





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 five major components of a Commission on Cancer (CoC) accredited cancer program. From the reference or starting date of January 1, 1990, through December 31, 2008, GBMC's Cancer Registry has abstracted into its database the demographic, diagnostic, staging, treatment, and follow-up information on 36,506 cancer cases. To ensure accurate survival statistics, the Registry is required to follow these patients annually. GBMC's follow-up rate is 99%.



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 2007 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). 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 web sites.

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 1,903 cases during calendar year 2008. Of these, 1,809 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 94 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 10 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 2008, the average age at diagnosis for males at GBMC was 64; for females, it was 62.3.

The racial distribution of cases includes 84.2% Caucasian, 13.8% African-American, 1% Asian and 1% other. While 54.3% of patients diagnosed or treated at GBMC live in Baltimore County and 15.9% live in Baltimore City, patients come from 17 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 500 analytic cases. The second most common cancer at GBMC is prostate with 201 analytics, followed by colon/rectum (153 analytics), lung (132 analytics), and thyroid (85 analytics). (Tables 1 and 2)

The American Cancer Society's Surveillance Research estimated that 27,380 new cancer cases would be diagnosed in Maryland in 2008. That same year, GBMC diagnosed and/or treated an increased number of cancers of the kidney/renal pelvis (56 compared to 42 in 2007); and anal cancers (29 compared to 19 in 2007). In addition, the total number of head and neck cancers seen at GBMC increased from 203 in 2007 to 218 in 2008. ►

Table 1 ■ GBMC Site Distribution ■ All Cases 2008

Primary Site	Total Cases	Analytic	Non-Analytic	Male	Female
GENITOURINARY	339	307	32	298	41
Prostate	218	201	17	218	0
Renal	63	56	7	37	26
Bladder	41	34	7	29	12
Other GU	17	16	1	14	3
BREAST	511	500	11	2	509
GASTROINTESTINAL	251	246	5	122	129
Esophagus	7	6	1	5	2
Stomach	17	17	0	14	3
Colon/Rectum	157	153	4	74	83
Anal	29	29	0	13	16
Pancreas	25	25	0	13	12
Other GI	16	16	0	8	8
GYNECOLOGIC	187	179	8	0	187
Cervix Uteri*	32	31	1	0	32
Corpus Uteri	67	63	4	0	67
Ovary	46	44	2	0	46
Other Gyn	42	41	1	0	42
HEAD AND NECK	250	231	19	127	123
Oral Cavity	48	43	5	26	22
Pharynx	54	51	3	44	10
Salivary Gland	15	14	1	10	5
Larynx	32	29	3	22	10
Thyroid	92	85	7	21	71
Other Head & Neck	9	9	0	4	5
LUNG	135	132	3	68	67
LYMPH NODES	62	59	3	33	29
BONE MARROW	43	38	5	20	23
SKIN*	53	51	2	37	16
SOFT TISSUE SARCOMA	9	8	1	2	7
CNS	27	24	3	17	10
OTHER	11	10	1	5	6
UNKNOWN PRIMARY	25	24	1	15	10
ALL SITES TOTAL	1,903	1,809	94	746	1,157

