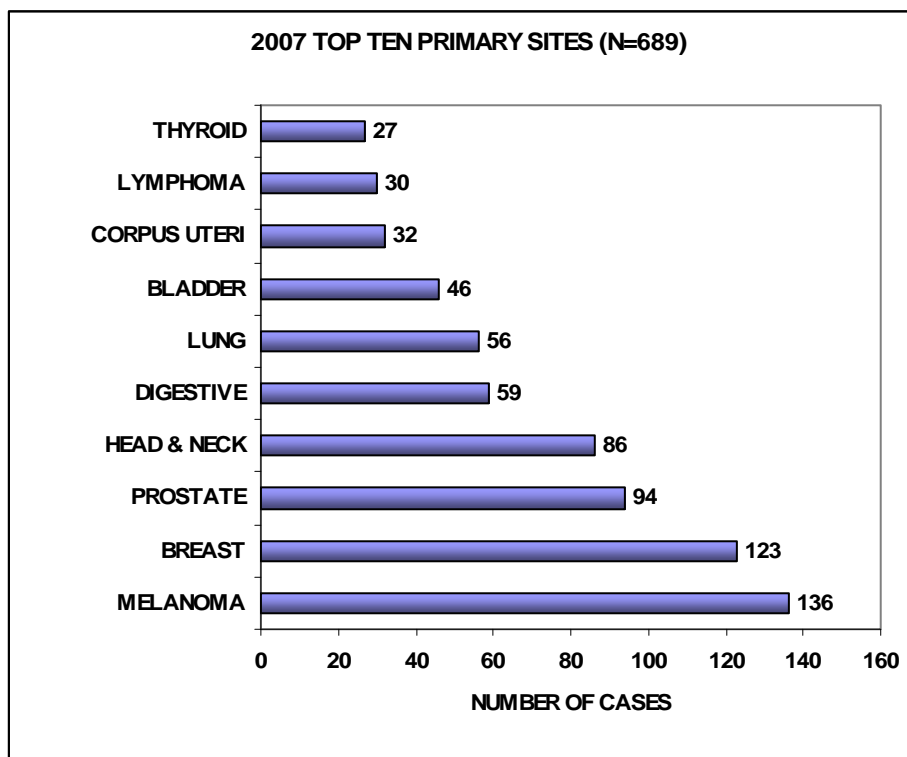
The mean age of diagnosis in 2007 was 62 years of age with patients ranging from age 8 to age 95. Malignancies occurred most often in the 5th, 6th and 7th decades of life.

2007 Patient Distribution by Sex



Total number of males and females in 2007 were almost even. There were 417 males representing 51% of the analytic caseload and 409 females representing 49% of the analytic caseload.

2007 Top Ten Primary Sites



There were a total of 689 cases for the 2007 top ten primary sites. Malignant Melanoma led the list of malignancies diagnosed in 2007. The breakdown is as follows:

Malignant Melanoma	136 cases	20%
Breast Cancer	123 cases	18%
Prostate Cancer	94 cases	14%
Head & Neck Cancers	86 cases	12%
Digestive Cancers	59 cases	9%
Lung Cancer	56 cases	8%
Bladder Cancer	46 cases	7%
Corpus Uteri Cancer	32 cases	5%
Lymphoma	30 cases	4%
Thyroid Cancer	27 cases	3%

		Sex		Class		AJCC Stage Group						
Primary Site	Total	M	F	Analy	NA	0	I	II	III	IV	88	Unk
Oral Cavity	108	69	39	64	44	2	10	8	13	16	3	12
Esophagus	5	3	2	4	1	0	0	1	1	2	0	0
Stomach	9	6	3	8	1	0	1	1	2	2	2	0
Small Intestine	1	0	1	1	0	0	0	0	0	1	0	0
Colon	24	17	7	24	0	6	4	3	5	3	1	2
Rectum & Rectosigmoid	6	4	2	6	0	0	1	0	1	2	1	1
Anus	2	1	1	2	0	0	1	0	0	0	0	1
Liver	3	3	0	3	0	0	0	0	2	0	0	1
Other Biliary	3	2	1	2	1	0	0	2	0	0	0	0
Pancreas	9	6	3	9	0	0	0	0	2	7	0	0
Retroperitoneum	1	0	1	1	0	0	0	0	0	0	1	0
Peritoneum, Omentum & Mesentery	1	0	1	1	0	0	0	0	0	0	1	0
Nasal Cavity	4	2	2	3	1	0	0	0	1	2	0	0
Larynx	20	15	5	19	1	0	9	3	6	1	0	0
Lung & Bronchus	69	34	35	56	13	1	11	1	12	27	1	3
Bones & Joints	6	3	3	6	0	0	1	1	0	0	1	3
Soft Tissue inc heart	11	6	5	8	3	0	1	1	2	1	1	2
Melanoma	553	300	253	136	417	50	65	13	3	2	0	3
Other Skin	5	3	2	2	3	0	0	0	0	0	1	1
Breast	157	1	156	123	34	23	57	29	4	4	0	6
Cervix Uteri	5	0	5	3	2	1	1	0	0	0	0	1
Corpus & Uterus, NOS	42	0	42	32	10	0	15	2	13	1	1	0
Ovary	25	0	25	16	9	0	3	0	6	5	0	2
Vagina	5	0	5	4	1	3	0	1	0	0	0	0
Vulva	12	0	12	10	2	6	1	0	2	1	0	0
Other Female Genital Organs	3	0	3	3	0	0	1	1	0	0	0	1
Prostate	113	113	0	94	19	0	0	76	7	6	0	5
Testis	3	3	0	3	0	0	2	1	0	0	0	0
Penis	2	2	0	2	0	0	1	0	0	0	0	1
Bladder	59	45	14	46	13	14	12	6	7	5	2	0
Kidney & Renal Pelvis	19	17	2	17	2	0	6	3	3	5	0	0
Ureter	2	1	1	1	1	0	0	0	1	0	0	0
Other Urinary Organs	1	0	1	1	0	0	1	0	0	0	0	0
Brain	15	6	9	12	3	0	0	0	0	0	12	0
CNS	10	6	4	9	1	0	0	0	0	0	9	0
Thyroid	34	8	26	27	7	0	18	1	2	3	0	3
Other Endocrine (including Thymus)	10	3	7	10	0	0	0	0	0	0	10	0
Hodgkin Lymphoma	7	5	2	6	1	0	0	1	3	2	0	0
Non-Hodgkin Lymphoma	26	18	8	24	2	0	10	0	5	8	0	1
Multiple Myeloma	9	5	4	6	3	0	0	0	0	0	6	0
Lymphocytic Leukemia	2	0	2	2	0	0	0	0	0	0	2	0
Myeloid & Monocytic Leukemia	8	4	4	8	0	0	0	0	0	0	8	0
Kaposi Sarcoma	2	2	0	2	0	0	0	0	0	0	2	0
Miscellaneous Sites	14	7	7	10	4	0	0	0	0	0	10	0
Total	1,425	720	705	826	599	106	232	155	103	106	75	49

