LAKE CUMBERLAND REGIONAL HOSPITAL

2011 ANNUAL REPORT

Based on 2010 Statistical data

Introduction

On behalf of the Community Hospital Cancer Program at Lake Cumberland Hospital, the cancer committee is proud to present the 2011 Cancer Program Annual Report. The report offers an overview of prostate cancer. Initially approved in 2004 as a Community Hospital Cancer Program by the American College of Surgeons' Commission on Cancer (CoC). Lake Cumberland Hospital continued our tradition in 2010 with receipt of a three-year approval with commendation.

The cancer committee is extremely proud of the continuing improvements to our cancer program. As our community continues to expand and grow – so have our services.

Quality care is a team effort. The spectrum of care to our oncology patients is monitored by the cancer committee, a group of physicians and departmental representatives involved directly or indirectly in the treatment of cancer patients.

Patient-oriented multidisciplinary cancer conferences are twice a month. Current case diagnosis, staging, treatment, clinical trial and management options are discussed during these conferences, affording the cancer patient with quality care.

It is only through the continued caring and dedication of our physicians, nurses, allied health professionals and support personnel that Lake Cumberland Hospital will continue to provide high quality cancer care to our ever-growing community, and the most remarkable patient experience in every dimension, every time.

Cancer Committee Members

Amtullah Khan, MD, Chair/ Radiation Oncologist	**Shona Harper,** Certified Cancer Registrar
Rachel Shelton, MD, General Surgery	**Kim Grant,** RN, CTC Nurse
Susan Petrosky, MD, Family Practice	**Kenny Hill,** Cancer Program Administrator
Todd Horn, MD, Gastroenterology	**John Upton,** physicist CTC
Eric Ruby, MD, Urology	**Cathe LaCour,** social worker
William Baker, MD, Diagnostic Radiology	**Susan Wilson,** Marketing/PR
N. Mullai, MD, Medical Oncologist	**Euretha McQueary,** executive dir of hospice
Bachar Kassem, MD, Medical Oncologist	**Amanda Coffey,** Cancer Registry
Michael Citak, MD, Surgeon, Cancer Liaison Physician	**Diann Vanhook,** Quality/Resource/Risk Mgr
Simon Ratliff, Radiology Director	**Charlotte Brewer,** ACS Rep

Mike Everett, Associate Administrator	**Tanya Hackny-Nelson,** Sr. Dir Acute/Subacute

Cancer Registry Report

The Cancer Registry maintains the registry database of the patient's history, diagnosis, stage, treatment and outcomes for all patients who meet state and CoC reporting requirements on cancer diagnosis or other reportable diseases (select blood disorders, benign brain and other tumors). This data generates accurate and meaningful information for cancer committee, medical staff or hospital administration use.

Our hospital services and hospital experience (registry data) are shared with the American Cancer Society through the CoC Facility Information Profile System/FIPS program. In addition, the Cancer Registry submits required cases annually to the National Cancer Data Base for national statistics and throughout the year to the Kentucky Cancer Registry for statewide statistics.

Lifetime annual follow-up is conducted to obtain outcome statistics on our patients – and as an important reminder to the patients to continue to seek follow-up care.

From the reference date of January 1, 2004, the Cancer Registry database contains 3368 patients in registry. 1990 that are being followed in the registry through 2010.

