

Brookwood
Oncology
Program
Annual Report
2010-2011

DATA ENDING DECEMBER 2010





Oncology Program Overview

BROOKWOOD MEDICAL CENTER'S ONCOLOGY PROGRAM

is proudly accredited through the American College of Surgeons. We continually maintain a standard of excellence for our patients through our board certified physicians, oncology certified nurses, registered therapists, and qualified support staff such as dietitians, chaplains, social workers, case managers, and tumor registrars. Our patients remain our first priority, as we develop new programs to serve our community, such as cancer genetic testing and lung cancer screening. We realize that early detection, prevention and improved local therapy and systemic treatments are producing more cancer survivors. Our goal at Brookwood is to have the ability to offer our patients a complete spectrum of cancer care with a compassionate and exceptional team of professionals to guide them on the road to good health.

We have recruited many new physicians at Brookwood this year. We are thrilled to welcome Dr. Mack Barnes, a board certified GYN-Oncologist, to our medical staff. His dedication, compassion, and knowledge in his field are unsurpassed. Also, we welcome Dr. Rajat N. Parikh, a board certified Gastroenterologist, who specializes in Endoscopic Ultrasound and Gastrointestinal Oncology. He has played a pivotal role in the Endoscopic Ultrasonography program at Brookwood. Another exciting addition to our Medical staff is Dr. Andrew Strang, a board certified Urologist trained in robotic surgery. Not only are our physicians outstanding, but our staff is exceptional as well. Ellen Carmichael, Clinical Excellence Manager, received the Joann Barnett Award for Compassionate Nursing Care from the UAB School of Nursing Alumni. Pat Tawbush, Clinical Coordinator, was awarded Brookwood's Transformational Leadership Award for her contributions in leadership to 7 Main. Also, I would like to thank our Breast Cancer Awareness Champions, Jennifer Parrish, RN and Melody Hart, RN, for organizing our Breast Cancer Awareness Day and our team for Race for the Cure.

Change is always something to be embraced at Brookwood, so the opening of the new Women's Center in December 2011, is definitely something to celebrate. 7th floor is also celebrating their renovations with a completely updated nurse's station and physician documentation area. 3 Women's is highly regarded for their exceptional measures of quality, their focus on patient safety, and high patient satisfaction. In April, the new High Risk Breast and Ovarian Center opened and was extremely well received by physicians and staff. Managed by Carla Mason, our new board certified Genetic Counselor, the Cancer Genetics Center will offer risk assessment and counseling for patients at increased risk for certain cancers such as, Breast, Endometrial, Ovarian, Prostate and Colon. Brookwood is also in the developmental stages of a new Lung Cancer Screening Program that will include smoking cessation counseling, risk assessment, and spiral CT scan.

As always, we would like to thank our Cancer Committee members and coordinators for their hard work throughout the year, especially Dr. Fred Dumas, Chairman, and Dr. Sandra Tincher, Physician Liaison, for their tireless efforts towards keeping our program's focus always about our patient's needs, as well as our communities.

Jenni Fisher, BS, CMD, RT(T)

Director of Cancer Services | Brookwood Medical Center

Cyberknife for Lung Cancer

LUNG CANCER IS THE LEADING CAUSE OF DEATH

from cancer in the US, with an estimated 221,000 new cases diagnosed in 2011, and 157,000 deaths in the same year.

Surgery has been the standard of care for curing early stage lung cancer, but most patients present with advanced stage disease. For nonsurgical patients, either due to co-morbidities or advanced disease, the use of radiation, with or without chemotherapy, only provides local control rates of approximately 65% and 3-year cure rates of 30%.

Thoracic radiosurgery, which targets the tumor while in respiratory motion, safely delivers higher radiation doses while minimizing normal tissue toxicity. The development of radiosurgery for the treatment of lung cancer has improved local control rates to 95% at 3 years with a 48% 3-year survival in medically inoperable patients. For the treatment of lesions metastatic to the lung, radiosurgery provides a 96% local control rate at 2 years.

This significant improvement in outcomes with radiosurgery, compared to conventional radiation, makes treatment available to some patients that otherwise may have very limited options.

During 2009-2011, there were 274 patients diagnosed with lung cancer at Brookwood Medical Center: Stage I=61, Stage II=24, Stage III=54, Stage IV=110, unknown=25

During the timeframe of April 2009-April 2011, thoracic radiosurgery with the Cyberknife was performed at Brookwood on 52 patients. With a minimum of 6 months of follow-up, there are 44 evaluable patients: Stage I-II=16, Stage III=5, Stage IV=5, recurrent=6, and elsewhere primaries metastatic to lung=12.