*Cervix – Excludes CIN 3

*Skin – Excludes basal/squamous skin cancers

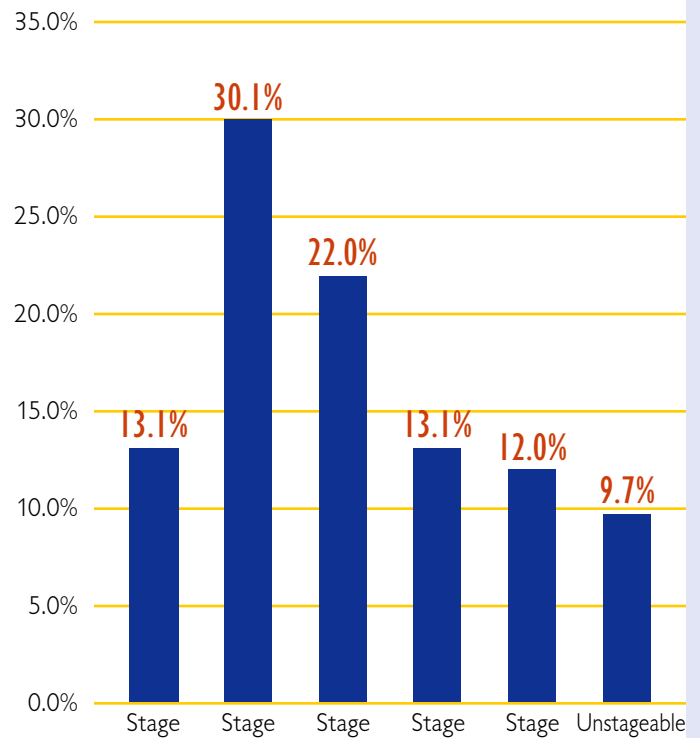
Source: GBMC Cancer Registry Database

Table 2 ■ GBMC Site Distribution by Sex 2008
Based on 1,809 Analytic Cases

Males		689 (39%)	Females		1,111 (61%)
Melanoma	22	(3.2)	Melanoma	11	(1.0)
Oral	62	(8.9)	Oral	27	(2.4)
			Breast	498	(44.8)
Lung	68	(9.8)	Lung	62	(5.6)
Pancreas	13	(1.9)	Pancreas	11	(1.0)
Stomach	8	(1.1)			
Colon/Rectum	70	(10.0)	Colon/Rectum	78	(7.0)
			Ovary	44	(4.0)
			Uterus	79	(7.1)
Urinary	56	(8.0)	Urinary	37	(3.3)
Prostate	201	(28.8)			
Leukemia & Lymphoma	45	(6.5)	Leukemia & Lymphoma	41	(3.7)
All Other	153	(21.9)	All Other	223	(20.1)

Source: GBMC Cancer Registry
© 1997, Onco, Inc. – Numbers based on ACS All Sites distribution

Table 3 ■ AJCC Stage at Diagnosis 2008
Based on 1,809 Analytic Cases



Source: GBMC Cancer Registry – 1,809 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, 13.1% of GBMC's 1,809 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, 30.1% were Stage 1, 22% were Stage 2, 13.1% were Stage 3, 12% were Stage 4, and 9.7% had no AJCC stage for the site or were unstageable. (Table 3) ■



Focus: Cancer of the Kidney

By Gary Cohen, MD and David Goldstein, MD

Kidney cancer has been classically characterized by the clinical syndrome of hematuria, back pain and fever, all of which commonly suggest advanced stages. However, with the advent of more common abdominal imaging, these malignancies are now often detected in earlier stages. Kidney cancer includes malignancies originating in the renal parenchyma and those in the renal pelvis. Nearly 50,000 cases are diagnosed in the U.S. each year and these tumors are also frequently diagnosed and treated at GBMC. Histologies include transitional cell in the renal pelvis and primarily adenocarcinoma (clear cell) in the renal parenchyma.

In the National Cancer Data Base (NCDB) 49% of patients are diagnosed with stage I disease and only 14% have stage IV at presentation (Table 2). Seventy percent of patients fall in the age range of 50 to 80 years (Table 1). Males represent 62% of all cases nationally. Statistics at GBMC are similar to those of NCDB, although our gender distribution is more even, with 54% males and 46% females. There are no clear risk factors for kidney cancer, although