2007 Award Approval by Commission on Cancer

The University of Connecticut Cancer Program is accredited by the [Commission on Cancer \(COC\)](#) of the American College of Surgeons. COC approval is given only to those institutions that have voluntarily committed to provide the best in diagnosis and treatment of cancer and to undergo an evaluation process and review of its performance. To maintain approval, institutions with approved cancer programs must undergo an on-site review every three years.

Receiving care at a Commission on Cancer (COC) approved cancer program ensures that a patient will have access to:

- Quality care.
- Comprehensive care with state-of-the art services and equipment.
- A multispecialty team approach that coordinates the best treatment options available to patients.
- Information about cancer clinical trials, education, and support.
- Lifelong patient follow-up through a cancer registry that collects data on type and stage of cancers and treatment

<http://cancer.uhc.edu/about/accreditation.html>

In October 2007 John Dempsey Hospital – University of Connecticut Health Center received a 3 Year with Commendation Approval Award from the Commission on Cancer. **Three-Year with Commendation** is awarded when the program complies with all standards and receives a commendation rating for one or more of the eligible standards. Facilities receiving this approval award at the time of the survey will be evaluated for eligibility to receive the Commission on Cancer Outstanding Achievement Award.

The areas in which the John Dempsey Hospital – University of Connecticut Health Center received commendation are as follows;

- Abstracting Timeframe
- AJCC Staging
- Patient Guidelines
- Clinical Trials Accrual
- Prevention and Early Detection
- Cancer Registry Staff Education
- Cancer Related Improvements

Melanoma: A Health Center Team Counters a Killer

With skin cancer rates on the rise, Cancer Center physicians hope to establish a Cutaneous Skin Program with the full complement of resources to prevent, treat and understand this potentially fatal disease.

Any discussion of cancer inevitably includes statistics. Richard Ferguson is keenly aware of the ones that pertain to him. Ferguson, a Southington resident and former Secret Service special agent who was assigned to several presidents, prefers to look at the positive side of his personal statistics. After all, he's alive to share his story, and that's one very special statistic.

Ferguson was diagnosed with cancer in 2005. That diagnosis places him among the roughly 1.35 million Americans who develop the disease every year. It's a big number, and it's likely to remain high until Americans—especially Americans with light skin—give up their love affair with tanning. Skin cancer is linked to sun exposure, and skin cancer rates dwarf those of all other cancers combined.

Ferguson is fortunate in that he is a cancer survivor, one of a growing number of people who are beating cancer. While there are several kinds of skin cancers, many are highly treatable if diagnosed early.

Basal cell cancer, the most common kind, rarely spreads. While 40 percent of people who get it can expect to have additional carcinomas within a decade, the disease responds well to treatment.

So does squamous cell cancer, the second most common form of the disease. It accounts for 250,000 cases annually. Most people who contract it survive.

Ferguson didn't have either of those forms of skin cancer, however. He had invasive melanoma, a malignant form of skin cancer and one of the fastest to metastasize. Once it spreads, it's lethal. It is not only the deadliest form of skin cancer, but it is among one of the deadliest cancers of all.

In Ferguson's case, it first appeared as an ominous-looking patch of dark skin on the back of his leg. He was fortunate, because his wife noticed it. Since many skin cancers develop on the back or the back of the legs, people who have it often doesn't see it and so are almost always alerted to it by someone else.

"I've heard a lot of patients say, 'My three-year-old saved my life,'" says Upendra Hegde, MD, an oncologist and a member of the team that staffs the Health Center's melanoma clinic.

With his diagnosis, Ferguson became one of the 60,000 Americans who contract invasive melanoma every year. It's an unnerving statistic. But there is one positive note: Melanoma is easy to diagnose and easy to remove surgically.

"Surgery is the first line of treatment for melanoma patients," says Dr. Hegde. "If the lesion is discovered early, surgeons will generally have no problem removing it, and the prognosis is usually good. If the melanoma is no more than a millimeter deep when it's discovered and removed, the likelihood of survival is very high. However, if it goes deeper we worry about it spreading to the lymph system."

Silver Lining

Richard Ferguson personifies the silver lining in the melanoma cloud. He got medical treatment early, and two years later, he is still cancer free.

But he's taking no chances. He knows that, having developed cancer, he's at heightened risk of a recurrence. And he also knows that the lifestyle he led when he was younger almost certainly put him at risk.

"When I was a kid, my grandparents had a place in Florida," he recalls. "We'd go there in the summer and I'd be on the beach, in the sun, from 10 in the morning until 5 at night."