For the 16 patients with Stage I-II lung cancer, two have died; one at 10 months with malignant pleural effusion, and one at 19 months with progression to nodal disease. The remaining 14 patients are alive and without evidence of disease (range 6-20 months). For the 12 patients treated for metastatic lesions to the lung, local control was obtained for 11 patients, with 5 patients remaining alive (range 6-24 months).

The excellent results of Cyberknife treatment delivered at Brookwood, for appropriately selected patients with lung tumors, are consistent with the published outcomes and continue to be a promising option.

Sandra Tincher, MD

Radiation Oncologist | Cancer Committee Physician Liaison

¹ ACS Surveillance Research, 2011

² Dosoretz, D. et al. Medically Inoperable Lung Carcinoma: The Role of Radiation Therapy. *Semin Radiation Oncol.* 1996; Vol 6, p98.

³ Timmerman, R. et al. Stereotactic Body Radiation Therapy for Inoperable Early Stage Lung Cancer. *JAMA* 2010; Vol 303, p1070.

⁴ Rusthoven, K. et al. Multi-Institutional Phase III Trial of Stereotactic Body Radiation for Lung Metastases. *JCO* 2009, Vol 27, p1579.

Endometrial Carcinoma

ENDOMETRIAL CARCINOMA IS THE MOST COMMON of the gynecologic malignancies, primarily affecting post-menopausal women. Due to a significant symptom, primarily post-menopausal bleeding, most women are diagnosed at an early stage leading to excellent cure rates. The primary risk factors for endometrial adenocarcinoma are conditions associated with increased circulating estrogen such as morbid obesity, unopposed estrogen use, and infertility. Given that the standard for hormone replacement use includes a progestin when the uterus remains in situ, it is uncommon today to see these cancers arise from unopposed estrogen use.

In patients where endometrial carcinoma is identified, surgical staging and treatment is indicated. Alternatives, such as radiation or hormonal therapy, are generally restricted to medically inoperable patients due to inferior cure rates. Surgical staging traditionally consisted of exploratory laparotomy, total abdominal hysterectomy, bilateral salpingoophorectomy, pelvic and paraaortic lymph node dissection. Over the past decade, minimally invasive surgical approaches have been developed that can accomplish a similar staging procedure. A number of single institution and retrospective reports have suggested that these procedures can be accomplished safely and with decreased morbidity and hospital stay. In order to confirm these findings, the Gynecologic Oncology Group (GOG) completed a randomized study of open procedure versus laparoscopic approach (LAP II). This study confirmed equivalency in surgical recovery of staging tissues, morbidity and long term outcome. More recently, “robotic surgery” has been advanced to broaden the range of potential patients that might undergo a minimally invasive approach.

The surgical staging procedure allows for the procurement of the most information so that administration of adjuvant therapies, such as radiation, may be tailored to individual patients. The use of radiation in the adjuvant setting remains controversial as prospective trials have failed to demonstrate a survival benefit in intermediate risk patients although local pelvic control would seem to be improved in these patients. Patients with Stage I and II disease enjoy excellent cure rates in the range of 75-95%. Retrospective studies using combination surgery and radiation for locally more advanced disease (ie lymph node metastases) suggest cure rates of 40-60%.

Progress in the treatment of early stage endometrial cancer has been realized through completion of randomized clinical trials. GOG study #99 demonstrated that patients with surgical stage I intermediate risk endometrial cancer were randomized to receive adjuvant whole pelvic radiotherapy versus observation. While an expected reduction in local pelvic recurrence was identified, no significant survival advantage was seen in the treated group. This finding has been reinforced through a retrospective review of Stage 1 endometrial cancer at the University of Alabama at Birmingham (Straughn et al Gyn Oncology 84; 194, 2002). In this study 613 patients were identified with surgical stage I disease. The vast majority received no adjuvant therapy and the overall disease free survival in this cohort of women with Stage I cancer was 93% with overall survival of 98%.

It is based on studies such as these that women evaluated by

our Gynecologic Oncology group and undergoing therapy at the Brookwood Hospital are provided with treatment plans. Women diagnosed with endometrial carcinoma at Brookwood hospital have subspecialty consultation (Gynecologic Oncology) that contribute to their surgical management and treatment recommendations. Further consultations are available with radiation oncology and medical oncology as needed. Additionally, the Gynecologic Oncologist on staff are members of GOG CO-operative Group trial mechanism and provide the opportunity for patients to enroll in clinical therapeutic trials.