2011 Cancer Data Analysis

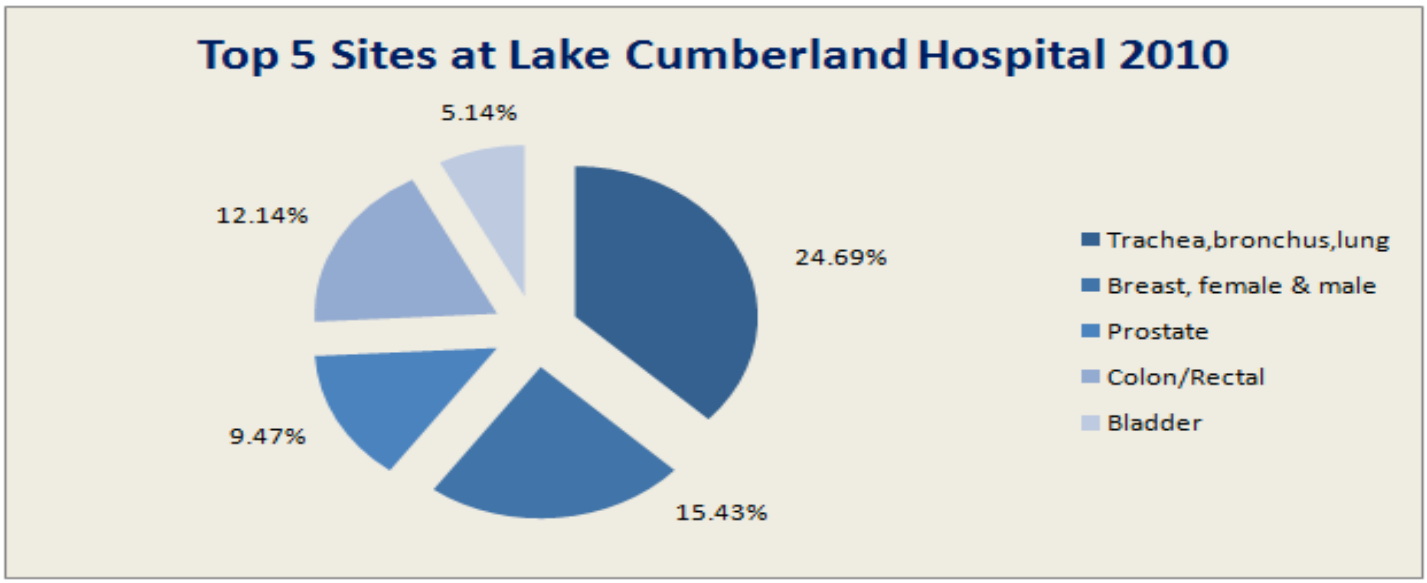
Of the 486 cases added for patients first seen in 2010:

• 470 were analytic cases – patients were first diagnosed and/or received all or part of their first course of therapy at Lake Cumberland Hospital and staff physician offices. (Class of Case 00 thru 22)

• 16 were non-analytic cases – cases that are required to be reported to the Kentucky Cancer Registry: Patients admitted for diagnosis and treatment of recurrences following completion of first course of therapy, palliative comfort care and cases discovered at autopsy. (Class of Case 30, 32)

The 2010 analytic case highlights (analytic cases only):

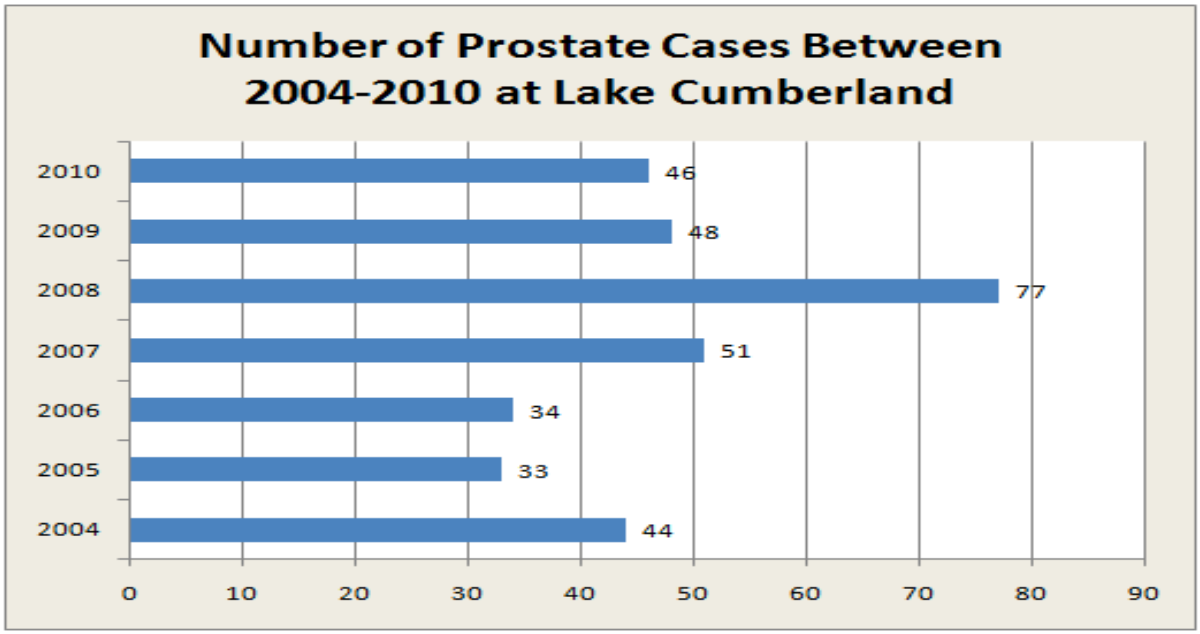
- Female (47.97%) and Male (52.03%)
- 9% where Dx at Lake Cumberland and all Tx elsewhere
- 74.2% Dx at Lake Cumberland and all or part of first course Tx at Lake Cumberland
- 13.3% Dx elsewhere and all or part of first course Tx at Lake Cumberland
- 3.5% non-analytic cases



