

# Greater Baltimore Medical Center Sandra & Malcolm Berman Cancer Institute

## Cancer Registry Report

The Cancer Data Management System/ Cancer Registry collects data on all types of cancer diagnosed or treated in an institution and is one of the four major components of an approved cancer program. From the reference or starting date of January 1, 1990, through December 31, 2007, GBMC's Cancer Registry has abstracted into its database the demographic, diagnostic, staging, treatment and follow-up information on 34,584 cancer cases. To ensure accurate survival statistics, the Registry is required to follow these patients annually. GBMC's follow-up rate is 97 percent.

All data are reported quarterly to the Maryland Cancer Registry (MCR), which is part of the Maryland Department of Health and Mental Hygiene, and annually to the National Cancer Database (NCDB), the data management system for hospitals and programs approved by the Commission on Cancer. Co-sponsored by the American Cancer Society and the American College of Surgeons, the NCDB uses submitted data for comparative studies that evaluate oncology care and provides a Benchmark Summary of Cancer Care and Survival in the United States. The Cancer Committee at the Greater Baltimore Medical Center authorized our facility's 2006 data submission to the NCDB, which included site and stage data, to be posted to the American Cancer Society (ACS) web site ([www.cancer.org](http://www.cancer.org)). This Facility Information Profile System (FIPS) allows patients to view the types of

cancers diagnosed and treated at a particular facility and can help patients make more educated decisions about their cancer care.

The MCR uses data to evaluate incidence rates for the entire state, and compares data by region and county; they also participate in national studies. In addition to required reporting, the Cancer Registry at GBMC provides data for physician studies and educational conferences. The Maryland Cancer Registry, the National Cancer Database and the Greater Baltimore Medical Center and its Sandra & Malcolm Berman Cancer Institute support websites.

One part-time and three full-time Certified Tumor Registrars and a part-time follow-up clerk staff the Cancer Registry at GBMC. For additional information, call 443-849-8063.

## Analysis

The Cancer Registry accessioned 2,018 cases during calendar year 2007. Of these, 1,918 were analytic cases — those patients who were initially diagnosed at GBMC and/or received all or part of their first course of treatment at GBMC. The 100 non-analytic cases were initially diagnosed and treated at other facilities before referral to GBMC for additional treatment for recurrent disease or were initially diagnosed or treated at GBMC prior to January 1, 1990. Many of these non-analytic patients chose to be treated in one of the many clinical trials available at GBMC.

In addition, the Cancer Registry reported 12 patients with benign brain and central nervous system (CNS) tumors to the MCR. Beginning in January 2004, all hospital registries in the United States were required to collect data on both malignant and non-malignant CNS tumors and follow these patients for their lifetime. These patients are part of the Central Brain Tumor Registry of the United States (CBTRUS).

In 2007, the average age at diagnosis for males at GBMC was 64.9 years; for females, it was 60.5 years.

The racial distribution of cases includes 83.9% Caucasian, 14.8% African-American, 1% Asian and 0.3% other. While 52.5% of patients diagnosed or treated at GBMC live in Baltimore County and 18.7% live in Baltimore City, patients come from 18 other Maryland counties, Pennsylvania, Delaware, and other states for treatment.

## Site Distribution

Breast cancer continues to be the most frequently diagnosed and/or treated cancer at GBMC, with 527 analytic cases. The second most common cancer at GBMC is prostate with 221 analytics, followed by lung (160 analytics), colon/rectum (153 analytics) and thyroid (79 analytics).

*(Tables 1 and 2)*

The American Cancer Society's Surveillance Research estimated that 26,390 new cancer cases would be diagnosed in Maryland in 2007. That same year, GBMC diagnosed and/or treated an increased number of cancers of the prostate (221 compared to 205 in 2006) and esophagus (12 compared to 9 in 2006). In addition, the total number of head and neck cancers seen at GBMC increased from 183 in 2006 to 203 in 2007. Gynecological cancers increased from 194 to 246. The number of lymphomas diagnosed and/or treated at GBMC increased from 66 to 78. ►

