



The Georgia Cancer Center for Excellence at Grady Memorial Hospital

2009 Annual Report

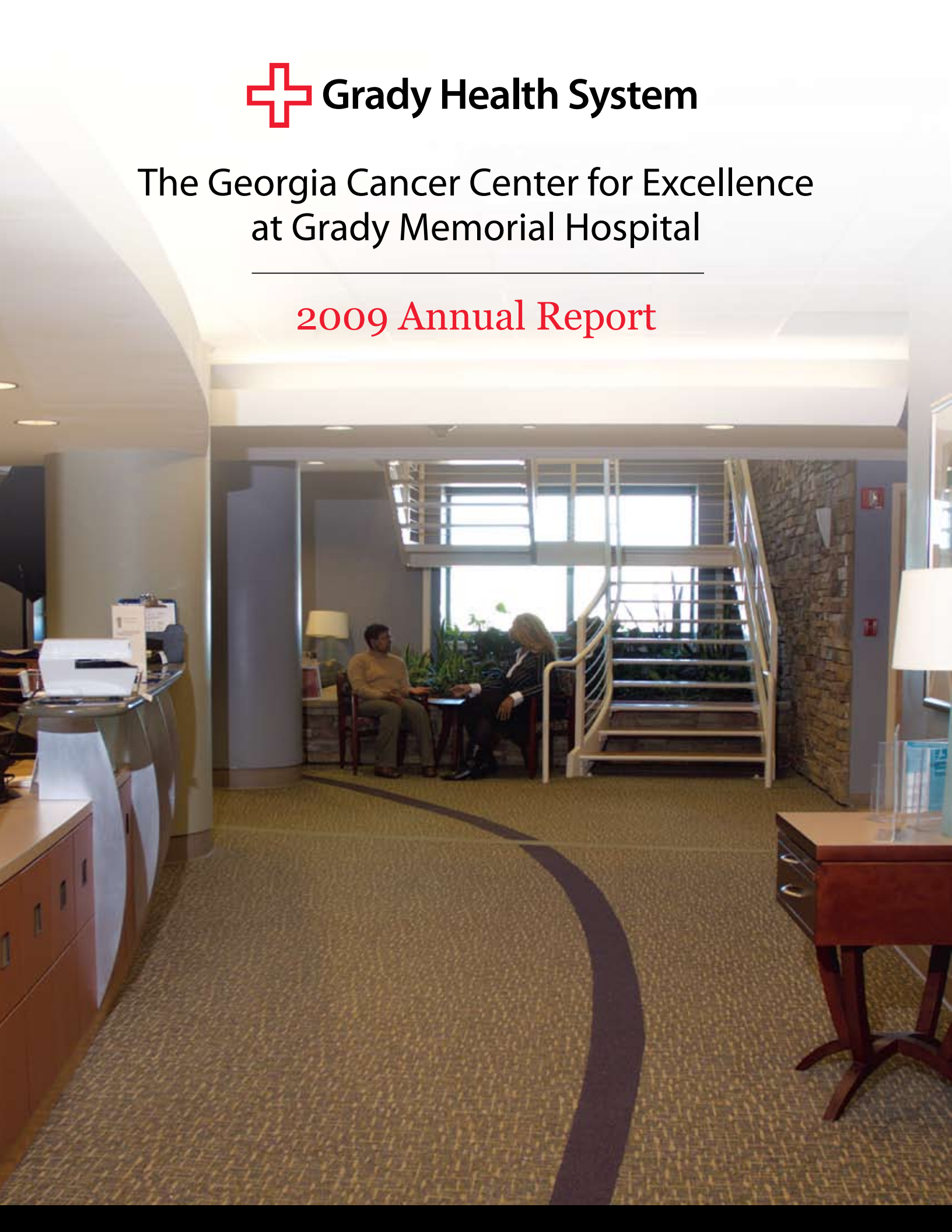


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Letter from the Medical Director



The goal of The Georgia Cancer Center for Excellence (GCCE) at Grady Memorial Hospital is to consistently improve clinical outcomes, increase patient satisfaction, advance research, and provide outreach to the metro Atlanta community. We employ a collaborative approach, working with the Winship Cancer Institute of Emory University and Morehouse School of Medicine to deliver the highest quality of patient care, education and training, as well as research. The faculty and staff from Emory, Grady and Morehouse are committed to providing culturally competent and appropriate patient-centered care delivered with the highest level of compassion.

The last decade has brought tremendous advances in medical therapy, and nowhere is this more evident in medicine than in cancer care. From screening and early detection, improved diagnostic imaging, clinical trials and selective radiation therapies, the landscape of oncology management is rapidly changing. We have kept pace with the advances in patient care and research allowing us to improve patients' outcomes. Georgia Cancer Center for Excellence has stayed the course by providing services that assist the patients with navigating the devastating news of a cancer diagnosis.

Assisting patients and their families to move forward during times of health crisis is something the GCCE does well. A variety of resources, some unique to our center, are available to the patients. We have an excellent patient navigator program. An established multi-disciplinary team of physicians and staff was created to provide individual treatment options and care plans by cancer site for each patient. Our patients have on-site access to all diagnostic imaging, including a large aperture MRI scanner, Spiral and PET-CT Scans, and digital ultrasound. The Radiation Oncology Department is equipped with advanced technology for cancer treatment including, mammosite, IMRT, and high dose RT for gynecologic oncology care. The Center takes pride in treating the whole patient. Services are provided that offer emotional and spiritual support, social workers, support groups, navigators and psychiatric care.

The GCCE has many partners. The vision of the Georgia Cancer Coalition (GCC) and its financial commitment and support led to the establishment of the Cancer Center at Grady. The support of the Avon Foundation was critical in the success of our breast cancer program, and the American Cancer Society provides a patient navigator for all our cancer patients. The Four Seasons Hotel, through its Run for Research annual fundraising event, and the Georgia Center for Oncology Research and Education (GA-CORE) are organizations helping to bring cutting-edge clinical and translation research to the patients and communities we serve.

As cancer research provides more effective treatments and prevention, GCCE is a strong presence, growing, expanding and continuing the fight against cancer. Patients have access to clinical trials, and the Basic scientists from Morehouse continue to discover mechanisms for potential treatment and cure in the research wing of our center.

There is still a long road ahead. I am confident that through our collaborative efforts we will achieve the best outcomes for all our patients.

Roland Matthews, MD

Professor and Chairman, Obstetrics and Gynecology, Morehouse School of Medicine
Medical Director, Georgia Cancer Center for Excellence at Grady
Georgia Cancer Coalition Distinguished Cancer Scholar

Letter from the Cancer Services Director



The care of cancer patients necessitates providing a wide array of modalities, all of which contribute to the overall treatment program. Cancer treatment has been perceived by many individuals to be made up of combinations of surgery, radiation, and chemotherapy. The term “advances in treatment” is most often used to signify new surgical techniques, new drugs or drug combinations and radiation treatments that enhance the duration of survival.

However, for many patients and their families, the price that is exacted in their battle against cancer is often much more than decreasing the duration of life.

The struggle with cancer takes not only a physical toll but also a psychological toll. The loss of control, the fatigue, the loss of body image, the loss of the will to live may be almost as detrimental as the disease itself.

At the Cancer Center, we have placed considerable emphasis on providing the most effective and most innovative treatments for patients with cancer.

Gathered under the auspices of the GCCE are a wide range of specialists in Medical Oncology, GYN/Oncology, Surgical and Radiation Oncology.

Cancer care for those at the Cancer Center is more than just treatment with a new technology or drugs. It begins with the potential to offer the patient the most appropriate therapy and is enhanced with the use of multi-disciplinary consultation and collaborative care.

We are placing needed emphasis on other areas that can dramatically influence a patient’s outcome. Education is a critical component of cancer treatment because an informed patient and family can more effectively make decisions relevant to the patient’s disease. Maintaining self-image is crucial to the mental well-being of the patients, and our image recovery program is integrated into the treatment planning for most patients. Our departments of social work, pathology, and rehabilitation are critical and integral to the treatment of the patient. They contribute as part of a multi-disciplinary team to enhance the lives of the patients who have entrusted their well-being to the staff at the GCCE.