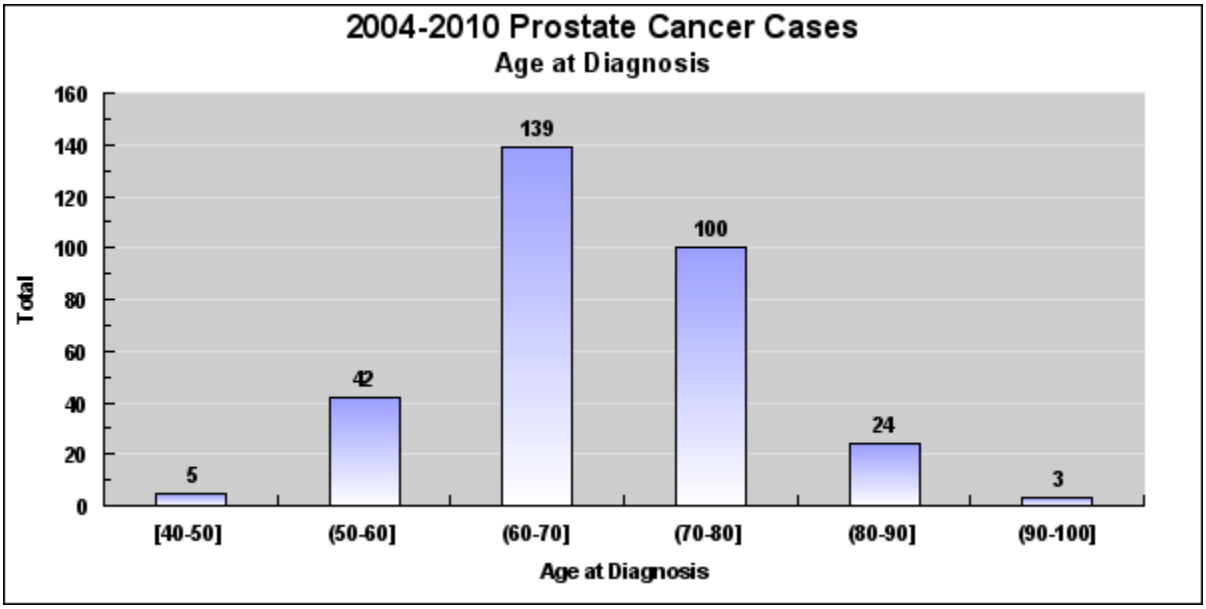
PROSTATE CANCER

Prostate cancer is still the most common male cancer diagnosed in the United States. New cases from prostate cancer in 2012 are estimated at 241,740 cases according to the National Cancer Institute. 28,170 men are expected to die from prostate cancer in 2012, making it the second leading cause of death from cancer in men.

At Lake Cumberland Hospital between 2004 and 2010, a total of 333 prostate cancers were diagnosed and/or treated for first course of Treatment as shown below.



The Average age of men diagnosed with prostate cancer, ranges from 60-80 years of age, with most of the men in the 60-70 year age range with the median age 65.



Risk Factors

Age, ethnicity and a family history of prostate cancer are risk factors. Data has shown a link to a diet high in saturated fats, with the risk of dying with prostate cancer may increase with obesity.

Screening

Prostate cancer has been the center of controversy in the United States with the United States Preventive Task Force Services recent recommendation to not screen for prostate cancer. Other groups have However, the American Urological Association and the National Comprehensive Cancer Network still recommend that screening should be offered after an informed discussion starting at age 40. Prostate screening consists of an annual Prostate Specific Antigen (PSA) blood test and digital rectal examination.

Diagnostic Procedures

Transurectal Ultrasound (TRUS) biopsy of the prostate is performed most often after PSA screening has revealed an elevated PSA or an abnormal digital rectal examination. Considerable variation exists
nationally on the number of cores taken, with most protocols ranging from 8-24 biopsies. At Lake Cumberland Hospital, 10-12 cores are used most often.