**Table 1 ■ GBMC Site Distribution ■ All Cases 2007**

Primary Site	Total Cases	Analytic	Non-Analytic	Male	Female
<b>GENITOURINARY</b>	338	317	21	299	39
Prostate	232	221	11	232	0
Renal	44	42	2	24	20
Bladder	50	43	7	31	19
Other GU	12	11	1	12	0
<b>BREAST</b>	545	527	18	6	539
<b>GASTROINTESTINAL</b>	265	253	12	118	147
Esophagus	13	12	1	11	2
Stomach	20	19	1	10	10
Colon/Rectum	159	153	6	66	93
Anal	20	19	1	8	12
Pancreas	27	24	3	11	16
Other GI	26	26	0	12	14
<b>GYNECOLOGIC</b>	258	246	12	0	258
Cervix Uteri	92	90	2	0	92
Corpus Uteri	84	80	4	0	84
Ovary	44	42	2	0	44
Other Gyn	38	34	4	0	38
<b>HEAD AND NECK</b>	213	203	10	103	110
Oral Cavity	35	32	3	16	19
Pharynx	38	38	0	26	12
Salivary Gland	13	13	0	6	7
Larynx	34	31	3	24	10
Thyroid	83	79	4	24	59
Other Head & Neck	10	10	0	7	3
<b>LUNG</b>	164	160	4	88	76
<b>LYMPH NODES</b>	59	53	6	28	31
<b>BONE MARROW</b>	49	43	6	23	26
<b>SKIN*</b>	64	56	8	32	32
<b>SOFT TISSUE SARCOMA</b>	5	5	0	3	2
<b>CNS</b>	14	13	1	10	4
<b>OTHER</b>	16	15	1	9	7
<b>UNKNOWN PRIMARY</b>	28	27	1	14	14
<b>ALL SITES TOTAL</b>	2,018	1,918	100	733	1,285

\*Skin – Excludes basal/squamous skin cancers

Source: GBMC Cancer Registry Database

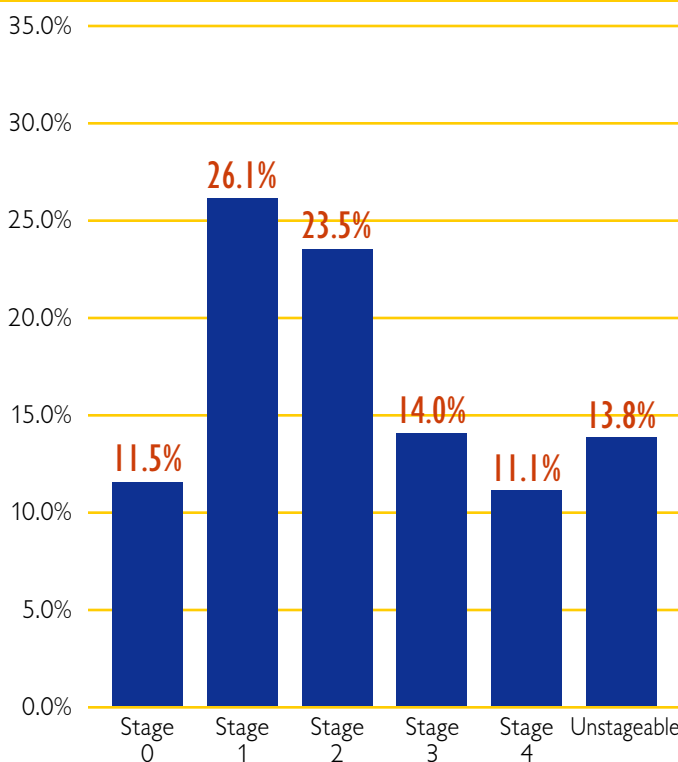


**Table 2 ■ GBMC Site Distribution by Sex 2007**  
Based on 1,918 Analytic Cases

Males	693 (36%)	Females	1,225 (64%)
Melanoma	16 (2.3)	Melanoma	22 (1.8)
Oral	37 (5.3)	Oral	25 (2.0)
		Breast	522 (42.6)
Lung	83 (12.0)	Lung	72 (5.9)
Pancreas	8 (1.2)	Pancreas	15 (1.2)
Stomach	7 (1.0)		
Colon/Rectum	61 (8.8)	Colon/Rectum	89 (7.3)
		Ovary	40 (3.3)
		Uterus	153 (12.5)
Urinary	51 (7.4)	Urinary	34 (2.8)
Prostate	221 (31.9)		
Leukemia & Lymphoma	46 (6.6)	Leukemia & Lymphoma	50 (4.1)
All Other	163 (23.5)	All Other	203 (16.6)