From 2000 to 2009 a total of 1,142 patients were treated with a diagnosis of endometrial carcinoma at Brookwood Hospital. Consistent with the importance of Brookwood Hospital as a regional cancer referral center, 23% of patients were referred from Jefferson/Shelby county while 77% were referred from other counties (representing 55 counties). Additionally, patients from 8 states outside of Alabama came to Brookwood for their cancer care. Consistent with other centers, 86% of patients were over the age of 50. 86% of patients were caucasian, 13% were African American and 1% were classified as other. The stage distribution was consistent with that observed nationally, as 74% were classified as Stage I. The typical histology was adenocarcinoma in 92% of cases.

The vast majority of patients were managed under the care of a Gynecologic Oncologist and underwent surgical intervention with staging. Consistent with the previous discussion, the use of radiation therapy in the adjuvant setting was limited. When identifying patients with stage I disease, 99% of patients underwent surgical management. With aggressive use of surgical staging, only 2% patients received adjuvant radiation therapy and 3% received adjuvant chemotherapy. These results are consistent with the emphasis of modern therapy to individualize treatment strategies that minimize adjuvant therapies and their attendant potential complications and toxicities in comprehensively staged patients). For patients accessioned during the period (2000-2009), 5-year survival by AJCC stage is listed as follows: Stage I-82%, Stage II-33%, Stage III-33%, and Stage IV-3%. These statistics are consistent with national AJCC data.

When examining the data for Stage I patients, 22% patients were stage IA, 18% patients were stage IC, and 60% were stage IB. As noted previously, novel minimally invasive surgical techniques have been introduced over the past decade. When patients undergoing minimally invasive surgery (i.e. laparoscopic/robotic) versus an “open procedure the year to year survival is as follows:

	Laparoscopic/Robotic	Open
Year 1	.99%	.97%
Year 2	.93%	.93%
Year 3	.91%	.89%
Year 4	.91%	.84%
Year 5	.87%	.81%

Mack N. Barnes, MD

Gynecologic Oncology Representative
Cancer Committee | Brookwood Medical Center



2010-2011

Summary of Cancer Incidence

FOR THE YEAR 2010, 246 cases of breast cancer were diagnosed. Of these, 54 were Stage 0, 106 were Stage 1, 59 Stage II, 16 Stage III, 5 were Stage IV and 6 were unknown or unstageable. Cancer of the uterus was the second most commonly diagnosed malignancy with 129 cases. Of these, 103 were stage I. Lung and bronchus tumors were seen in 117 patients. Unfortunately, only 28 were stage I and nearly one-half (48/117) of these patients presented with stage IV disease. Kidney and renal pelvis tumors represented the fourth most common group with 77 patients. Prostate cancer has replaced ovarian cancer as the fifth most common diagnosis. With the exception of a large number of gynecologic patients due to the presence of the Women's Hospital, incidence is similar to normal trends.

R. Fred Dumas, Jr., MD

Medical Director, Brookwood Cancer Care Center



FIVE YEAR COMPARISON OF ANALYTIC CASES BY SITE (2006-2010)

Site	2006	2007	2008	2009	2010
Breast	233	262	263	260	246
Corpus Uteri	116	133	120	134	127
Lung	97	116	85	129	117
Kidney	45	58	55	87	77
Prostate	103	60	56	49	56
Total	1,134	1,211	1,168	1,324	1,126

DISTRIBUTION BY AGE & SEX (2010)

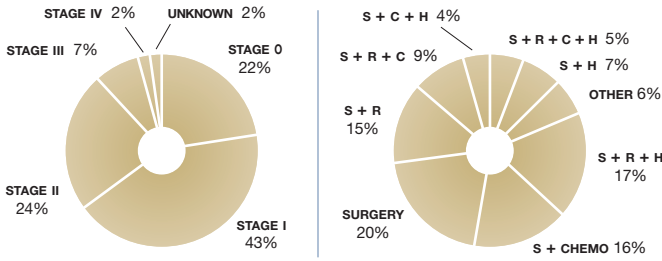
Age	Male	Female	Total
30 - 39	13	47	60
40 - 49	38	97	135
50 - 59	56	181	237
60 - 69	113	224	337
70 - 79	90	130	220
80 - 89	46	61	107
Other	9	21	30
Total	365	761	1,126

INCIDENCE BY COUNTY (2006-2010)