Adriene Kinnaird, MBA

Director, Oncology Services

Georgia Cancer Center for Excellence at Grady

Letter from the Cancer Liaison Physician



Historically, Grady's Cancer Liaison Physician was responsible for providing leadership and direction to establish, maintain, and support the GCCE. The role included complying with and maintaining the American College of Surgeon's Commission on Cancer (CoC) standards with the interests of cancer patients, the facility, and dedicated to improving the quality of care delivered to cancer patients.

At a recent CoC summit, the role of the CLP has been further defined to include interpreting and monitoring National Cancer Database (NCDB) at the CLP's Cancer Center. The CLP will be responsible for reporting and discussing this data at the cancer committee and continue to serve as a liaison with the American College of Surgeons.

Along with the CLP, the cancer leadership team of the GCCE at Grady includes Adriene Kinnaird, MBA, Administrative Director, Roland Matthews, MD, Medical Director, and Joel Okoli, MD, Chair of the Cancer Committee. This group recently implemented the CLP changes above as we prepare to invite the ACS Commission on Cancer for a site review in the spring of 2010. The CLP was appointed Co-Chair of the CQI committee and work of the committee includes review of lung cancer survival data with comparison to the NCDB, effect of breast cancer patients enrolled in the multi-modal Susan G. Komen for the Cure Atlanta Affiliate navigation program on adherence to the three breast national quality indicators, and lymph node yield in colon cancer surgical resections as another national quality indicator initiative. Studies in patient quality improvements that are underway focus on reduction in wait times for Coloposcopy to a minimum of 30 days, survey of patient knowledge and attitudes of clinical trials, and outcomes of breast reconstruction in the AVON Comprehensive Breast Center.

This year, the GCCE leadership partnered with the American Cancer Society (ACS) on strategies to accomplish community outreach goals identified by the cancer committee, including community screenings and education. Through all of these accomplishments, the GCCE Grady team is providing extraordinary treatment to our clients in a patient-centered environment.

Sheryl Gabram, MD, MBA, FACS

Professor of Surgery

Winship Cancer Institute of Emory University

Deputy Director, Georgia Cancer Center for Excellence at Grady

Director, AVON Comprehensive Breast Center at Grady

Georgia Cancer Coalition Distinguished Cancer Scholar

Letter from the Chair of the Grady Cancer Committee



Last decade marked a positive change in the state of oncology at Grady. A pivotal event was the designation of Grady as the first Georgia Center for Excellence. With major funding from the Georgia Cancer Coalition, Avon Foundation and Grady, GCCE was born in April 2003 and housed in the 9th and 10th floors at Grady. That decade was marked by significant increase in the number of faculty from both Morehouse and Emory Schools of Medicine with expertise in clinical, basic science, and epidemiologic research with leadership provided from Georgia Cancer Coalition Distinguished Cancer Scholars.

With the above initiatives at Grady, the Cancer Committee received an infusion of new energy and enthusiasm. A site visit by the Committee on Cancer (CoC) of the American College of Surgeons had been suspended several years ago following our self assessment that we were not in compliance in three major areas--failure of multidisciplinary attendance in the cancer committee itself and the various tumor boards, inadequate infrastructure for research and very limited participation of Grady patients in research and thirdly, noncompliance with the staging requirement.

At the onset of this new decade, it is with tremendous enthusiasm that I report that those areas of deficiencies have been rectified. While I am writing this letter, the Avon Comprehensive Breast Center at Grady under the outstanding leadership of Dr. Sheryl Gabram is undergoing a site visit for accreditation by the National Accreditation Program for Breast Centers (NAPBC); by getting accredited, Grady will join an elite group of Breast Cancer Centers that have been accredited in the 15 months that the NAPBC has been in existence. Later this year, the Grady Cancer Program will also have a site visit for reaccreditation by the CoC. I am very optimistic that with the indefatigable effort by the members of the Cancer Committee and the support of the administration, it will receive full reaccreditation.

I cannot thank enough all those that are directly or indirectly involved in provision of high quality cancer care to the Grady population. My dream is that one day our focus will not be just to meet the minimum requirements set forth by COC and NAPBC but to exceed them. Then, Grady will indeed live up to its appellation of a "Center of Excellence."

Joel A. Okoli, MD, MPH, FACS

Associate Professor of Surgery, Section of Surgical Oncology, Morehouse School of Medicine
Chair, Cancer Committee, Georgia Cancer Center for Excellence at Grady

History of the Cancer Center

The Georgia Cancer Center for Excellence (GCCE) at Grady was established by the Georgia Cancer Coalition as part of an initiative to build a statewide network of people and organizations to provide exceptional cancer treatment for all Georgians. Funded by the tobacco settlement, the \$28 million dollar state-of-the-art facility provides highly attentive care to cancer patients and their families. The facility also houses the \$3.3 million Avon Foundation Comprehensive Breast Center.

Mission and Vision

The mission of the GCCE at Grady is to reduce the number of lives lost to cancer in the metropolitan Atlanta area and Georgia through prevention and screening, treatment, research and education. The center provides services in a patient-focused manner that emphasizes access, customer service, cultural competence and the highest level of ethics and fiscal responsibility.

Recognizing that research is the key to improvements in all phases of cancer services, attention is placed on research that leads to the reduction of the disparities in outcomes that affect our primary patient population, as well as basic scientific, clinical and population-based research activities. Our mission is accomplished in collaboration with key partners.

The GCCE will be the leading public provider of patient-focused cancer services in Georgia and the Southeastern United States and will be a locus of excellence in cancer-related education and research.

Tumor Registry Report

The Grady Health System Tumor Registry is an integral part of the cancer program. It collects, disseminates, and analyzes data on all cancer patients seen at the facility. The Registry includes demographic, diagnostic, treatment and survival data on 20,671 cases diagnosed since January 1, 1986. Once a patient is entered in the database, the registry is required to provide lifetime follow-up information. The lifetime follow up conducted provides a tracking progress on cancer trends, and helps in developing treatment programs based on survival outcomes. The registry has maintained follow-up rates at or above 90 percent for patients diagnosed within the last 5 years and patients diagnosed since the reference date of 1986. For CY 2008, the Registry collected data on 874 cases. The top five sites of cancer were breast, lung, prostate, cervix, and colon.

In addition to collecting, maintaining and storing cancer data, the Registry coordinates the various Cancer Conferences where individual prospective cases are presented to physicians and other cancer center staff. These prospective case presentations ensure that the latest diagnostic and treatment information are discussed amongst fellow physicians and current standards of care are followed.

Many changes were implemented in 2008-2009 as we prepared to meet the standards of the American College of Surgeons. In the coming year, we are anticipating even more changes with the release of the 7th edition of the AJCC Cancer Staging Manual and the 2nd edition of the Collaborative Staging Manual. In preparation for these changes, the Registry Staff will be participating in local and national workshops to keep abreast of new changes in treatment and ACoS requirements throughout the year. The Grady Tumor Registry consists of four Certified Tumor Registrars, all dedicated to enhancing the abstracting of registry data.