Excessive exposure to sunlight is the single greatest cause of skin cancer, says Phillip Kerr, MD, a dermatologist and dermatopathologist (an expert of skin diseases) who, like Dr. Hegde, is a member of the Health Center's melanoma team. "Not all melanomas can be attributed to sunlight exposure," he notes, "but it's estimated that 70 percent to 80 percent are. The best way to protect yourself is to avoid too much sunlight."

The culprit that damages skin is ultraviolet radiation, a component of sunlight. It's most intense during the summer, at higher elevations and near the equator. The worst possible time to be exposed to it is during the peak daylight hours, between 11 a.m. and 4 p.m.

Doctors recommend that people who've had melanoma see a physician every three months for the first year. After that, they need to continue having check-ups every six months for five years. So when Ferguson retired from the Secret Service and settled in Connecticut, where he'd always maintained a home, he asked his personal physician to recommend a dermatologist. His doctor urged him to see Jane Grant-Kels, MD, director of the Health Center's dermatopathology program.

Chairperson of the Health Center's Department of Dermatology, Dr. Grant-Kels oversees the work of the melanoma team. In addition to Drs. Hegde and Kerr,

the team includes dermatologist Michael Murphy, MD, and two Mohs surgeons, James Whalen, MD, and Hanspaul Makkar, MD. Mohs surgery is a state-of-the-art procedure that makes it possible to assess skin cancers very efficiently while minimizing tissue loss and subsequent deformities.

Richard Ferguson's personal physician could not have recommended a better doctor. Dr. Grant-Kels chairs the dermatopathology program. She is also an assistant professor of pediatrics and pathology, assistant dean of clinical affairs, and director of the dermatology residency program. She is one of the state's leading experts on skin cancer, and she has some alarming things to say about the disease.

One in Five

"One person dies of melanoma in the United States every hour," she says, "and it's on the increase. Between 1975 and 2001, the incidence of melanoma increased 137 percent, and the mortality rate increased by almost 30 percent. It is the most common cancer in women between ages 25 and 29 and the second most common, after breast cancer, for women 30 to 34."

To address this projected problem and provide better service she wants to create a Cutaneous Oncology Program at the Health Center. Such a facility would further consolidate current skin cancer-related services and enhance them with additional staff, more physical space and the resources to conduct research that would benefit the Health Center and the community alike.

Dr. Grant-Kels sees people like Richard Ferguson every day. The statistics associated with them inform her work. When their stories, like Ferguson's, are positive, she is gratified. But she's also aware that "skin cancer, in general, is on the increase. At current rates, one in every five Americans will get skin cancer."

It's a terrible statistic, and one she and her colleagues are determined to change.

—Karen Singer

http://cancer.uchc.edu/news/newsletter/pdf/dialogue_spring07.pdf

Malignant Melanoma Study
Analysis of University of Connecticut Health Center
Carole and Ray Neag Comprehensive Cancer Center
Cancer Registry Data
Written by Sheri Amechi, CTR and Sue Gruno, CTR
Physician Reviewers: Dr. Jane Grant-Kels and Dr. Lori Wilson

The skin is the largest organ in the human body. The most common serious form of skin cancer is malignant melanoma. It is estimated that 59,940 persons will be diagnosed with malignant melanoma in 2007 in the United States. The State of Connecticut estimates that 1,120 new cases of malignant melanoma will be diagnosed.

Source: American Cancer Society, Facts and Figures, 2007

Etiology:

Cutaneous melanoma starts in the melanocyte cells of the skin. Melanocytes lie in the epidermis, the outermost layer of the skin. Melanocytes often cluster together and form moles (nevi). Most moles are benign, but some go on to become melanomas. However, most melanomas start de novo, i.e., in skin that is completely normal without a pre-existing nevus. Melanoma most often starts on the trunk of fair-skinned men and on the lower legs of fair-skinned women, but it can start in other places, too. Having dark skin lowers the risk of melanoma. But it does not mean that a person with dark skin will never get melanoma.

Risk factors:

- **Family history of melanoma**
- **Fair skin, light hair, light eyes**
- **History of sunburns**
- **More than 50 moles**
- **Atypical moles**
- **Tanning Beds**

Signs and symptoms:

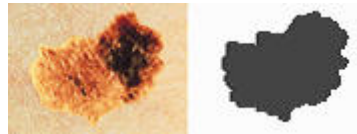
Changes in size, shape or color of a skin lesion (Asymmetry, Border irregularity, Color variegation, Diameter change, Evolving or changing lesion)
Appearance of new growth on the skin.

Other warning signs of melanoma include:

- Change in the appearance of a mole, such as the spreading of the pigment from the border of the mole into the surrounding skin
- A mole that looks scaly, oozes, or bleeds
- Itching, tenderness, or pain in a mole or lesion
- Brown or black streak that appears underneath a nail or around the nail
- Bruise on the foot that does not heal

Melanoma often develops in a pre-existing mole that begins to change or as a new pigmented lesion. It is estimated that 20% to 40% of melanomas arise from an atypical mole. This is why it is so important to be familiar with the moles on your body and perform regular self-examinations of your skin. When looking at moles, keep in mind the **ABCDs of Melanoma Detection**:

1. **Asymmetry.** If you could fold the lesion in two, the two halves would not match.



2. **Border.** Melanomas often have uneven or blurred borders.



3. **Color.** Melanoma typically is not one solid color; rather it contains mixed shades of tan, brown, and black. It can also show traces of red, blue or white.



4. **Diameter.** While melanomas are usually greater than 6 millimeters (about the size of a pencil eraser) when diagnosed, they can be smaller. If you notice a mole different from others, or which changes, itches, or bleeds even if it is smaller than 6 millimeters, you should see a dermatologist.