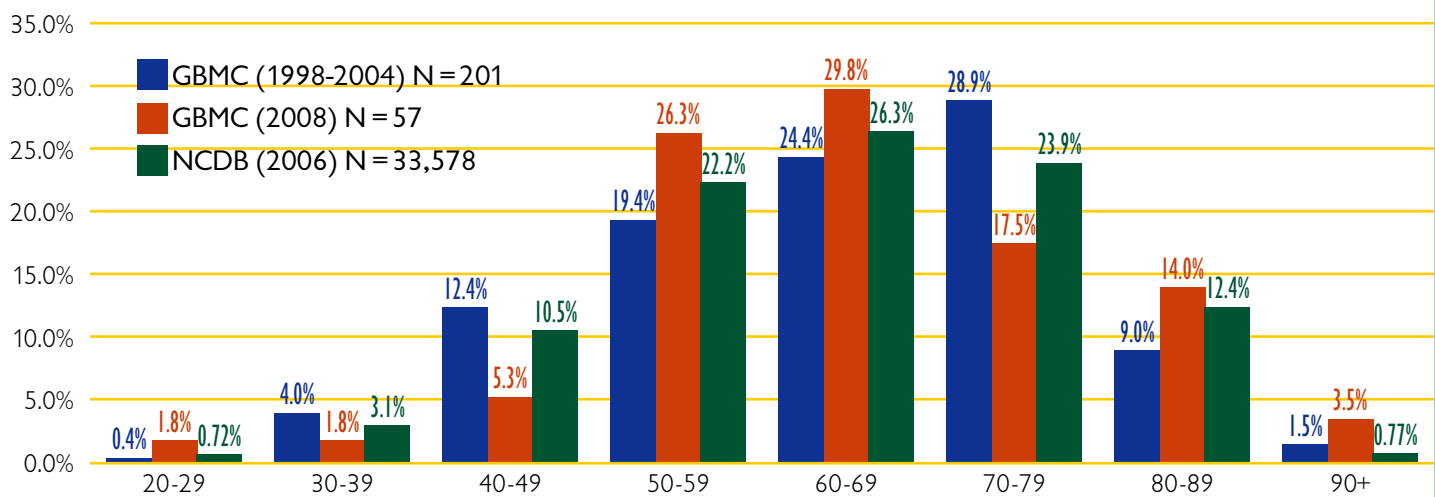
increased incidence is noted in certain families with rare genetic syndromes.

Surgery is the most critical component of treatment for patients with early stage renal cell cancers. Surgery also has some role in patients with metastatic disease. New, minimally invasive surgical techniques such as robotic assisted laparoscopic partial nephrectomy, as well as cryo- and radio-frequency ablation, have expanded available options for patients. These are especially advantageous in patients with co-morbid disease or renal impairment.

Review of GBMC tumor registry data indicates a far higher proportion of patients at the hospital presenting with metastatic disease compared to the NCDB (23% at GBMC vs. 14% nationally) (Table 2). Nevertheless, the average overall 5-year survival of patients at GBMC is virtually identical to national statistics at 56%.

Renal cell cancer has traditionally been considered a malignancy that is highly resistant to chemotherapy. The introduction of biologic therapy (interleukin-2) in the ➤