Gleason's Score

The pathology report provides the Gleason score, which describes the degree of differentiation of prostate cancer cells. The Gleason system uses scores ranging from Grade 2-10, although current pathologist readings very rarely score any prostate cancer lower than 6. Lower Gleason scores describe well-differentiated, less aggressive tumors. Higher scores describe poorly differentiated, more aggressive tumors.

Staging at Diagnosis

The American Joint Committee on Cancer (AJCC) staging consists of four stage groups:

- Stage I: Incidental histologic finding in 5% or less of tissue resected (T1a, N0, M0 and well-differentiated tumor).
- Stage II: Tumors diagnosed by TRUS biopsy and/or locally confined tumor to one or both lobes of the prostate. (T1a-c/T2, N0, M0 and moderately to poorly differentiated tumor)
- Stage III: Tumor that has extended through the prostate capsule –extraprostatic extension or seminal vesicle invasion. (T3)
- Stage IV: Direct tumor invasion into the bladder or rectum (T4), or positive regional lymph node metastasis (N1), or distant metastasis (M1) – Metastases are most common in the bone or non-regional lymph node. Further along in the disease course is when lung and liver metastasis are seen.

Prognostic Groups

Prognosis depends on age and overall health as well as stage and grade of cancer at diagnosis. In addition, evidence has pointed to PSA velocity or doubling time as being important in survival outcomes. In patients diagnosed with prostate cancer, best treatment outcomes are achieved in those with localized disease, usually defined as having a PSA <10, clinical stage less than T2a, and a Gleason score of 6 or less. Higher PSA levels or Gleason scores and a pretreatment PSA velocity of greater than 2 ng/ml per year predict a higher rate of treatment failures regardless of the type of therapy chosen. However, recent data suggests that even higher risk groups have improved outcomes in recent years.

Treatment

Treatment options currently include the following or a combination of: radical prostatectomy (retropubic, perineal or laparascopic/robotic approaches), brachytherapy, external beam radiotherapy, cryotherapy, high intensity frequency ultrasound, hormonal or chemotherapy and active surveillance or "watchful waiting".

Active surveillance has gained more popularity in recent years, with the realization that many prostate cancers may remain indolent ("slow growing") for long periods of time. However, ideal protocols for observation are not known. Nonetheless, numerous organizations have encouraged the use of active surveillance protocols in low risk prostate cancer patients.

In patients with metastatic disease, hormonal therapy is considered first line therapy. Other regimens have rapidly progressed in the past five years, with immunologic therapies (i.e. sipuleucel-T), advanced hormonal manipulators (i.e. abiraterone or enzalutamide) or chemotherapies (docetaxel or cabazitaxel). These therapies have provided new hope to patients who formerly had no options. In patients with locally advanced disease (disease beyond the prostate but not metastatic), multimodal (combination) treatments are most often used, but exact protocols are still ill-defined, and great variability exists in treatments to date.