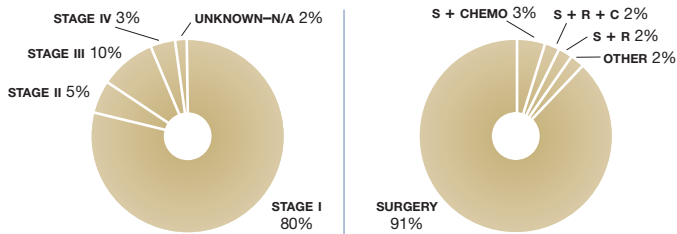
County	2006	2007	2008	2009	2010
Jefferson	539	565	548	618	602
Shelby	200	192	140	157	133
Talladega	65	71	70	77	58
St. Clair	33	29	32	49	35
Walker	34	16	39	45	35
Etowah	25	19	25	34	28
Chilton	37	31	28	29	37
Cullman	22	21	23	28	22
Tuscaloosa	24	30	33	28	25
Montgomery	26	36	15	28	25
Other	300	349	360	424	312
Total	1276	1343	1299	1517	1312

**TOP FIVE PRIMARY SITES (2010)
CANCER BY STAGE, TREATMENT & COMPARISON**

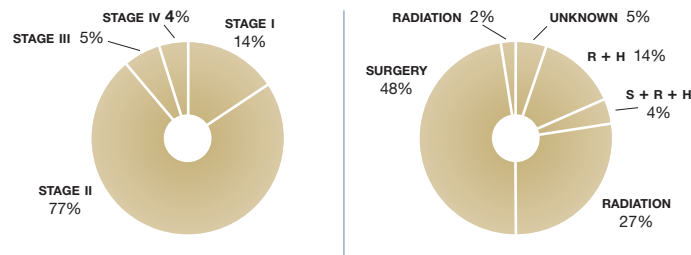
Breast BWMC = 246 | Alabama = 3,450 | U.S. = 207,090



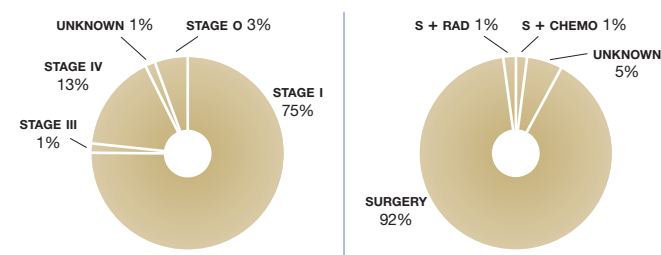
Uterine Corpus BWMC = 127 | Alabama = 520 | U.S. = 43,470



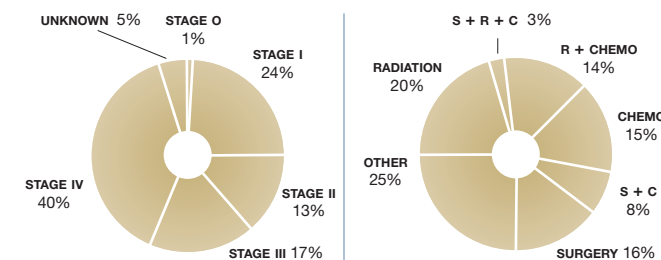
Prostate BWMC = 56 | Alabama = 3,300 | U.S. = 217,730



Kidney BWMC = 77 | Alabama = n/a | U.S. = 58,240



Lung BWMC = 117 | Alabama = 4,160 | U.S. = 222,520



Oncology Services Directory

- Brookwood Medical Center 205-877-1000
- Vice President of Operations 205-877-1893
- Brookwood Cancer Care Center 205-877-2273
- Director of Cancer Services 205-877-1094
- Scheduling Coordinator 205-877-2228
- Nurse for Dr. Fred Dumas 205-877-2209
- Nurse for Dr. Sandra Tincher 205-877-2217
- GYN Inpatient Oncology Unit 205-877-5350
- Inpatient Oncology Unit 205-877-1700
- Nurse Navigator/Oncology Coordinator 205-877-1798
- Nutritional Support/Oncology Dietician 205-877-1033
- Oncology Chaplain/Counselor 205-877-1969
- Ostomy Services 205-877-2582
- Outpatient Medical Oncology 205-877-2256
- Physician Referral 1-888-Brookwood
- Cancer Genetic Testing
- Carla Mason, MS, Genetic Counselor, Manager 205-877-5298
- Janet Dees, RN, OCN, Oncology Coordinator 205-877-1798