It is important to realize that a mole may have some of the characteristics described above and not be a melanoma. A biopsy is often necessary to distinguish an atypical mole from a melanoma.

Source: The American Academy of Dermatology

Incidence:

- It is estimated that there will be 116,500 *new* cases of melanoma diagnosed in the United States in 2008 — 54,020 noninvasive (in situ) and 62,480 invasive. In 2008, 34,950 men and 27,530 women will be diagnosed with invasive melanoma. In 2005 (the last year complete data is currently available) there were approximately 1,019 residents in Connecticut diagnosed with this disease.
- During the 1970's the incidence rate of melanoma increased rapidly by about 6% per year. However, from 1981-2000, the rate of increase slowed to 3% per year and since 2000 melanoma incidence has been relatively stable with only slight increases reported.

Note: All cases included in this study are analytical cases in the UCONN registry. Analytical cases are those cases in which the patient was diagnosed at and/or received all or part of their first course treatment at UCONN. Non-analytic patients are those patients who had all first course treatment at another facility and presented to UCONN for treatment of disease refractory to previous treatment regimens or with recurrence of previously treated disease and have not been included in this study as information on their first course treatment is often limited and/or incomplete. * From 1997 to 2007 the UCONN registry showed 785 cases of melanoma. This number reflects 723 patients. 62 patients have multiple reportable cases of melanoma.

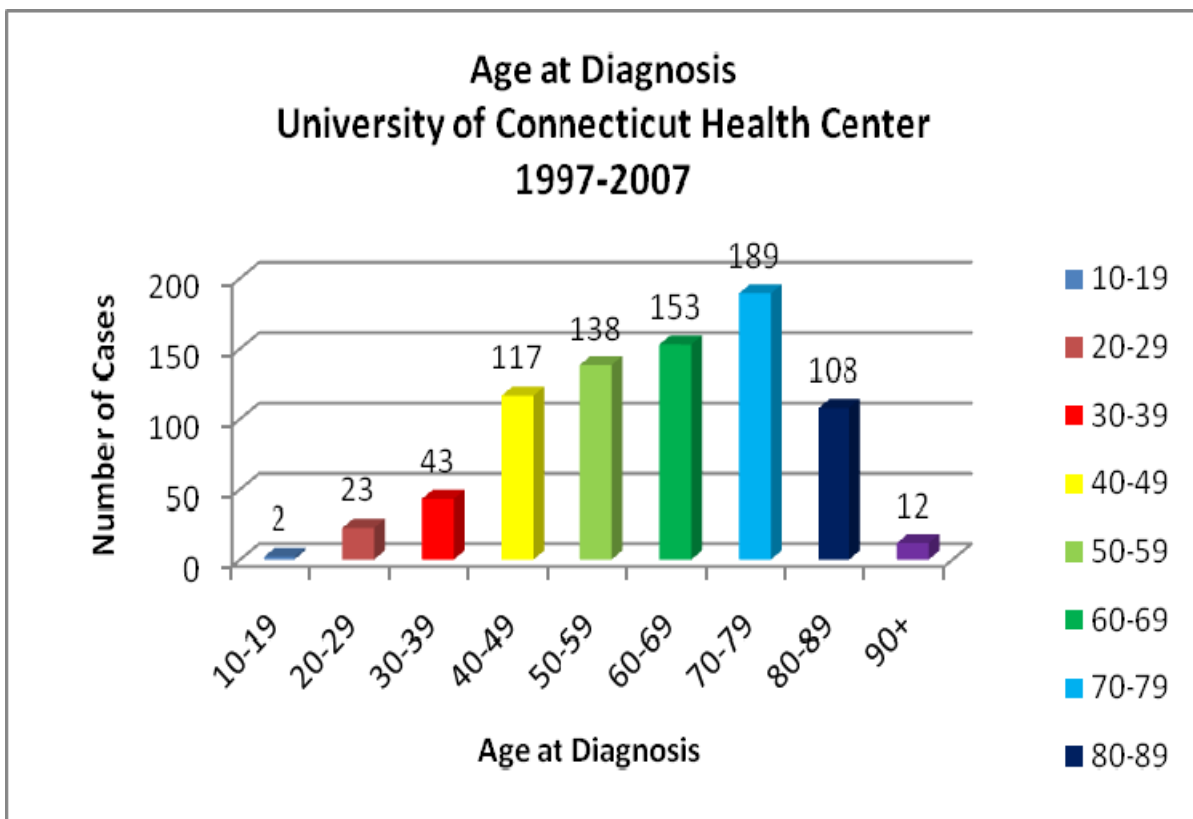
Patient Demographics:

Race

Melanoma is primarily a disease of whites; rates are more than 10 times higher in whites than in African Americans. A ten year study of patients diagnosed with melanoma at **UCONN** from 1997 to 2007 showed 708 patients were white, 3 were African Americans and 12 were of other or unknown decent. Melanomas of the palms, soles, and nails represent about half of all melanomas in African Americans but fewer than 10% of melanomas in whites nationally.