Sherita Hearn, BS, CTR
Cancer Registry Supervisor

2008 Analytic Cases by Site & Sex

PRIMARY SITE	TOTAL	CLASS		SEX	
		A	N/A	M	F
ALL SITES	874	835	39	41	462
BREAST	150	140	10	7	143
LUNG/BRONCHUS	121	118	3	77	44
PROSTATE	78	73	5	78	0
CERVIX UTERI	68	67	1	0	68
COLON	55	54	1	32	23
CORPUS UTERI	31	31	0	0	31
OTHER SKIN	26	26	0	19	7
KIDNEY/RENAL	24	23	1	17	7
MULTIPLE MYELOMA	21	20	1	11	10
NON-HODGKIN'S	21	19	2	14	7
UNKNOWN PRIMARY	21	21	0	7	14
OTHER ORAL CAVITY	20	18	2	14	6
LEUKEMIA	18	15	3	13	5
BLADDER	16	15	1	10	6
STOMACH	15	15	0	8	7
ANUS/ANAL CANAL	14	14	0	12	2
LARYNX	14	12	2	11	3
TONGUE	13	13	0	9	4
RECTUM	13	11	2	5	8
LIVER	13	13	0	11	2
VULVA	13	13	0	0	13
THYROID	12	11	1	2	10
PANCREAS	11	11	0	4	7
ESOPHAGUS	9	9	0	8	1
OTHER DIGESTIVE SYSTEM	9	9	0	4	5
OVARY	9	6	3	0	9
TESTIS	9	9	0	9	0
OTHER MALE GENITAL	6	6	0	6	0
OTHER BRAIN & CNS	6	6	0	1	5
CONNECT/SOFT TISSUE	5	5	0	3	2
BRAIN (MALIGNANT)	5	5	0	4	1
OTHER BLOOD & MARROW	4	4	0	1	3
MELANOMA	4	4	0	1	3
HODGKIN'S DISEASE	4	4	0	3	1
OROPHARYNX	3	3	0	3	0
NASAL/SINUS	3	2	1	3	0
BRAIN (BENIGN)	3	3	0	1	2
LIP	2	2	0	1	1
OTHER FEMALE GENITAL	2	2	0	0	2
OTHER RESPIRATORY SYSTEM	1	1	0	1	0
OTHER ENDOCRINE SYSTEM	1	1	0	1	0

Distribution of County at Diagnosis

COUNTY AT DIAGNOSIS	PERCENT OF CASES
Fulton	61.01%
DeKalb	26.03%
Clayton	3.42%
Cobb	1.65%
Henry	1.65%
Gwinnett	1.53%
Out of State	1.06%
Rockdale	0.47%
Carroll	0.35%
Coweta	0.35%
Douglas	0.35%
Paulding	0.35%
Bartow	0.24%
Forsyth	0.24%
Unknown	0.24%
Baldwin	0.12%
Bibb	0.12%
Butts	0.12%
Fayette	0.12%
Greene	0.12%
Meriwether	0.12%
Muscogee	0.12%
Richmond	0.12%
Spalding	0.12%
Troup	0.12%

Top 10 Cancer Sites

SITE NAME	NBR	WHITE	BLACK	ASIAN	ORIENTAL	OTHER
	CASES	(%)	(%)	(%)	(%)	(%)
BREAST	146	10	88	0	1	1
BRONCHUS & LUNG	118	13	86	0	0	1
PROSTATE GLAND	71	14	86	0	0	0
CERVIX UTERI	70	21	76	0	0	3
COLON	50	10	84	2	4	0
BLOOD & BONE MARROW	35	17	83	0	0	0
CORPUS UTERI	31	26	74	0	0	0
SKIN	28	25	57	0	0	18
LYMPH NODES	25	32	68	0	0	0
KIDNEY	24	21	79	0	0	0

Note: Asian includes - Asian Indian, Pakistani, and other Asian Oriental includes - Chinese, Japanese, Filipini, Korean, and Vietnamese other includes - all races not listed above and/or unknown

AVON Foundation Comprehensive Breast Center at Grady

This year's Annual Report focuses on the successes in the AVON Comprehensive Breast Center (AVON CBC). During 2008, breast cancer (BC) ranked number one among the most commonly diagnosed malignancies at Grady: 143 women and 7 men comprising 17 percent of the total cancer patients. According to the American Cancer Society, an estimated 192,370 women will be diagnosed with breast cancer in 2009 and 40,170 will succumb to the disease; for men, 1,910 will be diagnosed and 440 will die of the disease.

The AVON CBC is a multidisciplinary breast care program, offering a full spectrum of clinical (benign, undiagnosed and breast cancer care) and support services. Our mission is to expand breast healthcare for medically underserved women in the metro Atlanta area. The AVON CBC is composed of a team of healthcare professionals along with faculty from two medical schools: Emory University School of Medicine and Morehouse School of Medicine. The team of professionals together providing comprehensive care and services for patients and their families. Services include screening, diagnosis, treatment, social services, outreach and research. A weekly multi-disciplinary breast conference allows for discussion of all BC patients to: ensure similar care management across disciplines and schools, adherence to NCCN or ASCO guidelines, and identify patients for accrual to clinical research trials. In 2008, approximately 267 patients were presented initially or re-discussed after surgery with documentation and dissemination of a care plan for each patient. Members of the team include:

- Breast Medical, Radiation and Surgical Oncologists, Pathologists, Dedicated Breast Imagers, Plastic Surgeons
- Nurse Practitioners and Physician Assistants
- Breast Care Clinic and In-patient Nurses
- Research Nurse Coordinators and Assistants
- Community and Clinic Patient Navigators
- Social Workers
- Psychologist and Psychiatrist
- Registered Dietitian
- Clinical Pharmacists
- Physical Therapists
- Lymphedema Specialists
- Genetic Counselor
- Volunteers for Image Recovery Center
- Palliative Care Experts

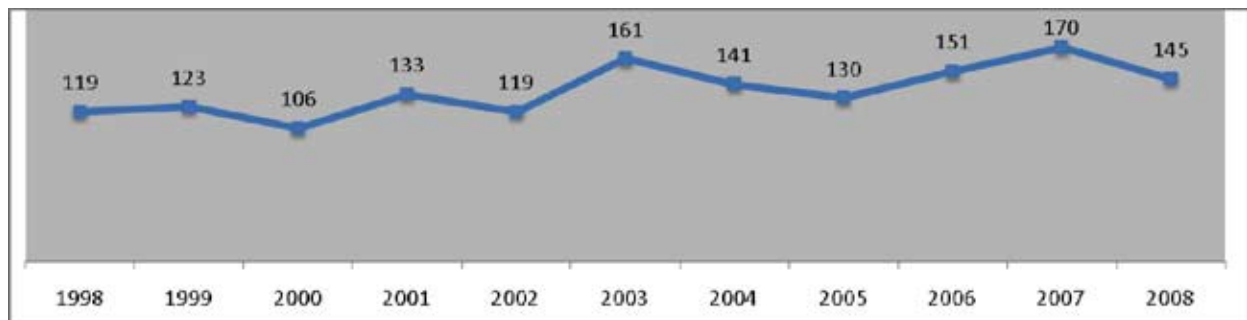


History of the AVON Comprehensive Breast Center at Grady

In April 2003, the Grady opened a new facility on the 9th and 10th floors with a goal to "... be the leading public provider of patient focused cancer services in the State of Georgia and the Southeastern United States ... and to be a locus of excellence in cancer related education and research." The \$34.1 million in capital investment used to develop the new facility was gifted from the Georgia Cancer Coalition and AVON Foundation along with a contribution from the Grady. As part of the GCCE at Grady, the AVON CBC was built with available resources in proximity to each other, notably breast imaging, surgery and medical oncology clinics. Thus, the AVON CBC serves as a common destination for patients needing routine or urgent clinical examinations, diagnostic imaging and image guided procedures. Medical and surgical oncology clinics coincide with each other allowing patients the convenience of receiving both services on the same day.

The number of BC patients seen on an annual basis since 2002 has grown. Part of this growth was a result of increasing our mammography services from 11,942 in 2005 to 16,140 in 2008, a 35% increase. The average number of breast cancer patients treated at our institution in the last 10 years was 136 per year.

Breast Cancer Cases at Grady



Ninety percent of our BC patients are African American (AA) women and nationwide data document a 36% increased mortality rate for AA women. Factors that contribute to poorer outcome include later stage at diagnosis, tumor characteristics, treatment, and lifestyle considerations. These differences are related to patient and system issues including but not limited to: socioeconomic and demographic factors, cultural beliefs, healthcare access, co-morbid conditions, and tumor biology. The graphic below illustrates how these influences interact, and in some areas overlap, leading to the excess mortality.