Table 1 ■ Kidney and Renal Pelvis Cancer ■ Age at Diagnosis



Source: GBMC Cancer Registry, NCDB Benchmark Reports v9.0

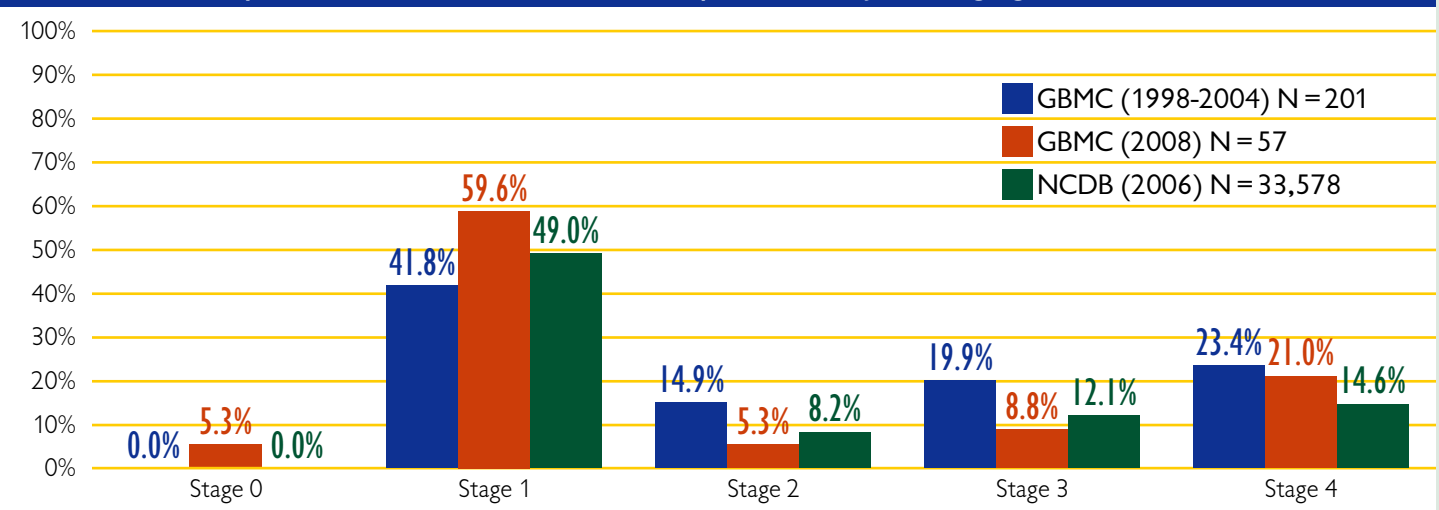
Focus: Cancer of the Kidney (continued)

1990s changed the paradigm of treatment options for the first time, although the treatment was very complicated, toxic and yielded only minimal (but at times dramatic) success. GBMC is one of only a few hospitals nationwide employing this treatment modality for selected cases. We are fortunate to have several new drugs added to our arsenal for patients with advanced disease. Indeed, GBMC tumor registry data indicates that nearly 60% of kidney cancer patients with advanced disease received some form of chemotherapy in

2008, compared to only 21% in the base years of 1998 to 2004 (*Table 3d*).

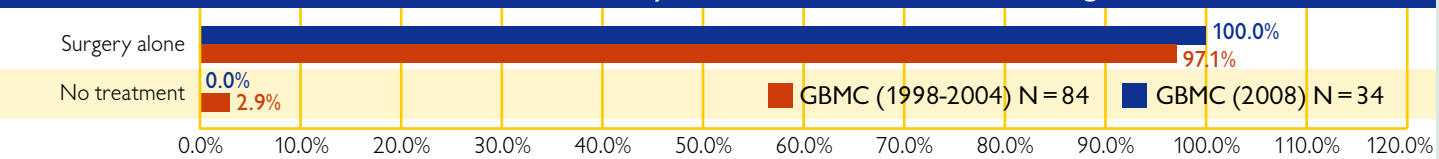
Studies at GBMC are now incorporating these new agents into regimens for metastatic disease and as post-surgical adjuvant therapy to hopefully mark the first real progress in changing overall survival since the introduction of nephrectomy itself. Ideally, these NCI studies will move the bar of five-year survival from single digits to far more significant numbers of survivors among patients with metastatic disease. ■

Table 2 ■ Kidney and Renal Pelvis Cancer ■ Comparison of AJCC Staging



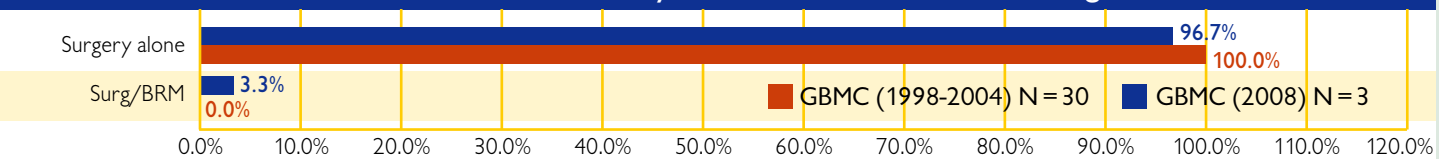
Source: GBMC Cancer Registry, NCDB Benchmark Reports v9.0