Age at Time of Diagnosis

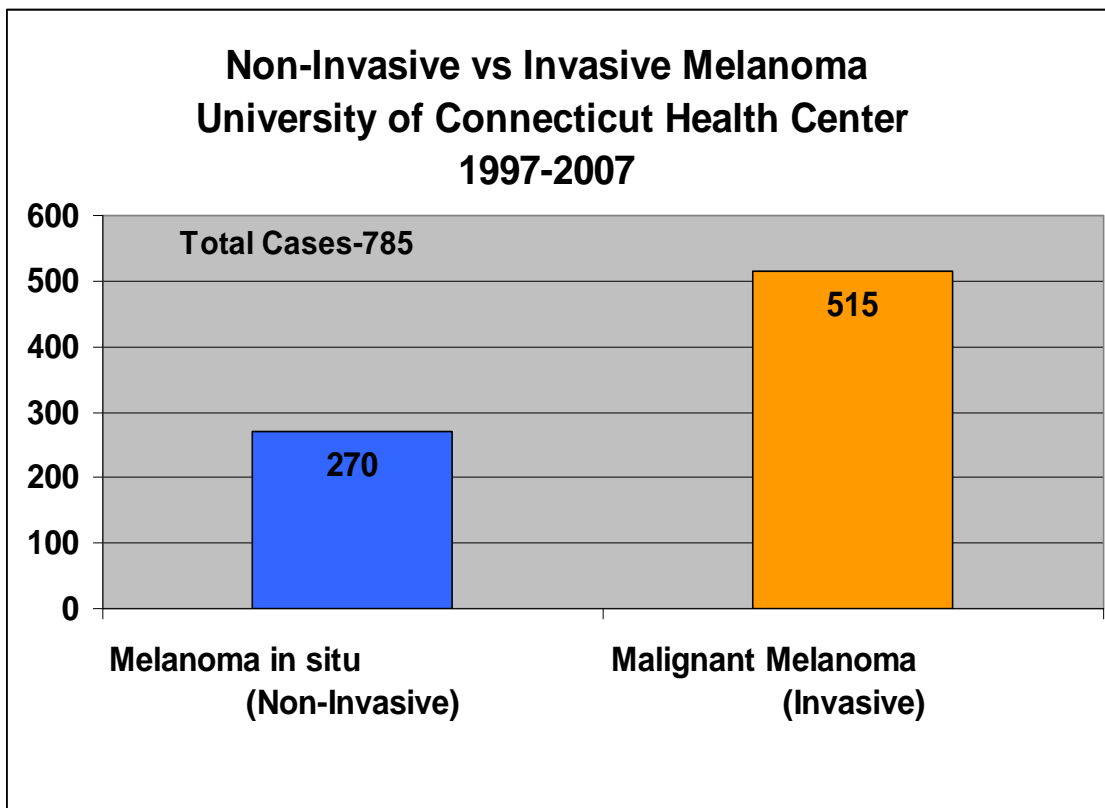
Age at diagnosis at UCONN ranged from 14 to 96, the mean being 76 years. Although melanoma is an uncommon cancer of children, two cases of melanoma were diagnosed at UCONN in children between the age of 10 and 19 years. *(We have diagnosed at least two melanomas in children less than 10 years as well.)*

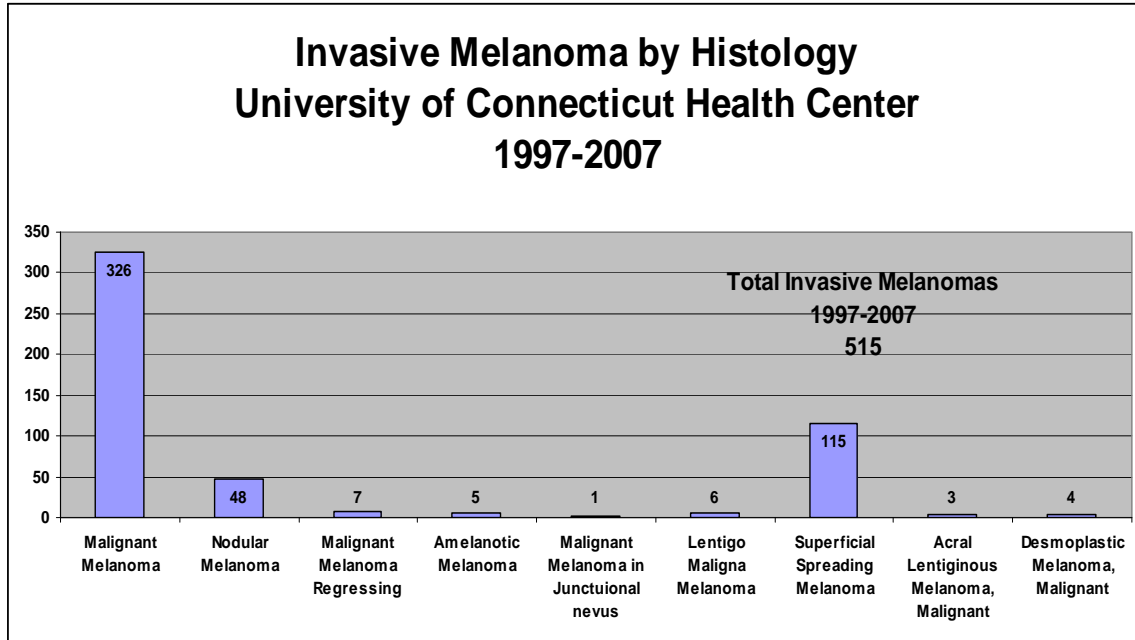


**Tumor Characteristics:
Histologic Type**

During the ten years that data has been collected at The University of Connecticut Health Center the most common histological type is malignant melanoma type unspecified; there are however specific histologic types of melanoma seen at **UCONN**:

Melanoma in situ
 Malignant Melanoma
 Nodular Melanoma
 Regressed Malignant Melanoma
 Amelanotic Melanoma
 Malignant Melanoma in association with a melanocytic nevus
 Lentigo Maligna Melanoma
 Superficial Spreading Melanoma
 Acral Lentiginous Melanoma, Malignant
 Desmoplastic Melanoma, Malignant