Reasons for Cancer Disparities



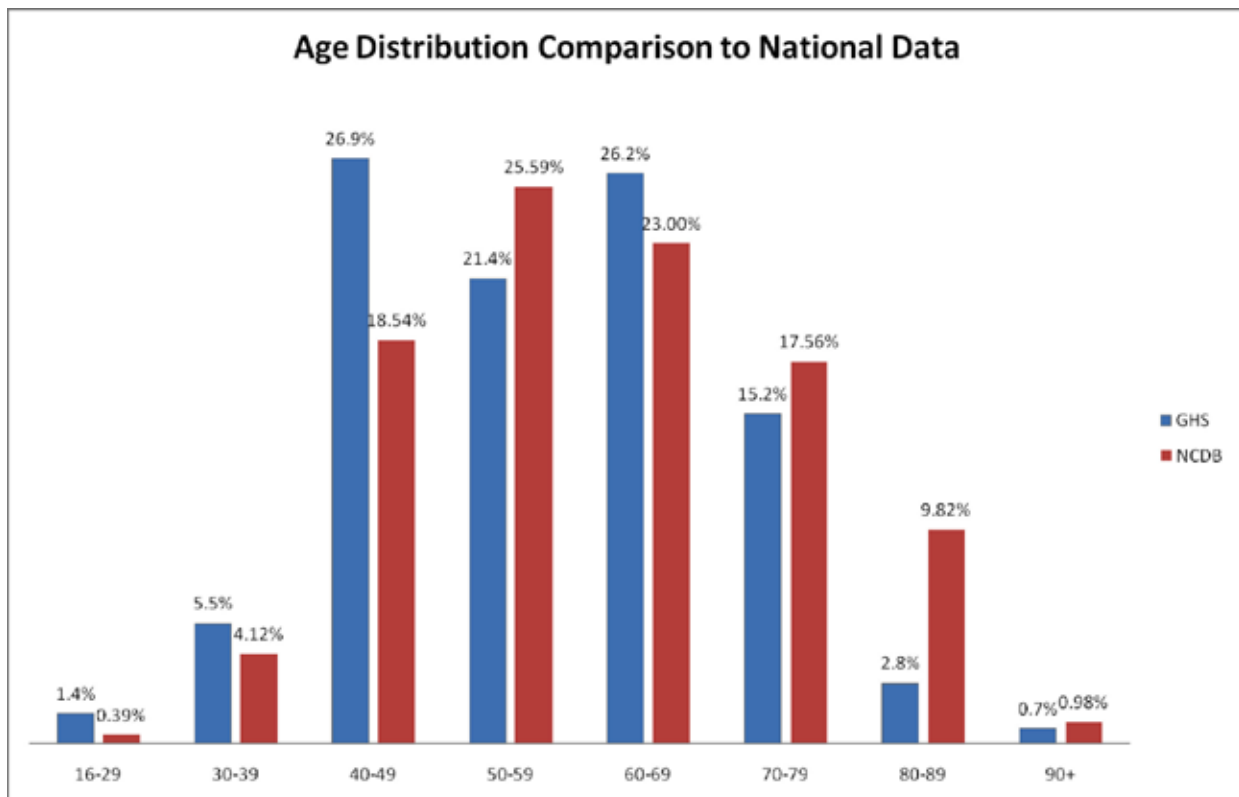
The AVON CBC has been successful in addressing social system factors by improving access to care for screening/diagnostic mammography and clinical trials. In 2008, we accrued 33 patients (22 percent) on either clinical trials or correlative/registry studies. Service grants have provided an opportunity for high risk patients to receive genetic consultation and testing. Grant funding has been obtained for lymphedema services and palliative care. Lifestyle issues leading to refusal of care and “no show” rates have diminished with the ongoing evolution of our Community Education Outreach Initiative (CEOI) lead by a research team from the Rollins School of Public Health. The CEOI program trains Community Patient Navigators to provide breast health information at various community venues. Clinic and Individual Patient Navigators offer peer-to-peer support to AVON CBC patients and assist patients in keeping medical appointments while encouraging adherence to recommended treatment plans. This program was conceptualized in 2001 and implemented in 2002.

Finally, our clinical, translational and basic science research program, including tumor bank, is focused on triple negative breast cancer because of the increased incidence in AA women and the challenges of treating this disease.

Vital Statistics: Age, Race, Stage, Type of Treatment and Survival

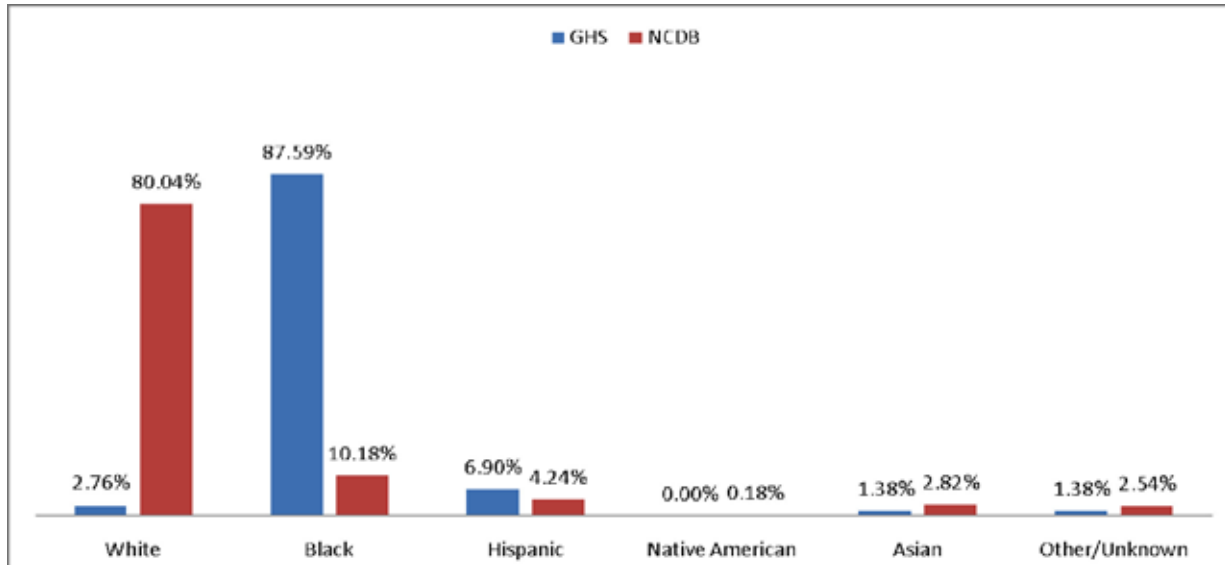
Age Distribution

The graph below illustrates the distribution of BC patients by age. 26.9 percent of BC patients diagnosed at Grady were between the ages of 40-49 and 6.9 percent less than 40. Compared to national statistics, we see a disproportionately younger age group of patients in the AVON CBC. Breast cancer is more common in AA women when diagnosed less than 45 years of age and this accounts for the observed differences in age distribution.