\*Key ##### Number of Cases (##.##% of Column Total)  
© 1997, Onco, Inc. – Numbers based on ACS All Sites distribution

**Table 3 ■ AJCC Stage at Diagnosis 2007**  
Based on 1,918 Analytic Cases



Source: GBMC Cancer Registry – 1,918 analytic cases

## Staging

To help the physician evaluate the patient's disease at diagnosis, estimate prognosis, guide treatment, evaluate therapy and access the results of early cancer detection, the American Joint Committee on Cancer (AJCC) has established a TNM Staging Classification based on the premise that cancers of similar sites and histologies share similar patterns of growth and extension. In the TNM staging system, T relates to extent of the primary tumor, N relates to lymph node involvement and M indicates the presence of distant metastases. The combination of the TNM provides a stage group classification of Stage 0, 1, 2, 3, 4, or unstageable. Cancers may be unstageable because no AJCC staging classification exists for the site. For example, leukemias, unknown primaries and primary brain tumors cannot be staged using the AJCC criteria. Also, patients may be unstageable because they choose to forego treatment or further testing needed to determine the appropriate stage. At diagnosis, 11.5% of GBMC's 1,918 analytic cases were Stage 0 (in situ), the earliest stage tumors. In general, the survival rates for in-situ cancers are higher than for those of invasive cancers. Of the invasive cancers, 26.1% were Stage 1; 23.5% were Stage 2; 14% were Stage 3; 11.1% were Stage 4; and 13.8% had no AJCC stage for the site or were unstageable. (Table 3) ■

August 4, 2008



# Focus: Carcinoma of the Tonsil

By, Eva Zinreich, MD

In 2007, head and neck cancer was the fifth most common cancer with incidence of 780,000 new cases a year worldwide and an estimated 45,000 new cases in the United States. The incidence rate is more than twice as high in men as in women.

Using Cancer Registry data for GBMC, we evaluated patients with advanced stage cancer of the tonsil for the period 1996-2002 and compared the results with the National Cancer Data Base (NCDB). The majority of our patients were Stage III and IV (53 patients). Twelve patients were Stage I and II. The incidence ratio of men/women was 50/16 (75.8 percent / 24.2 percent) and corresponds to the national numbers. **(Table 1)**

Compared to current cases (15 patients in 2007), the age distribution has changed slightly since the studied period (1996-2002) with a shift to younger age in 2007. **(Table 2)**

The five-year survival of patients treated at GBMC during 1996 - 2002 compares favorably with the National Cancer Data Base. **(Table 3)** The five-year survival for Stage III was 85.7 percent versus 63.4 percent and for Stage IV patients it was 62.2 percent versus 51.7 percent (GBMC / NCDB). **(Figure 1)**

The treatment for tonsil cancer in this study period was surgery for early stage cancer. For advanced stage, surgery was followed by post-operative radiation therapy with very few patients receiving post-operative chemotherapy. **(Tables 3a, 3b)**

Since 2000, the treatment of tonsil cancer has changed. For patients with advanced oropharyngeal cancer that includes the base of tongue and the tonsillar fossa, treatment involves organ preservation using radiation therapy and chemotherapy. Surgery is then applicable for residual disease.

At GBMC, for advanced nodal involvement (N2-3 patients), we use hyper-fractionated

radiation therapy and chemotherapy, followed by neck dissection. Our results with a median follow-up of 27 months showed a survival rate of 83 percent, and the disease-free survival was 78 percent. We found at surgery that 20 percent of our patients still harbor microscopic disease in the neck nodes, thus the need for neck dissection.

To facilitate this multi-modal treatment, we have instituted a multidisciplinary approach.

A dedicated head and neck group is in place and includes: head and neck surgeons, radiation and medical oncologists, speech pathologists, social workers, dieticians, nurses and a specialized orthodontist. All members have a major impact in the therapeutic decision-making, keeping in mind that prolonging longevity, maintaining quality of life with least side effects and preventing complications are the objectives.

Multi-modal treatment in advanced head and neck cancer emerged as the standard of care for these patients. The newest technology affords improved local control and reduces the side effects and complications. Newer radiation techniques such as IMRT reduced the occurrence of local toxicities such as xerostomia, and therefore improved the quality of life in our patients. Our intention is to help develop and rapidly adopt treatment advances to provide the highest quality of care and best quality of life for our referred patient population.