Evaluation of Disease at Time of Diagnosis

Establishing the extent of the patient's disease (stage of disease) is critical in assisting the clinician in determining the appropriate treatment modality for the individual patient. Treatment for melanoma begins with the surgical removal of the melanoma and some normal-looking skin around the growth. Removal of the normal-looking skin is known as taking margins, and is done to be sure no melanoma is left behind. Early melanoma limited to the outermost layer of the skin (the epidermis) is known as melanoma in situ (in place), and simple surgical removal produces virtually a 100 percent cure rate. If left untreated, the melanoma grows deeper in the skin and is more likely to produce a life-threatening situation. Deeper melanomas are more likely to reach a blood vessel or lymphatic channel and spread. When a melanoma spreads, it goes to the lymph nodes first. The lymph nodes are part of the lymphatic system, a series of vessels throughout the body that are responsible for cleaning the body's tissue. Different lymph nodes serve different parts of the body. It may be possible to find the melanoma in the lymph node before it goes any further. A procedure called a sentinel lymph node biopsy is a way of identifying and testing the first lymph node into which the melanoma drains. The decision to perform a sentinel lymph node biopsy is based on how deep the melanoma is in the skin, and how likely it is to have spread. An open lymph node biopsy may also be done. This is the surgical removal of the lymph nodes which are examined under a microscope.

A complete physical and ophthalmological (eye) examination should be done. Diagnostic imaging techniques such as x-ray, computed tomography (CAT scan), magnetic resonance imaging (MRI), positron emission tomography (PET scan) and radio-isotopic bone or organ scan may be included.

There are no specific blood tests for melanoma, but sometimes LDH (lactate dehydrogenase) levels are helpful to the clinician. LHD is an enzyme found in the blood that may be elevated when a lot of cancer cells are present or when the liver has been damaged by cancer. Blood LDH levels can be a marker for widespread melanoma.

Staging of Disease at Time of Diagnosis

There are three staging schemes for melanoma:

1. AJCC Cancer Staging Method (used in all cancer registries)
2. Clarks Level
3. Breslow Method

The most widely used staging scheme is the AJCC Cancer Staging method (TNM). The TNM describes the extent of the primary Tumor (T stage); whether or not the cancer has spread to nearby lymph Nodes (N stage), and the absence or presence of distant Metastasis (M stage). Unlike most cancers, melanoma tumors are assessed on the thickness of the tumor and whether ulceration of the tumor is present.

AJCC Cancer Staging Method (TNM)

Description

Primary Tumor (T)

X	Primary tumor cannot be assessed (e.g., shave biopsy or regressed melanoma)
0	No evidence of primary tumor
Tis	Melanoma in situ
T1	Melanoma <1.0mm with or without ulceration
T1a	Melanoma <1.0mm in thickness and level II or III, no ulceration
T1b	Melanoma <1.0mm in thickness and level IV or V, with ulceration
T2	Melanoma 1.01-2.0mm in thickness with or without ulceration
T2a	Melanoma 1.01-2.0mm in thickness, no ulceration
T2b	Melanoma 1.01-2.0mm in thickness, with ulceration
T3	Melanoma 2.01-4mm in thickness with or without ulceration
T3a	Melanoma 2.01-4.0mm in thickness, no ulceration
T3b	Melanoma 2.01-4.0mm in thickness, with ulceration
T4	Melanoma greater than 4.0mm in thickness with or without ulceration
T4a	Melanoma >4.0mm in thickness, no ulceration
T4b	Melanoma >4.0mm in thickness, with ulceration

Regional Lymph Nodes (N)

NX	Regional lymph nodes cannot be assessed
N0	No regional lymph node metastasis
N1	Metastasis in one lymph node
N1a	Clinically occult (microscopic) metastasis
N1b	Clinically apparent (macroscopic) metastasis
N2	Metastasis in 2 or 3 regional nodes or intralymphatic regional metastasis without nodal Metastasis
N2a	Clinically occult (microscopic) mets
N2b	Clinically apparent (macroscopic) mets
N2c	Satellite or in transit metastasis without nodal metastasis
N3	Metastasis in 4 or more regional nodes, or matted metastatic nodes, or in transit metastasis or satellite(s) with metastasis in regional node (s)

Distant Metastasis

MX	Distant Metastasis cannot be assessed
M0	No distant metastasis
M1	Distant metastasis
M1a	Metastasis to skin, subcutaneous tissues, or distant lymph nodes
M1b	Metastasis to lung
M1c	Metastasis to all other visceral sites or distant metastasis in any site associated with an elevated serum lactic dehydrogenase (LDH)

Presence of residual tumor is also considered in TNM staging.

Clark Level

Clark Level describes how far a melanoma has penetrated into the skin instead of actually measuring it. The Clark level of a melanoma uses a scale of I to V (with higher numbers indicating a deeper melanoma) to describe whether:

- cancer stays in the epidermis (Clark level I)
- cancer has begun to invade the upper dermis (Clark level II)
- cancer involves most of the upper dermis (Clark level III)
- the cancer has reached the lower dermis (Clark level IV)
- the cancer has invaded to the subcutis (Clark level V)

Breslow Measurement

The actual thickness of the tumor is measured under a microscope using a tiny measuring device. A breslow measurement of 1 means the tumor has penetrated to a depth of 1 millimeter below the skin's surface.

Treatment Options

Wide local excision: A wide local excision is done to decrease the chance of local recurrence. More tissue is removed around the melanoma site, and the tissue from the final excision is examined to make sure that no cancer cells remain in the skin. The size of the margin removed depends on the thickness of the tumor.

Lymph node evaluation: Sentinel node biopsy is usually recommended if the melanoma is more than 1mm thick, but may be considered for thinner melanomas.

Surgery for Metastatic Melanoma

Once melanoma has spread from the skin to distant organs the cancer is unlikely to be curable by surgery.

Immunotherapy: Immunotherapy enhances and encourages a patient's immune system to recognize and destroy cancer cells more effectively. Immunotherapy agents include BCG (Bacille Calmette-Guerin), Cytokine Therapy and Interferon therapy.