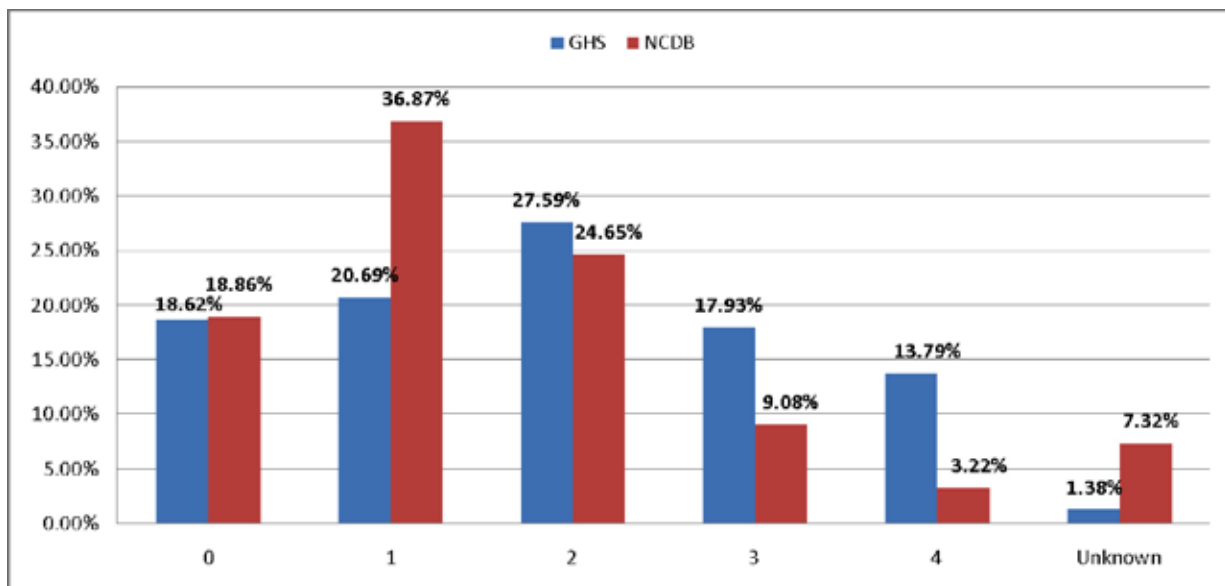
Race Distribution

The majority of women diagnosed and/or treated with breast cancer at this institution are African American (87.59 percent), which is a dramatic contrast to NCDB data that shows 80.04 percent of breast cancer cases in Caucasian women.



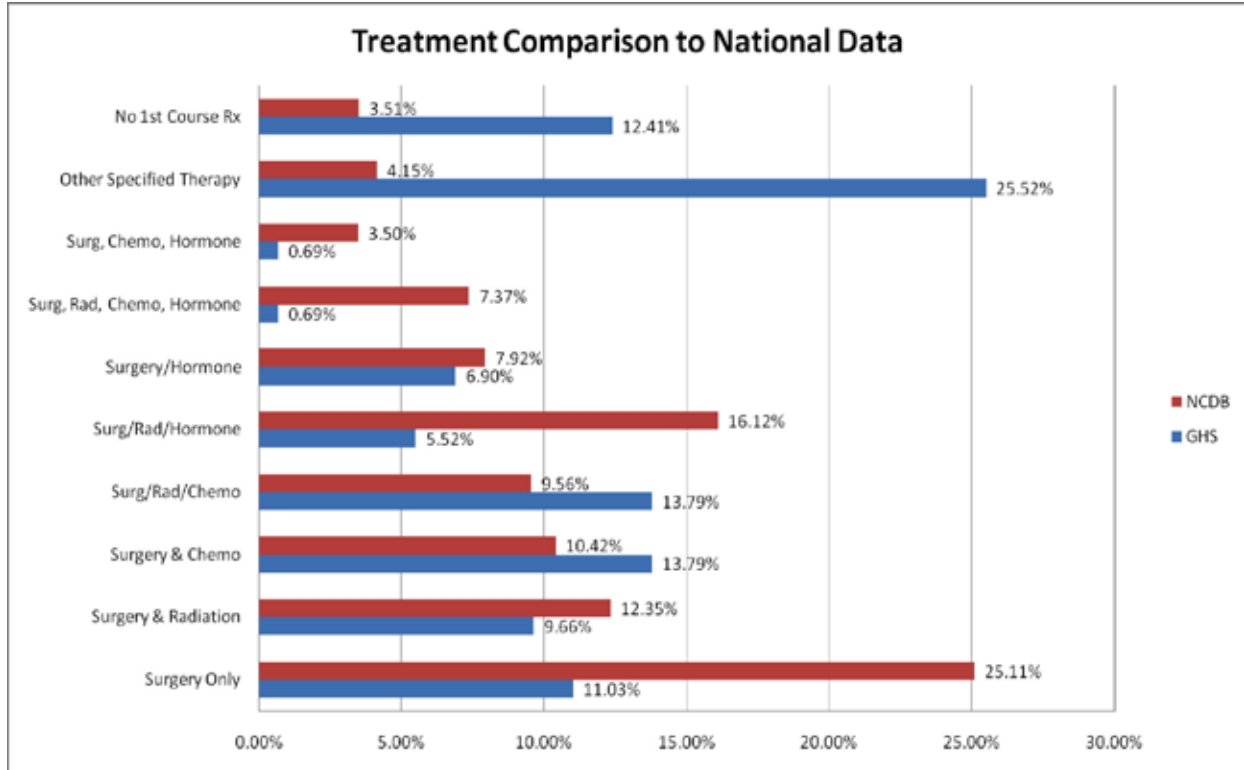
Stage at Diagnosis

The Stage of BC diagnosis in the AVON CBC is graphically depicted below. In 2006 and 2007, we saw 46 percent and 49 percent respectively of Stage 0/I BC patients and this unfortunately decreased to 39.3 percent in 2008 despite our increases in mammography services and screening. This time interval coincides with the downturn of the economy and many patients reported loss of insurance to us. We speculate that external causes may have accounted for this shift from earlier Stage BC over these times intervals.



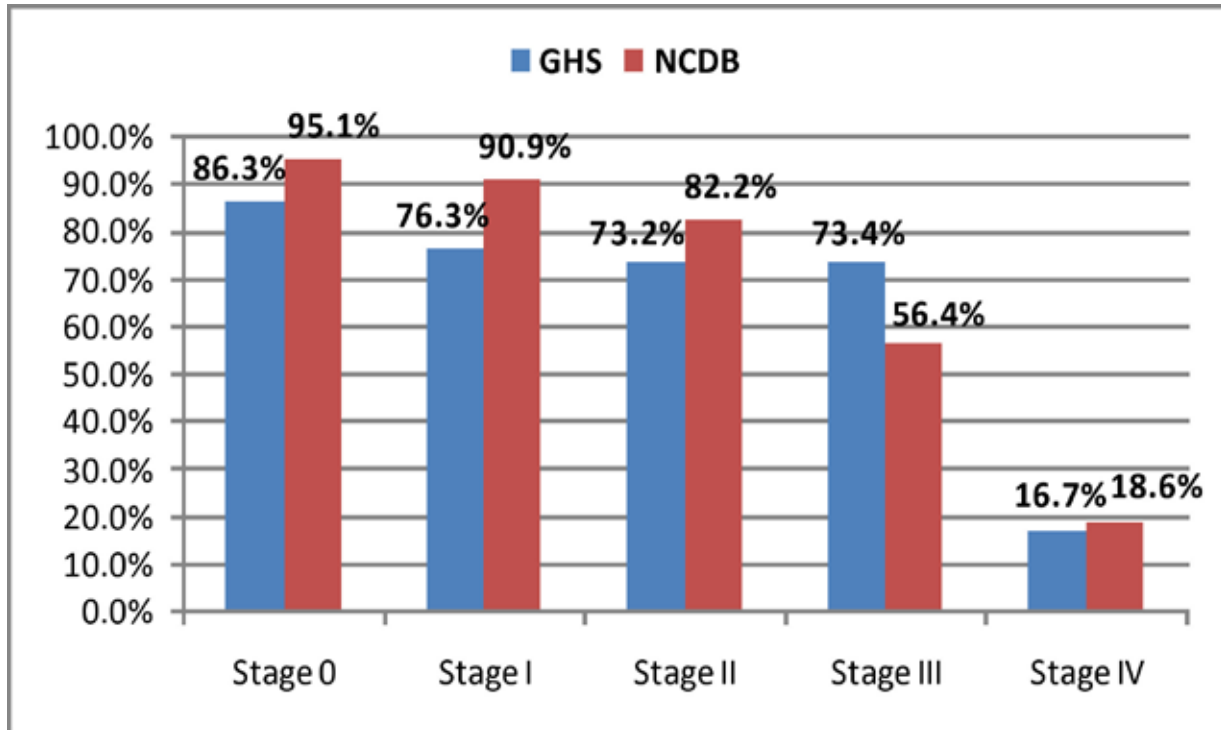
Type of Treatment

Grady will maintain an annual growth rate of 3% driven principally by growth in targeted advanced care services. Inpatient admission will be in excess of 30,000. Emergency Department visits for emergent cases continue to grow while non-acute visits will be redirected to alternatives. Ancillary volumes will continue to grow along with non-emergency ambulatory visits.