Additional Support Services

- Alabama Foundation for Oncology 205-877-2225
- American Cancer Society 1-800-ACS-2345
- Camp New Hope 205-877-2224
- Camp for children of cancer patients*
- Camp Newsong 205-877-2224
- Camp for children who have had a family member die*
- Cancer Registry 205-877-1383
- Hope Lodge 1-888-513-9933
- Brookwood Health Information Center 1-888-Brookwood
- Transportation Information 205-877-1798
- Women's Diagnostic Center 205-877-5200
- Digital mammography, CAD, ultrasound and bone density*

Cancer Support Groups

- Gynecologic Cancer 205-975-9523
- For women with GYN cancer*
- Look Good Feel Better 205-877-1969
- Free class on makeup application and hair care during cancer treatment*
- Man to Man 1-800-ACS-2345
- For men with prostate cancer*
- Reach to Recovery 1-800-ACS-2345
- Information on exercises for breast surgery recovery, including range of motion exercises for surgical arm*
- STRETCH 1-800-ACS-2345
- Exercise class designed especially for women following breast surgery*
- T.O.U.C.H. (Today Our Understanding of Cancer is Hope) 205-877-1969
- For patients with any type cancer and loved ones*

Cancer Committee

CHAIRMAN

R. Fred Dumas, Jr., MD
Tumor Conference Coordinator
Chairman Cancer Committee

PHYSICIAN MEMBERS

Mack N. Barnes, III, MD
Gynecology/Oncology

Luigi Bertoli, MD
Hematology/Oncology

William DeVos, MD
Pathology

Jeffrey Albright, MD
General Surgery

April Maddux, MD
General Surgery

Gregory Jackson, MD
Radiology

Khaleel Ashraf, MD
Medical Oncology

Sandra Tincher, MD
Radiation Oncology/
Physician Liaison

Charles Shumate, MD
Consultant

Bradley Dennis, MD
Chief Medical Officer

NON-PHYSICIAN MEMBERS

Billy Connelley, Jr., MSHA
Vice President, Operations

Jenni Fisher, BS, CMD, RT(T)
Director, Cancer Services

Ellen Carmichael, CRNP
Quality Improvement
Coordinator

Carla Mason, MS
High Risk Breast and Ovarian
Center

Janet Dees, OCN, MBA
Outreach Coordinator

Judy Smith, RHIA, CTR
Cancer Registry Coordinator

Karen Litwiniec, PharmD
Manager, Pharmacy Services

Christy Nation, RN
Director, Women's 3

Cheryl Smith, RN
Director, 7 Main

Herb Robertson, M.Div.
Pastoral Care Coordinator

Tracy Flanagan, RHIT, CTR
Cancer Registrar

Laura Ann Walley, RN, MSN
Director, Medical Staff/
Performance Improvement

Cindy Krueger, LGSW
Social Worker

Hillary Palmer, MS, RD
American Cancer Society

Oncology Program Statistics

ONCOLOGY CONFERENCES

Total cases presented	194
Prospective cases presented	203
Percent of Prospective cases	98%
Percent Analytic cases presented	17%
Cancer conferences	40
Average staff attendance	8

CANCER REGISTRY

Total cases	1,312
Analytic cases	1,126
Non-analytic cases	186
Case Submission Timeliness Rate	90%
Cases in registry since reference date	17,945
Follow-up contacts	9,507
Follow-up rate Reference Year (1993)	88%
Five-Year Follow-up rate	91%
Percent of Cases Evaluated for Quality Control	12%
Number of Analytic Cases Reviewed for Quality Control	138
Accuracy of Collaborative Staging	98%
Alabama Statewide Cancer Registry Accuracy Rate	100%

References

Cancer Facts & Figures 2010 | American Cancer Society

Alabama Cancer Facts & Figures 2010 | American Cancer Society & Alabama Statewide Cancer Registry

AJCC Cancer Staging Manual, 7th Edition | American Joint Committee on Cancer | Springer | Chicago, IL 2009

International Classification of Diseases for Oncology, 3rd Edition
World Health Organization | Geneva, Switzerland, 2000

Facility Oncology Registry Data Standards (FORDS) | American College of Surgeons | Commission on Cancer | Chicago, IL, 2007

Collaborative Stage Data Collection System, Version 2 | American Joint Commission on Cancer | U.S. Department of Health and Human Services | Chicago, IL 2010