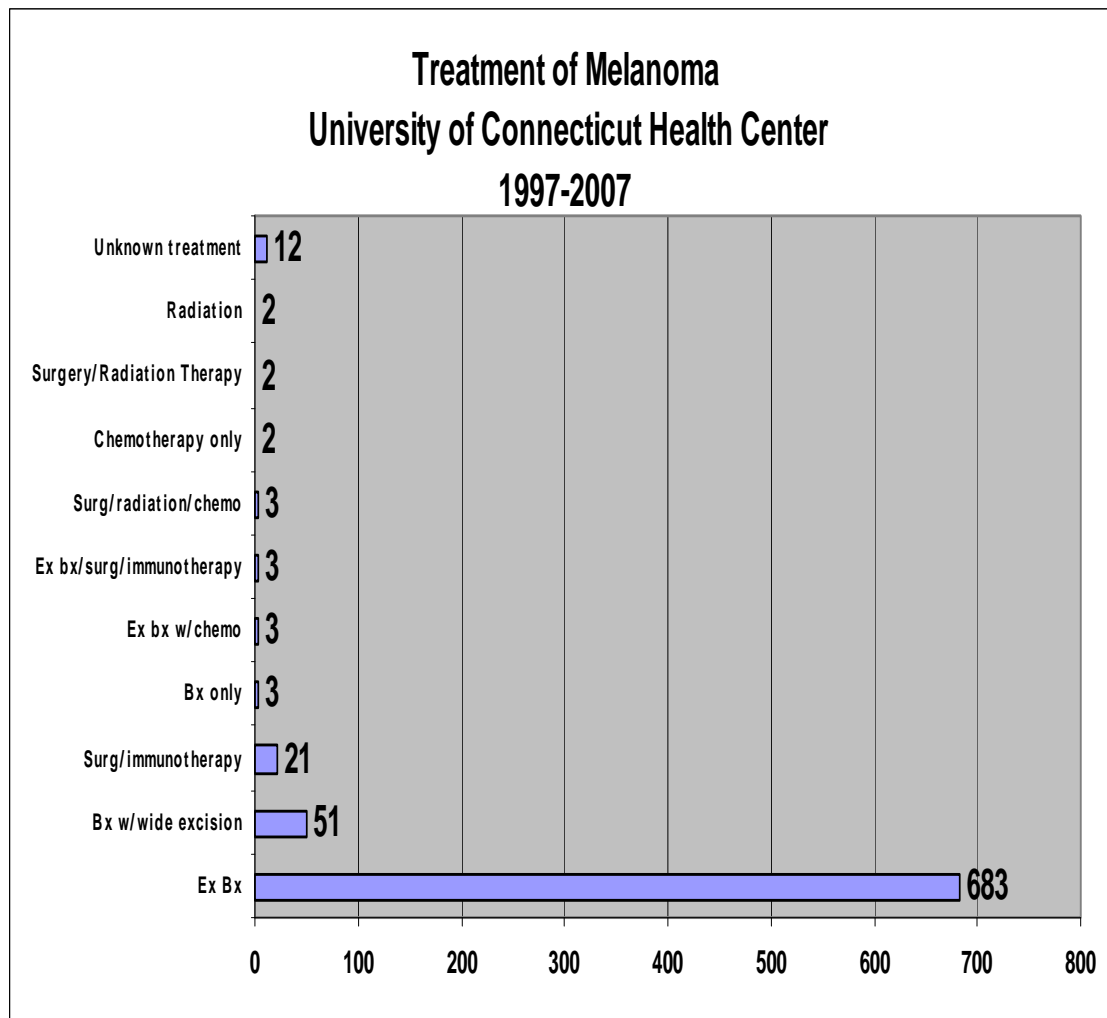
Vaccine therapy: Vaccine therapies are experimental therapies that are being tested in patients with stage III or stage IV melanomas.

Chemotherapy: Only a few chemotherapy drugs are used for stage IV melanoma. Although chemotherapy is usually not as effective in melanoma as in some other types of cancer, it may relieve symptoms or extend the survival time of some patients with stage IV melanoma.

Radiation therapy is not commonly used to treat the primary tumors of melanoma, but may be considered in some patients with recurrent disease.

CO2 laser ablation: Laser treatment may be used in some patients with several small nodules of metastatic melanomas that have spread along the skin.

Treatment for Melanoma Cases 1997-2007



Survival Analysis

Five year survival analysis for patients diagnosed with malignant melanoma between January 1998 and 1999 was done using observed (actuarial) method. The below table compares the information submitted nationally by 1335 facilities, information submitted by northeast hospitals in CT, ME, MA, NH, RI and VT a combination of 104 facilities. The survival for these 1,584 patients is displayed below. The National Cancer Data Base (NCDB) data for Teaching/Research Hospitals in the USA is also shown for comparison.

ACoS Commission on Cancer – National Cancer Database

Hospital Comparison Benchmark Reports The National Cancer Data Base (NCDB), a joint program of the Commission on Cancer (CoC) and the American Cancer Society (ACS), is a nationwide oncology outcomes database for more than 1,400 Commission-approved cancer programs in the United States and Puerto Rico. Some 75% of all newly diagnosed cases of cancer in the United States are captured at the institutional level and reported to the NCDB. The NCDB, begun in 1989, now contains approximately 20 million records from hospital cancer registries across the United States. These data are used to explore trends in cancer care, create regional and state benchmarks for participating hospitals, and to serve as the basis for quality improvement.

Below is a sample of hospital comparison benchmark reports on melanoma generated for ACoS approved Cancer Programs in the United States and ACOS Cancer Programs in Connecticut. The comparison reports become a valuable tool for or institution in assessing our diagnostic and therapeutic efforts.