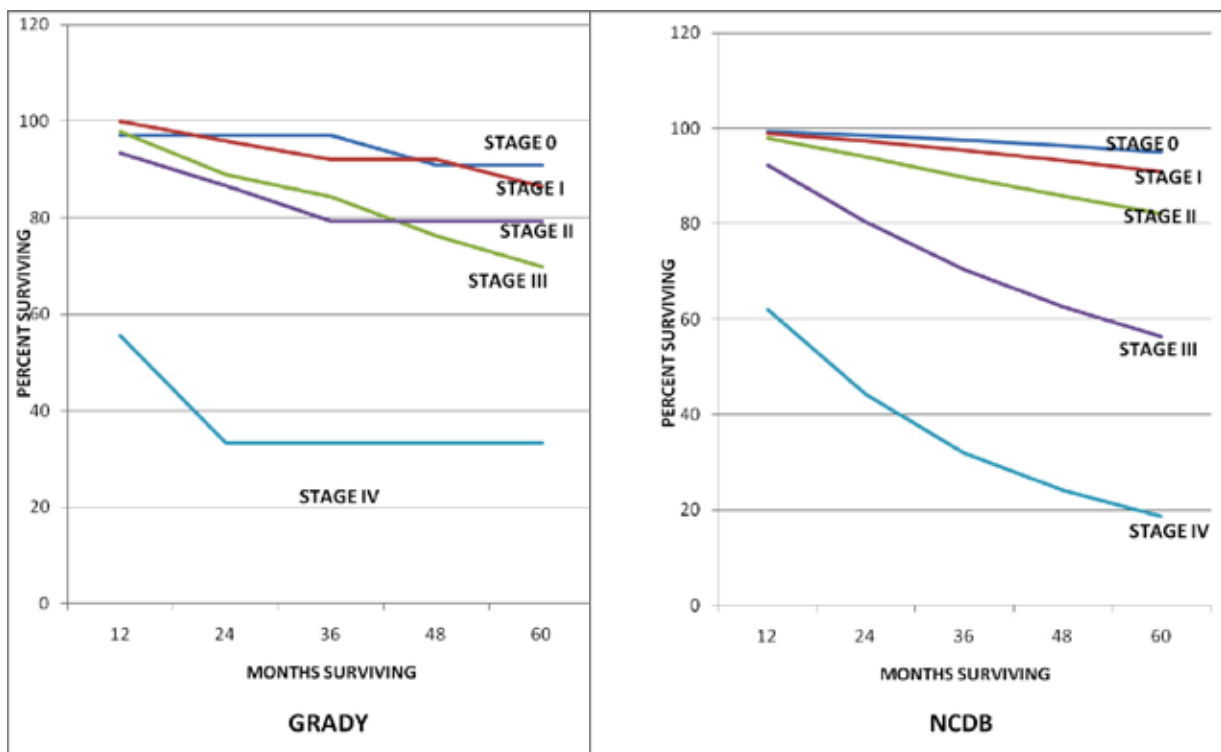


Survival

Overall survival following a breast cancer diagnosis has improved over time. Variables that may affect long-term survival include race, ethnicity and social economic status. When comparing survival outcome data from the NCDB to Grady data, we have a higher percentage of patients surviving with late stage disease.



Breast Cancer 5-year Survival Analysis



Continuous Quality Improvement Initiatives

The AVON CBC Steering team meets regularly to assess progress towards annual goals, volume of Center activities and Continuous Quality Improvement metrics. Our goals for this year were to examine acceptance of multi-modal treatment for patients diagnosed in 2008 as well as perform an audit of plastic surgery BC and benign cases.

To study compliance among breast cancer patients receiving multi-modal therapy, we compared 2 of the 4 breast national quality indicators from 2005-2006 as baseline measures to: a subset of patients who had access to specially trained multi-modal navigators (through a Susan G. Komen for the Cure Atlanta Affiliate Grant), all patients meeting the criteria in 2008, and National Comprehensive Cancer Centers Network (NCCN) data.

- 1) Radiation therapy** is administered within 1 year (365 days) of diagnosis for women diagnosed with Stage I, II, and III under age 70 receiving breast conserving surgery (BCS) for breast cancer.
- 2) Combination chemotherapy** is considered or administered within 4 months (120 days) of diagnosis for women under 70 with the American Joint Committee on Cancer (AJCC) T1cN0M0, or Stage II or III hormone receptor negative breast cancer.

Compliance for Radiation with BCS and Chemotherapy for ER- patients (age <70)

Standard	2005	2006	Komen2008	All 2008	NCCN
Radiation	78.2%	74.4%	100%	95.4%	96%
Chemotherapy	72.4%	75%	93%	93.75%	91%

We are encouraged that adherence to care has improved markedly during this timeframe and have shared the data with the breast multi-disciplinary cancer team so further improvements can be implemented.

As a second quality measure, we examined outcomes for BC patients receiving reconstruction compared to non-breast cancer patients receiving breast reconstruction for 2008. Medical records of the 18 plastic surgery breast cases for 2008 were audited and 6 (33 percent) of patients returned to the operating room (38 percent of BC patients and 20 percent for non BC patients). The mean body mass index (BMI) for those returning to the OR was 33 for BC and 22 for non BC patients. Five (83 percent) of patients returning to the OR were current or past tobacco smokers. Eleven (48 percent) of all women undergoing mastectomy for BC at GMH received immediate reconstruction. Our reconstruction rates exceed national data for reconstruction (15.4 percent) and compares favorably regarding reported complication rates (33-60 percent).

Summary

The AVON CBC has made great strides in improving access to care for women in the greater Atlanta area. One of our major goals for 2010 is to obtain National Accreditation Program for Breast Centers (NAPBC) certification since our program meets all of the NAPBC standards. We continue to analyze and examine our services along with quality of care to diagnose patients earlier, encourage acceptance of all modalities of treatment recommended and ultimately continue to improve survival rates. Members of the team are highly committed to our mission and deliver outstanding care to our patients. It is a dynamic program that has made major progress over the past year and we are proud to share our story.

Prostate Cancer

Prostate cancer is the most non-cutaneous cancer in American men. Incidence rates have reached a peak nationally several years ago and are declining. Death rates are declining at a faster rate, which some have posited is due to screening, cutting down on the amount of regionally advanced and metastatic disease. The Austrian study of the effect of PSA screening in one region only (Tyrol) decreased mortality by 19 percent. At Grady, this national trend is not noted. Rather, the amount of Stage IV disease is 4.5 times that of the national average. This is manifested in treatment patterns, where it is noted that the use of palliative therapy (hormonal therapy) is 4.7 times the national average.