*SEER*Rx Interactive Drug Database* | National Cancer Institute Surveillance, Epidemiology and End Results Program | Bethesda, MD

SEER Summary Staging Manual 2000 | Cancer Surveillance, Epidemiology and End Results Program | National Institute of Health | National Cancer Institute | Bethesda, MD, 2001

Multiple Primary and Histology Coding Rules | Field Study Manual | National Cancer Institute | Surveillance Epidemiology and End Results Program | Bethesda, MD, 2007

2010 Hematopoietic and Lymphoid Neoplasm | Case Reportability and Coding Manual | National Cancer Institute | Bethesda, MD 2010

Primary Site Table

2010 Analytic Cases

PRIMARY SITE	TOTAL	SEX		AJCC STAGE AT DX						
		M	F	0	I	II	III	IV	UNK	N/A
Lip	1	0	1	0	0	0	0	0	1	0
Tongue, NOS	2	0	2	0	1	0	1	0	0	0
Salivary Glands	1	1	0	0	0	0	0	0	1	0
Gum & Other	3	1	2	0	0	0	1	2	0	0
Tonsil	2	1	1	0	0	0	0	2	0	0
Esophagus	4	3	1	0	1	1	0	2	0	0
Stomach	9	3	6	0	3	1	1	4	0	0
Small Intestine	6	2	4	0	0	1	2	2	1	0
Colon	54	28	26	1	10	14	16	13	0	0
Rectum & Rectosigmoid	19	10	9	1	9	5	3	0	1	0
Anus	6	2	4	0	1	3	1	0	1	0
Liver/Intrahepatic Bile Duct	2	1	1	0	0	1	1	0	0	0
Gallbladder	2	0	2	0	0	0	1	1	0	0
Other Biliary	3	3	0	0	0	1	0	0	2	0
Pancreas	15	12	3	0	1	3	3	7	1	0
Retroperitoneum	1	1	0	0	0	0	0	1	0	0
Peritoneum, Omentum & Mesentery	12	0	12	0	0	0	12	0	0	0
Nasal Cavity	1	0	1	0	1	0	0	0	0	0
Larynx	5	2	3	0	3	1	1	0	0	0
Bronchus/Lung	117	66	51	0	28	15	20	48	6	0
Trachea, Med & Other Respiratory	1	1	0	0	0	0	0	0	1	0
Soft Tissue	7	1	6	0	2	1	2	2	0	0
Skin	20	8	12	4	8	0	0	3	1	4
Breast	246	1	245	54	106	59	16	5	5	1
Cervix	20	0	20	0	10	2	7	1	0	0
Corpus Uteri	129	0	129	0	103	6	13	5	0	2
Ovary	49	0	49	0	11	4	33	1	0	0
Vagina	3	0	3	1	0	1	0	0	1	0
Vulva	33	0	33	11	14	2	4	0	1	1
Other Female	3	0	3	0	0	2	0	1	0	0
Prostate	56	56	0	0	8	43	3	2	0	0
Testis	9	9	0	0	7	0	2	0	0	0
Penis	2	2	0	1	0	1	0	0	0	0
Bladder	42	28	14	23	9	5	4	1	0	0
Kidney & Renal Pelvis	77	44	33	2	58	6	1	10	0	0
Ureter	5	3	2	2	1	1	1	0	0	0
Other Urinary Organs	1	1	0	0	0	0	1	0	0	0
Eye and Orbit	1	0	1	0	0	0	0	0	0	1
Brain	16	9	7	0	0	0	0	0	0	16
Other Nervous System	38	16	22	0	0	0	0	0	0	38
Thyroid	16	6	10	0	12	2	1	1	0	0
Other Endocrine	3	2	1	0	0	0	0	0	0	3
Hodgkin Lymphoma	6	4	2	0	0	4	0	2	0	0
Non-Hodgkin Lymphoma	29	12	17	0	4	9	5	9	2	0
Multiple Myeloma	13	6	7	0	0	0	0	0	0	13
Leukemia	16	9	7	0	0	0	0	0	0	16
Mesothelioma	2	2	0	0	0	1	0	1	0	0
Miscellaneous	18	8	10	0	0	0	0	0	0	18
TOTAL ANALYTIC	1126	365	761	100	411	195	156	126	24	114

M = Male | F = Female

Unk. = Unknown Stage | N/A = Benign cases or cases not staged by AJCC



BROOKWOOD MEDICAL CENTER

2010 Brookwood Medical Center Drive

Birmingham, Alabama 35209

(205) 877-1000 | bwmc.com