Five Year Survival Table for Melanoma Cancer Cases Diagnosed in 1998 &1999

Comparison of University of Conn. Health Center, State of Conn.

Teaching/Research Hospitals and All Hospitals in the NCDB Data Base

AJCC Stage at Diagnosis	University of Connecticut Health Center	State of Connecticut 9 Teaching/Research Hospitals	All Hospitals 1225 Hospitals
Stage	5 YEARS	5 YEARS	5 YEARS
0	87.80%	93.3	88.3
I	90.70%	89.7	89.9
II	Insufficient data	76.3	74.9
III	Insufficient data	51.9	52.9
IV	Insufficient data	Insufficient data	13.8
Overall	Insufficient data	84.1	78.2

Source: NCDB, Commission on Cancer, ACoS. Benchmark Reports, v9.0

AGE at Diagnosis of Melanoma

Diagnosed 2000-2005

All Reported Cases

Hospital Type: University of Conn. Health Center vs. Teaching/Research in the State of Connecticut

AGE	Number of Cases		% (percent)	
	Reported by		Reported by	
	Other	UConn	Other	UConn
Pediatric	5	0	0.17	0
16-29	91	7	3.01	1.72
30-39	233	13	7.72	3.2
40-49	474	62	15.7	15.27
50-59	591	68	19.57	16.75
60-69	581	77	19.24	18.97
70-79	654	109	21.66	26.85
80-89	360	60	11.92	14.78
90+	31	10	1.03	2.46
Total	3,020	406	100	100

Source: NCDB, Commission on Cancer, ACoS. Benchmark Reports, v9.0

Histology of Melanoma

Diagnosed 2000 to 2005

Hospital Type: University of Connecticut Health Center vs Teaching/Research in the State of Connecticut

HISTOLOGY	NUMBER OF CASES		% (percent)	
	Sum		Sum	
	Reported by		Reported by	
	Other	UCONN	Other	UCONN
Malignant Melanoma, NOS	2,056	295	68.08	72.66
Nodular Melanoma	116	22	3.84	5.42
Malignant Melanoma in Hutchinsons Melanotic Freckle	182	13	6.03	3.2
Superficial Spreading Melanoma	552	53	18.28	13.05
Other Specified Types	114	23	3.77	5.67
Total	3,020	406	100	100

Source: NCDB, Commission on Cancer, ACoS. Benchmark Reports, v9.0

Treatment of Melanoma

Diagnosed 2000 to 2005

Hospital Type: University of CT Health Center vs Teaching/Research in the State of CT

TREATMENT	N (cases)		% (percent)	
	Sum		Sum	
	Reported by		Reported by	
	Other	UCONN	Other	UCONN
Surg. Only	76,978	374	85.88	92.12
Rad. Only	11	0	0.01	0
Surg. & Rad.	10	0	0.01	0
Surg. & Chem.	3	0	0	0
Rad. & Chem.	2	0	0	0
Chem. Only.	3	0	0	0
Surg., Rad. & Chem.	5	0	0.01	0
Surg. & BRM	3,015	10	3.36	2.46
Chem. & BRM	1	0	0	0
Other Specified Ther.	4,846	12	5.41	2.96
No 1st Course Rx	4,761	10	5.31	2.46
Total	89,635	406	100	100

Source: NCDB, Commission on Cancer, ACoS. Benchmark Reports, v9.0

Diagnosis Year

Melanoma

Diagnosed 2000 to 2005

Hospital Type: University of Conn. Health Center vs Teaching/Research in the State of Connecticut

YEAR	N (cases)		% (percent)	
	Sum		Sum	
	Reported by		Reported by	
	Other	UCONN	Other	UCONN
2000	523	54	17.32	13.3
2001	446	37	14.77	9.11
2002	456	80	15.1	19.7
2003	469	80	15.53	19.7
2004	527	72	17.45	17.73
2005	599	83	19.83	20.44
Total	3,020	406	100	100

Source: NCDB, Commission on Cancer, ACoS. Benchmark Reports, v9.0

Innovative Treatments Are Extending the Lives of Patients

The Carole and Ray Neag Comprehensive Cancer Center is participating in more than 90 trials of new treatments for a variety of cancers – attracting patients from across the country. This means Connecticut residents have access to what may be tomorrow's standard of care today.

About Clinical Trials

Treatments used in clinical trials are often found to have real benefits. Choosing to participate in a clinical trial is an important personal decision. During cancer treatment, the doctor may suggest taking part in a clinical trial. Scientists conduct clinical trials only when they believe that the treatment being studied may be better than other treatments.

- Alternative & Complimentary Medicine
- Bone: Effects of Therapy
- Breast Cancer
- Colorectal Cancer
- Endocrine Cancer
- Gastrointestinal Cancer
- Genitourinary (Kidney/Prostate) Cancer
- Gynecologic (Cervix/Ovary) Oncology
- Leukemia
- Lung Cancer
- Lymphoma
- Melanoma
- Oral Cancer/Head and Neck Carcinoma
- Prevention/Screening
- Skin Cancer

CONCLUSION:

The University of CT Health Center is the only site in the entire state of CT that offers collaborative melanoma clinics. This affords our patients to be seen by a team of dermatologists, oncologist, dermatologic surgeon if needed, and oncologic surgeon if needed. We are also the only locale in CT where patients with numerous nevi or a history of several melanomas can obtain total body digital imaging, which enhances our ability to follow their skin lesions for future changes.

Because we have a team of clinicians and researchers dedicated to this dreaded disease, we are hopeful that we can diagnose melanomas at an earlier stage thereby curing the patient by surgery alone. However, if patients present with advanced disease we also have a team of oncologists, oncologic surgeons, and melanoma researchers so that we can extend to them the best treatments available to ensure their greatest chance of survival as well as quality of life.