Table 3a ■ Treatment Combinations ■ Kidney and Renal Pelvis Cancer ■ Stage 1



Source: GBMC Cancer Registry

Table 3b ■ Treatment Combinations ■ Kidney and Renal Pelvis Cancer ■ Stage 2



Source: GBMC Cancer Registry

Table 3c ■ Treatment Combinations ■ Kidney and Renal Pelvis Cancer ■ Stage 3

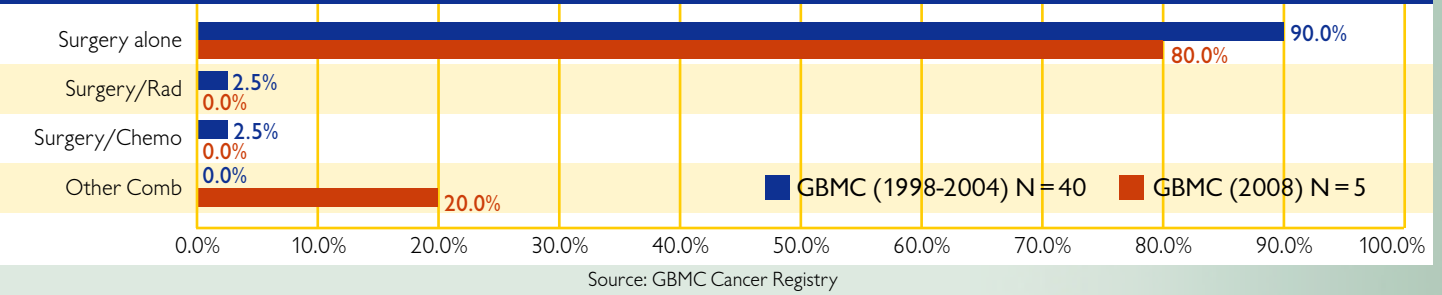


Table 3d ■ Treatment Combinations ■ Kidney and Renal Pelvis Cancer ■ Stage 4

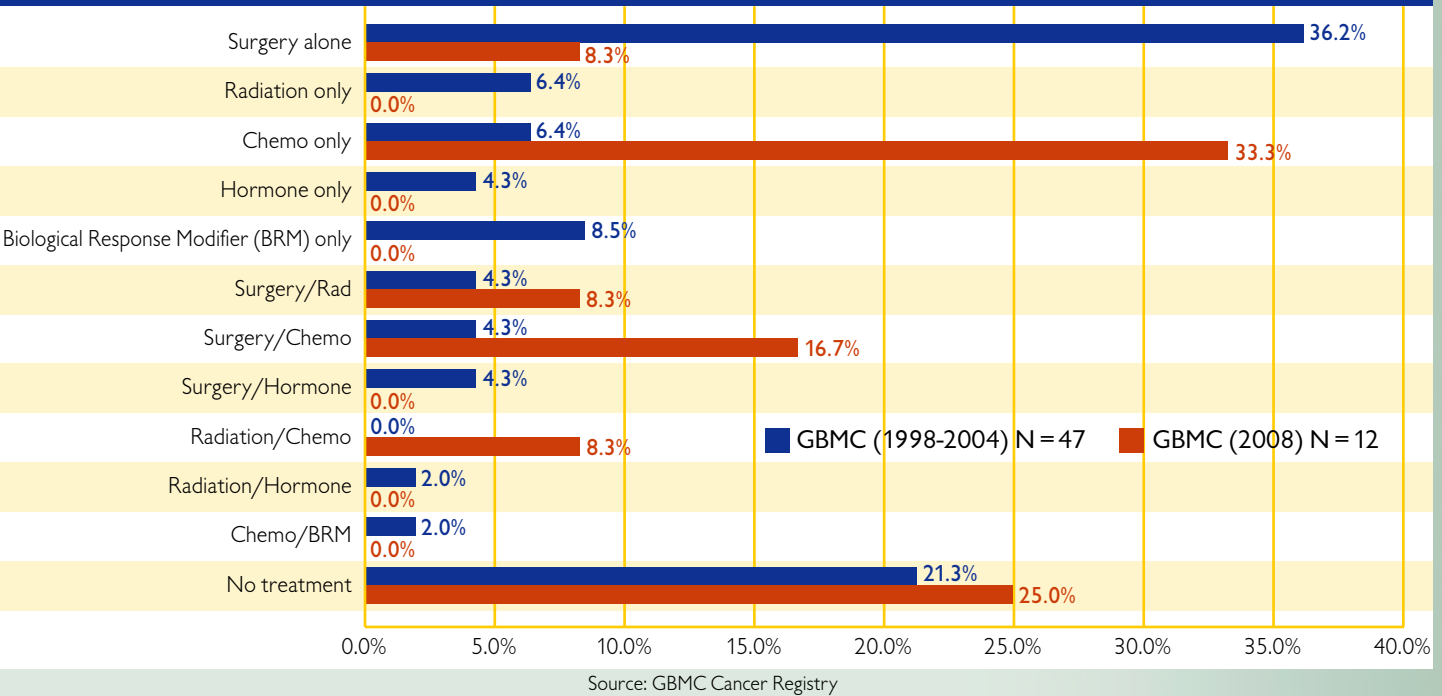
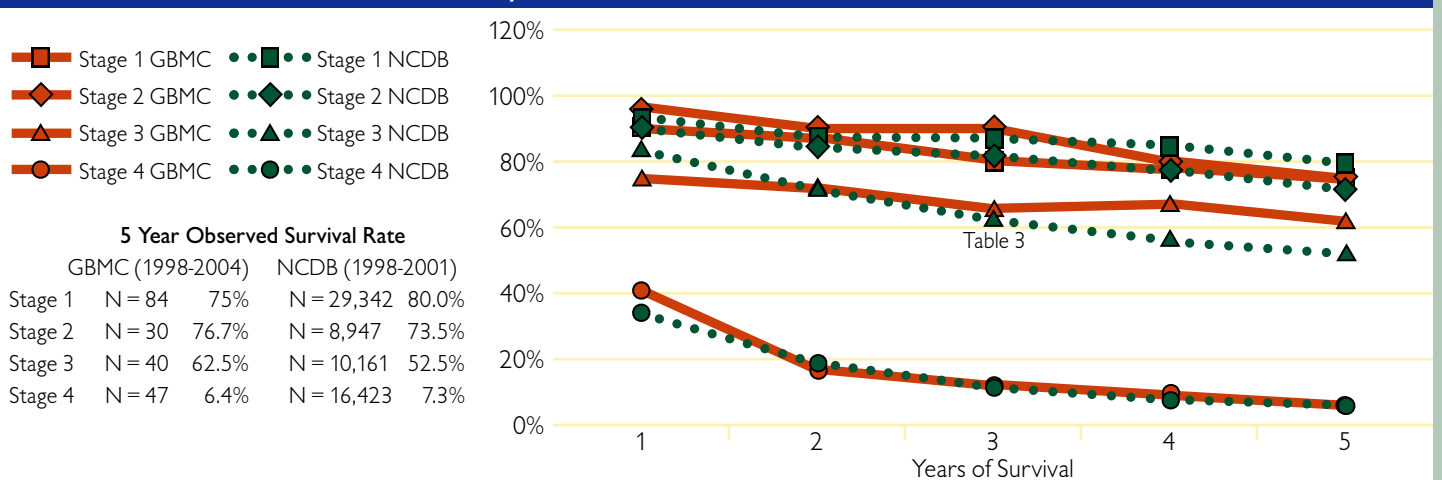


Table 4 ■ Five-Year Survival ■ Kidney and Renal Pelvis Cancer at GBMC 1998-2004



Data from the NCDB/Commission on Cancer 2009