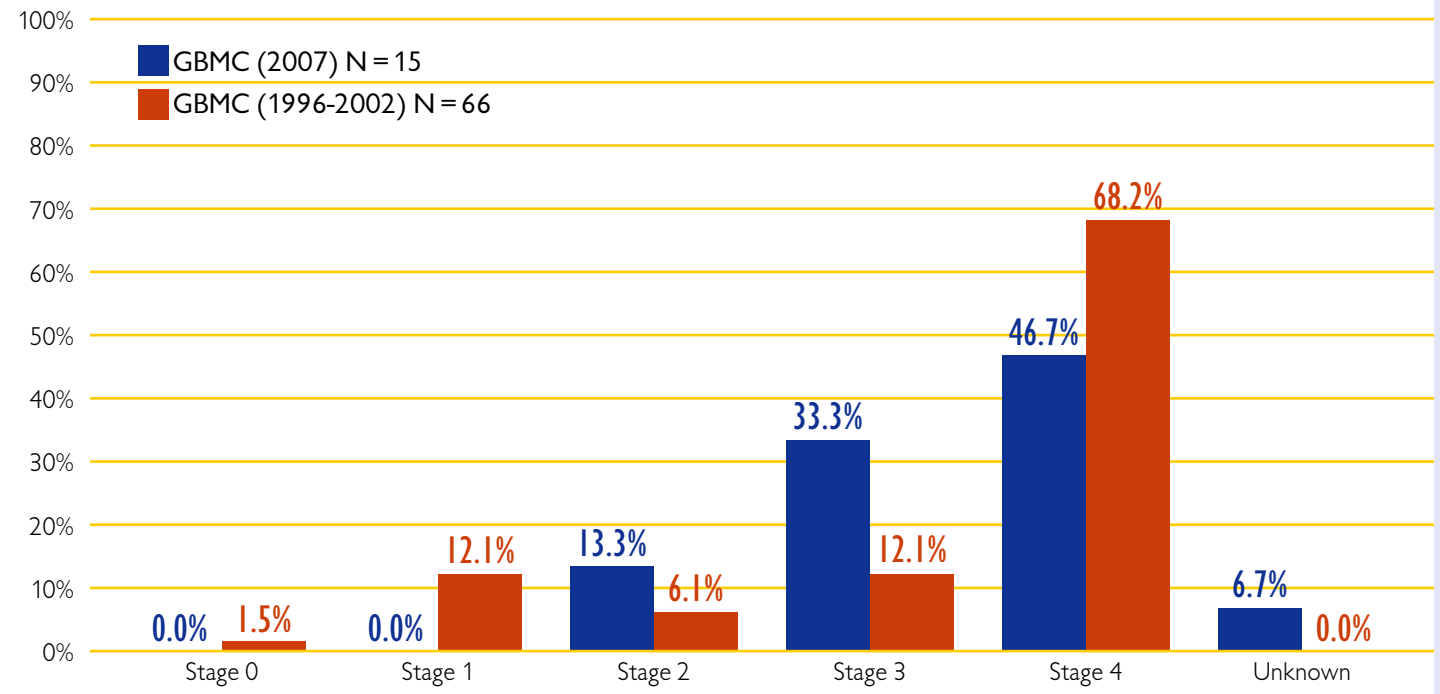
While alcohol and tobacco abuse are known risk factors, the presence of the HPV virus in pre-treatment biopsies may also be a factor that may influence the chosen type of treatment and expected response.

The aim is to be able to predict tumor behavior and the potential for metastasis. Understanding these issues will shape the appropriate selection of optimal therapy. ■