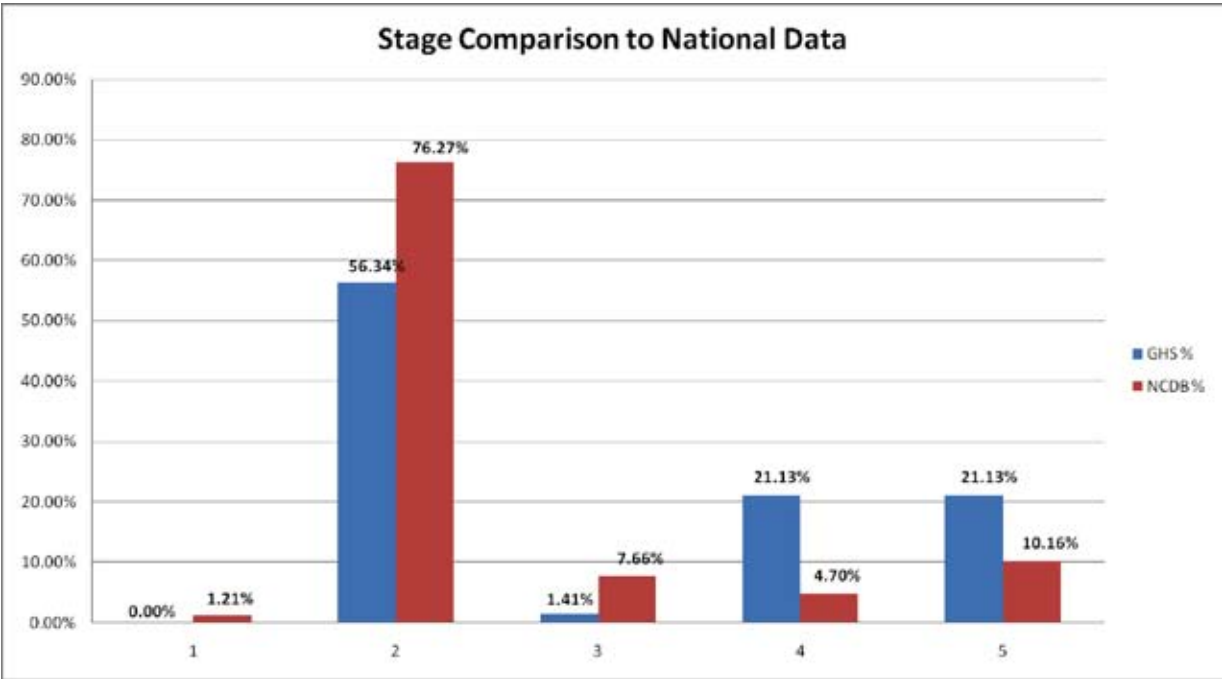
It is still noted that many men have never received a PSA test, and presentation of the patient is with metastatic disease. Screening with serum PSA testing may be the most expedient methodology of disease detection. Once prostate cancer is detected, multidisciplinary clinics with patient navigators will be critical in getting a primarily sub-health literate population through treatment.

Prostate Cancer: Age at Diagnosis

Age Groupings	GHS #	GHS	NCDB
16-29	0	0.00%	0.01%
30-39	0	0.00%	0.04%
40-49	2	2.82%	2.91%
50-59	21	29.58%	22.16%
60-69	25	35.21%	39.23%
70-79	19	26.76%	27.73%
80-89	4	5.63%	7.49%
90+	0	0.00%	0.43%

Prostate Cancer: Stage at Diagnosis

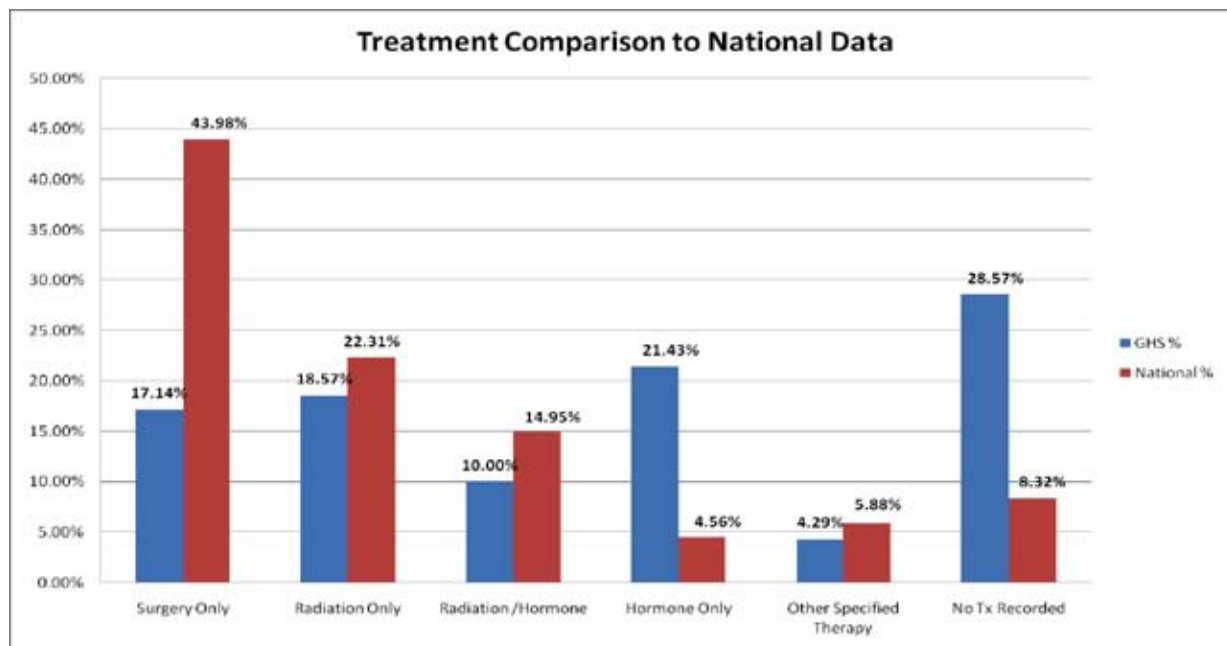
Stage	GHS #	GHS %	NCDB %
I	0	0.00%	1.21%
II	40	56.34%	76.27%
III	1	1.41%	7.66%
IV	15	21.13%	4.70%
Unknown	15	21.13%	10.16%



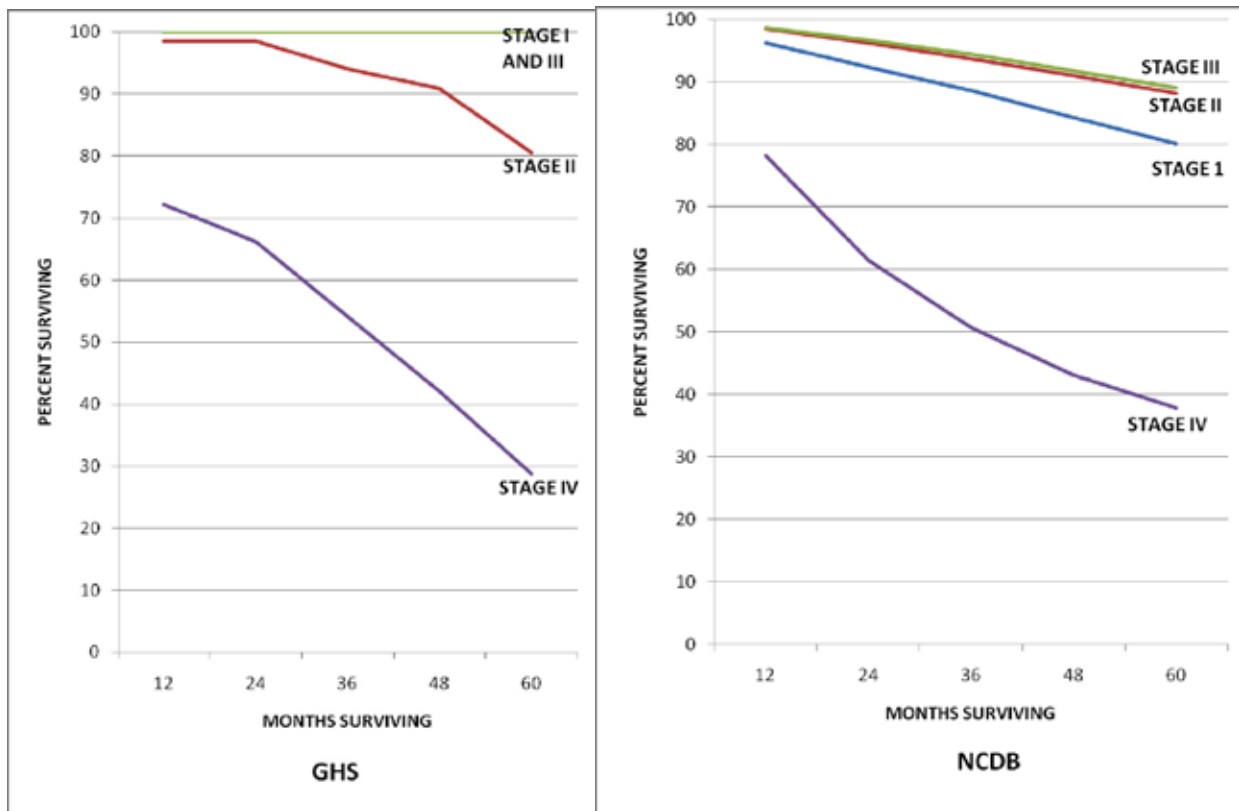
Prostate Cancer: Treatment

Type of Treatment	GHS %	National %
Surgery Only	17.14%	43.98%
Radiation Only	18.57%	22.31%
Radiation /Hormone	10.00%	14.95%
Hormone Only	21.43%	4.56%
Other Specified Therapy	4.29%	5.88%
No Tx Recorded	28.57%	8.32%