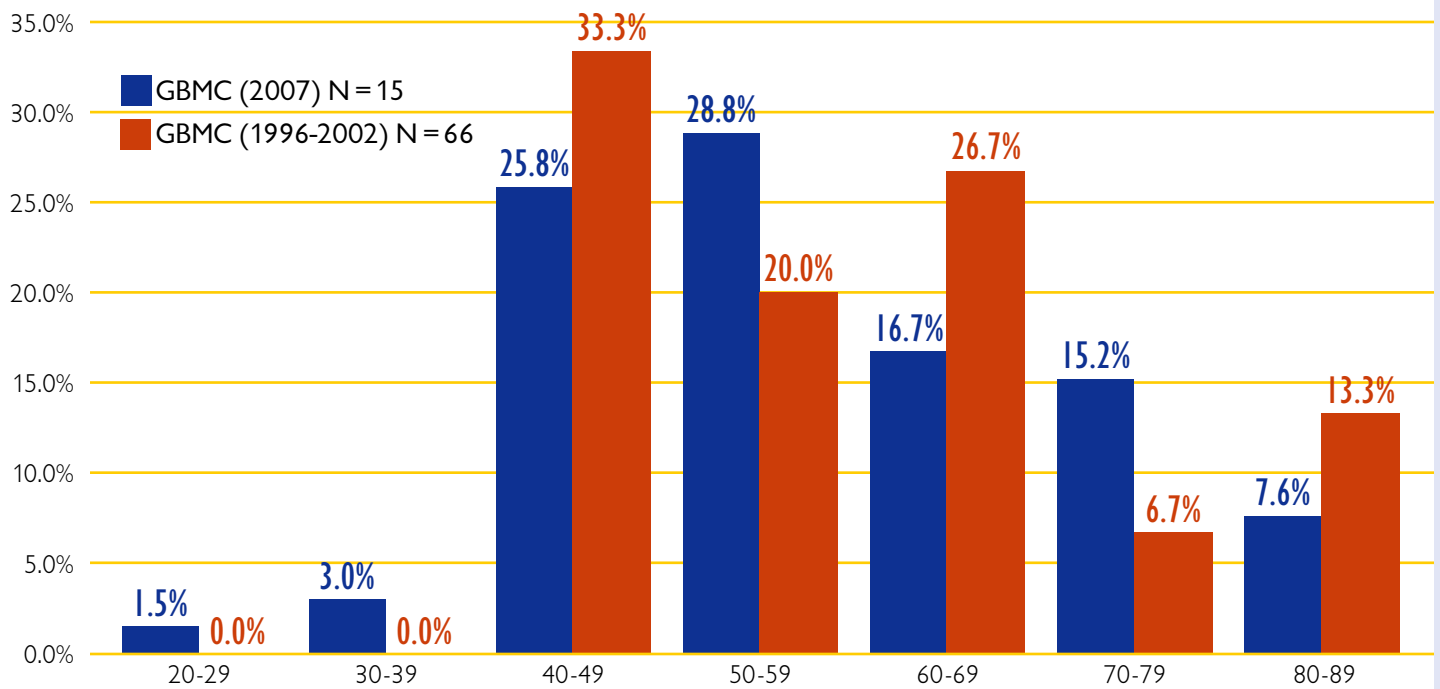


**Table 1** ■ Tonsillar Cancer ■ Comparison of AJCC Staging



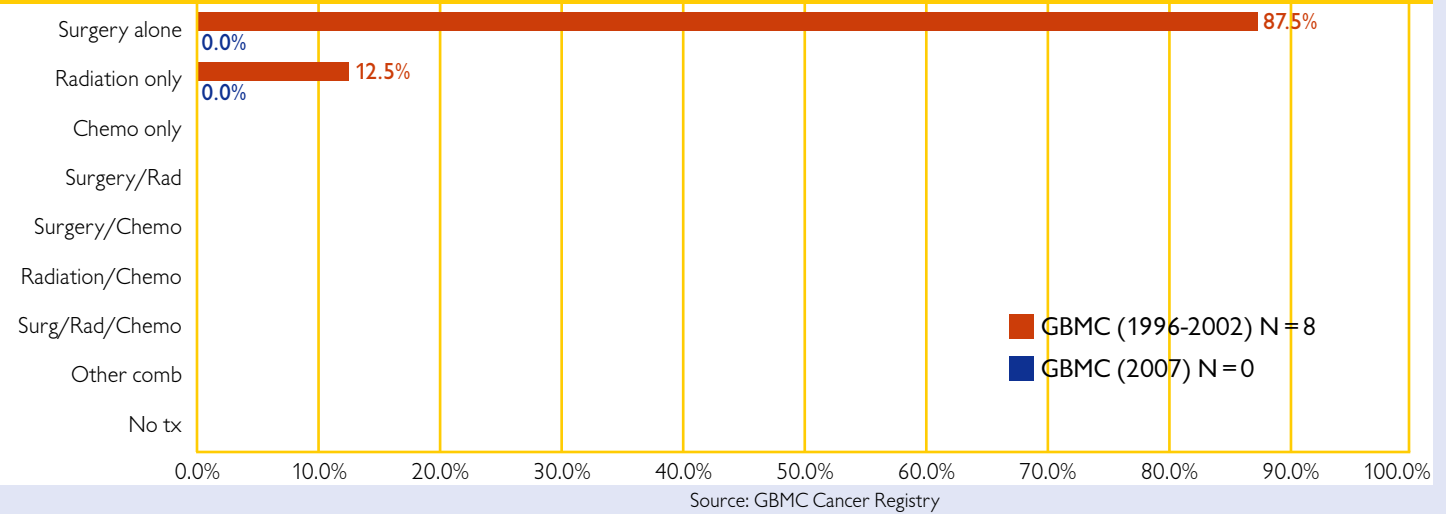
Source: GBMC Cancer Registry

**Table 2** ■ Tonsillar Cancer ■ Age at Diagnosis

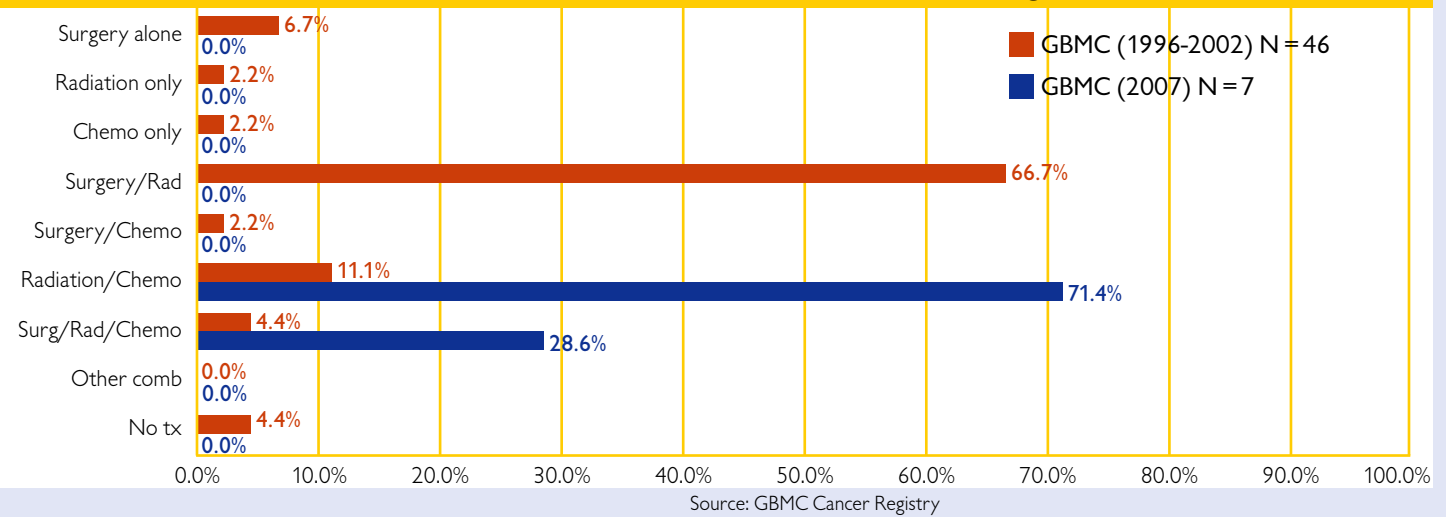


Source: GBMC Cancer Registry

**Table 3a** ■ Treatment Combinations ■ Tonsillar Cancer at GBMC ■ Stage 1



**Table 3b** ■ Treatment Combinations ■ Tonsillar Cancer at GBMC ■ Stage 4



**Figure 1** ■ Five-Year Survival ■ Tonsillar Cancer at GBMC 1996-2002

- Stage 1 GBMC    ●●● Stage 1 NCDB
- ◆ Stage 2 GBMC    ●●● Stage 2 NCDB
- ▲ Stage 3 GBMC    ●●● Stage 3 NCDB
- Stage 4 GBMC    ●●● Stage 4 NCDB

**5 Year Observed Survival Rate**

	GBMC (1996-2002)	NCDB (1998-2000)
Stage 1	N = 8    38%	N = 445    65.8%
Stage 2	N = 4    75%	N = 893    67.9%
Stage 3	N = 8    85.7%	N = 1793    63.4%
Stage 4	N = 45    62.2%	N = 4539    51.7%

Data from the NCDB/Commission on Cancer 2008