Prostate Cancer



Prostate Cancer: 5-year Survival



Basic Translational Research

E. Shyam P. Reddy, PhD

Georgia Cancer Coalition Distinguished Cancer Scholar

Professor and Co-Director, Cancer Biology Program, Department of Obstetrics and Gynecology, Morehouse School of Medicine

Functiono therapeutics: Gene Discovery and Function Based Therapeutic Strategies

Dr. Reddy and his colleagues have identified and cloned several oncogenes and studied their functions. The most notable genes discovered include ERG-1 and ERG-2 genes (ETS Related Gene). This gene is involved in 80 percent of prostate cancers, Ewing sarcoma and also leukemias (AML). Other notable ETS genes discovered and studied by Reddy include human Fli-1 (involved in Leukemias), EWS-Fli-1 (involved in Ewing Sarcoma, Pediatric cancer), EWS-erg (involved in Ewing Sarcoma), and TLS-erg (involved in Acute Myeloid Leukemia).

African American males are 1.7 times more likely to develop, and two to three times more likely to die from prostate cancer than White males. Thus, African American males within the United States are affected disproportionately by prostate cancer compared to White males. One of Reddy's group goals is to identify features of molecular pathways that differentially affect African American males compared to White males. The ERG gene discovered by Reddy and Veena N. Rao, Ph.D., co-director of the Cancer Biology Program,

Department of OB/GYN, Morehouse School of Medicine, is involved in 60 to 80 percent of prostate cancers. Reddy and his colleagues (Veena Rao, Ph.D.; Roland Matthews, M.D.; Yasuo Fujimura, Ph.D.; Ganapathy K. Bhat, Ph.D.; Shubhalaxmi Kayarthodi; J. Fang; C. Yang) developed a novel cell-based assay to assess the function of ERG proteins. Using this novel assay, Reddy identified novel targeted therapeutic agents that inhibit ERG function and also functions as anti-cancerous agents against prostate cancer.

Using these assays, they have also developed several novel therapeutic agents (patent pending). Some of these agents target specifically Ewing Sarcoma, Breast cancer (triple negative breast cancer), pancreatic cancer and ovarian cancers. They are looking into the mechanism of action of these novel therapeutic agents.

Recently, Reddy and his colleagues have discovered another novel mechanism by which proteins are modified. The majority of modification (N-linked glycosylation) of proteins occurs in secretory and membrane proteins. This typical protein modification takes place upon entry of the protein into the lumen of endoplasmic reticulum (ER), where there is a transfer of carbohydrate moiety to asparagine residue present in the protein. In bacteria, this protein modification can occur independently outside the ER box. Here, Reddy and his group find that such protein modifications can also occur even in eukaryotic cells. They show that transcriptional cofactor CBP interacts with BRCA2 protein (Breast Cancer protein) and mediates its protein modification both in vitro and in vivo. This is the first report that a transcription cofactor like CBP may be involved in protein modification. Since CBP cofactor interacts with many onco-proteins, tumor suppressors and transcription factors, such a signal may be vital to regulate the expression of these interacting proteins, which play an important role in cell growth, differentiation and cell death.

According to Reddy, this novel protein modification can have global effect on gene function, cell growth and differentiation. Micro deletions, chromosomal translocations and point mutations in CBP are linked to congenital developmental disorder, Rubinstein-Taybi syndrome (RTS), neurogenerative diseases and cancer. It is possible that deregulation of protein modification is associated with development of RTS, neurogenerative diseases, and cancers.

Veena N. Rao, PhD

Georgia Cancer Coalition Distinguished Cancer Scholar
Professor and Co-Director, Cancer Biology Program, Department of Obstetrics
and Gynecology, Morehouse School of Medicine

Molecular and Functional Dissection of ELK-1 and BRCA1 tumor suppressor genes in Breast, Ovarian and Prostate Cancers

One of the ongoing projects in Dr. Rao's lab is centered on ELK-1, a member of the ETS super family of genes, which they have identified and studied their role in leukemia's, lymphomas, and sarcomas. The defective functioning of this signaling network is the root cause of widespread diseases such as cancer. ELK-1 belongs to the ETS-domain family of ternary complex factors, which is a major nuclear target for the RAS-MAPK/ERK, SAPK/JNK and p38MAPK stress activated kinases. ELK-1 thus forms a central integration point for both growth, as well as stress signals and plays a major role in cell proliferation, apoptosis, tumorigenesis, as well as differentiation.

The second project in her lab is focused on BRCA1 gene. Women with BRCA1 mutations are estrogen receptor –negative, progesterone receptor-negative and HER-2 receptor –negative (Triple Negative breast cancers). TNBC are highly aggressive, and common in young African American and Hispanic women. Currently there are no targeted treatments against these cancers. There is significant overlap between TNBC and BRCA1 associated breast cancers, which suggests that dysfunction in the BRCA1 pathway may be responsible for the development of these cancers. Rao's group has discovered two short forms of BRCA1 proteins named BRCA1a and BRCA1b, which are expressed at reduced levels in breast and ovarian cancers. Their group was the first to show that inhibition of expression of these proteins in normal cells results in cancer and high level expression, resulting in cell death and growth inhibition of TNBC, ovarian and prostate cancers. There was a national press release on this work. Her recent work reveals why women with alterations in the BRCA1 gene often develop Estrogen-receptor negative breast cancers, which could potentially lead to function-based cellular assays that can validate their risk for developing these aggressive breast cancers.

The study suggests for the first time that the reason women with BRCA1 dysfunction get hormone-responsive cancers like breast and ovarian is that BRCA1 regulates the dynamic cycles of SUMO and Ubiquitin modifications required for Estrogen receptor-alpha turn over and deregulation of this molecular switch due to lack of BRCA1 results in Estrogen receptor-negative and positive breast cancers. Rao and her colleagues have found Ubc9 to be a new binding partner for BRCA1, BRCA1a and BRCA1b proteins. Mutation in the Ubc9 binding site as well as BRCA1 cancer-predisposing mutation (C61G) disrupted the ability to both bind as well as modulate Ubc9 mediated ER-alpha transcriptional activity in breast cancer cells. The researchers have shown for the first time BRCA1 protein to function as a novel SUMO-1 and Ubc9-dependent E3 ubiquitin ligase for ER-alpha. These studies show that BRCA1 represses levels of ER-alpha by promoting its degradation. "We believe that binding of SUMO-tagged ER-alpha to Ubc9 could serve as a signal for BRCA1 proteins to target it for degradation and impairment of this function and can result in breast and ovarian cancers" says Rao. "Our future efforts will be geared towards studying BRCA1 protein function in a totally new direction."

These findings uncover the paradox of why BRCA1 dysfunction leads to TN breast cancers, as well as develop novel targeted therapies based on enhancing the degradation of stalled ER-alpha to reinitiate transcription offering a promising method for the treatment of these ER-negative breast cancers. Other researchers participating in these studies include Shyam P. Reddy, Ph.D., Roland Matthews M.D; Jiang Xu, M.D; Tameka Watkins, M.S; Yulong Qin, M.D. PhD; Kartik Aysola, B.S; Ganapathy Bhat, PhD. The health implications of this study in cancer health disparities are truly immense. They have filed a patent on this work.

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