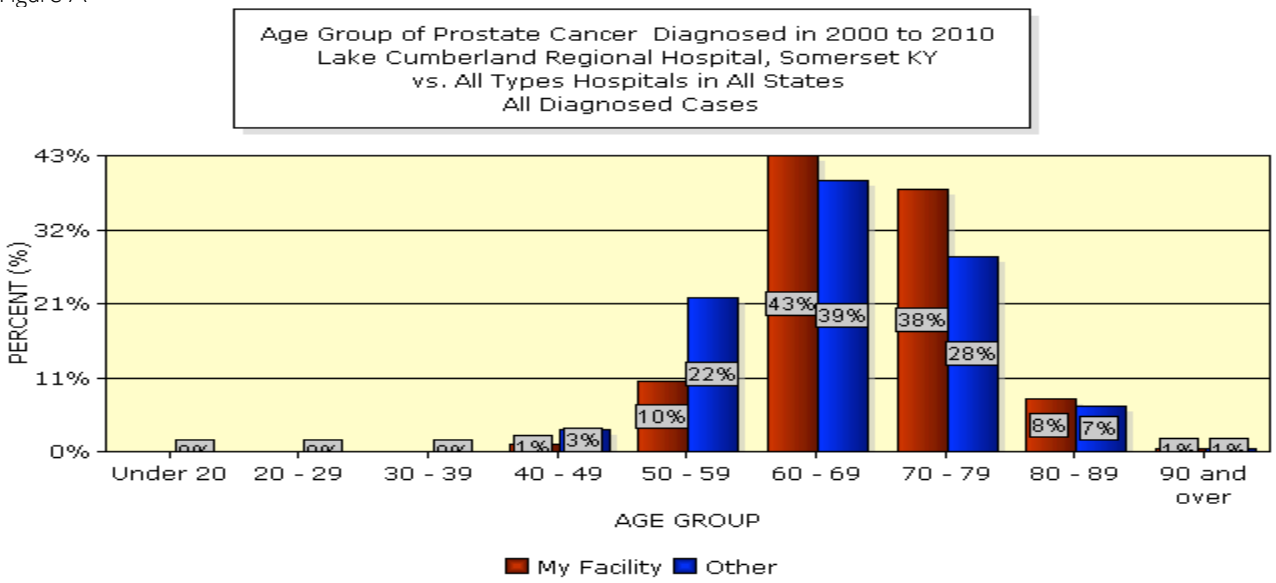
Results of Therapy

Overall, studies have shown that the 15-20 year progression-free survival rates are quite similar for external beam radiotherapy and surgery, with brachytherapy (seed implants) for low-grade disease also producing similar results. Cryotherapy also appears to produce good results at 10-12 years, although the data is not as robust at the former three therapies. In general, prostate cancer specific survival in patients with localized disease is excellent, with 5-year disease-specific survival approaching 100%. In metastatic disease, these numbers drop significantly, but results have improved in recent years with more therapies available for metastatic disease

PROSTATE CANCER ~ Statistical Analysis

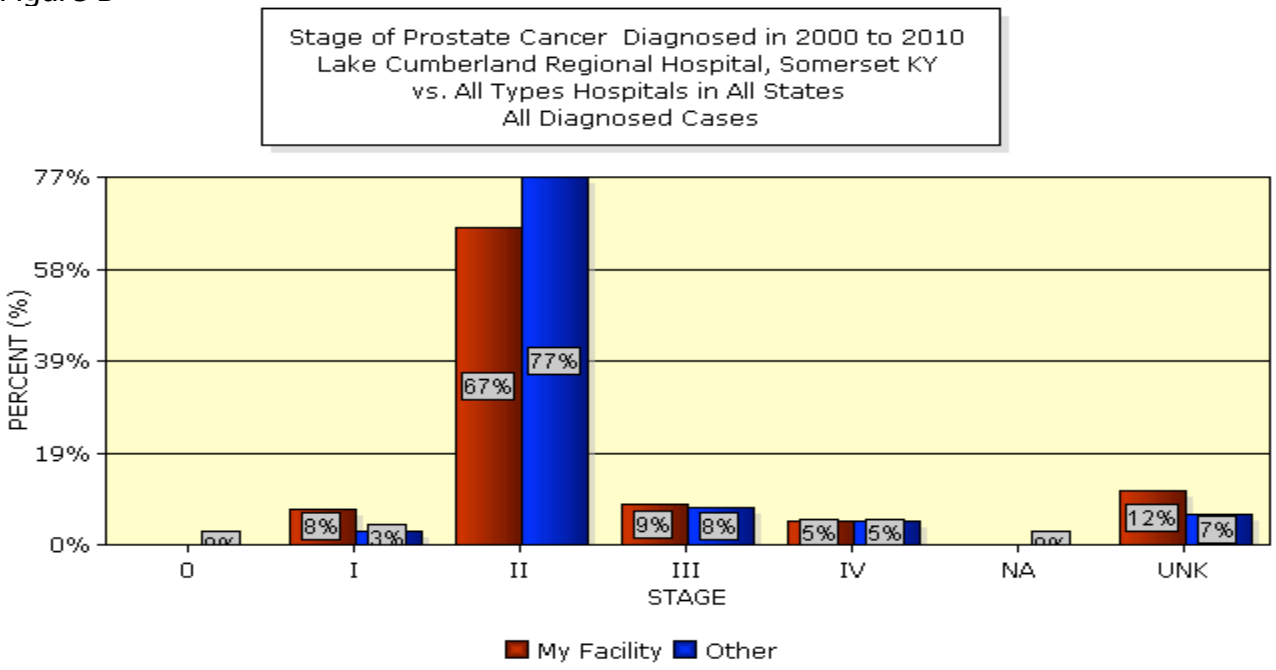
According to data in Figure A, NCDB showed more being diagnosed in the 50-50 age range than LCRH. Lake Cumberland demonstrates more being diagnosed in the 60-80 years age range. This is a concern in early diagnosis of prostate cancer at LCRH.

Figure A



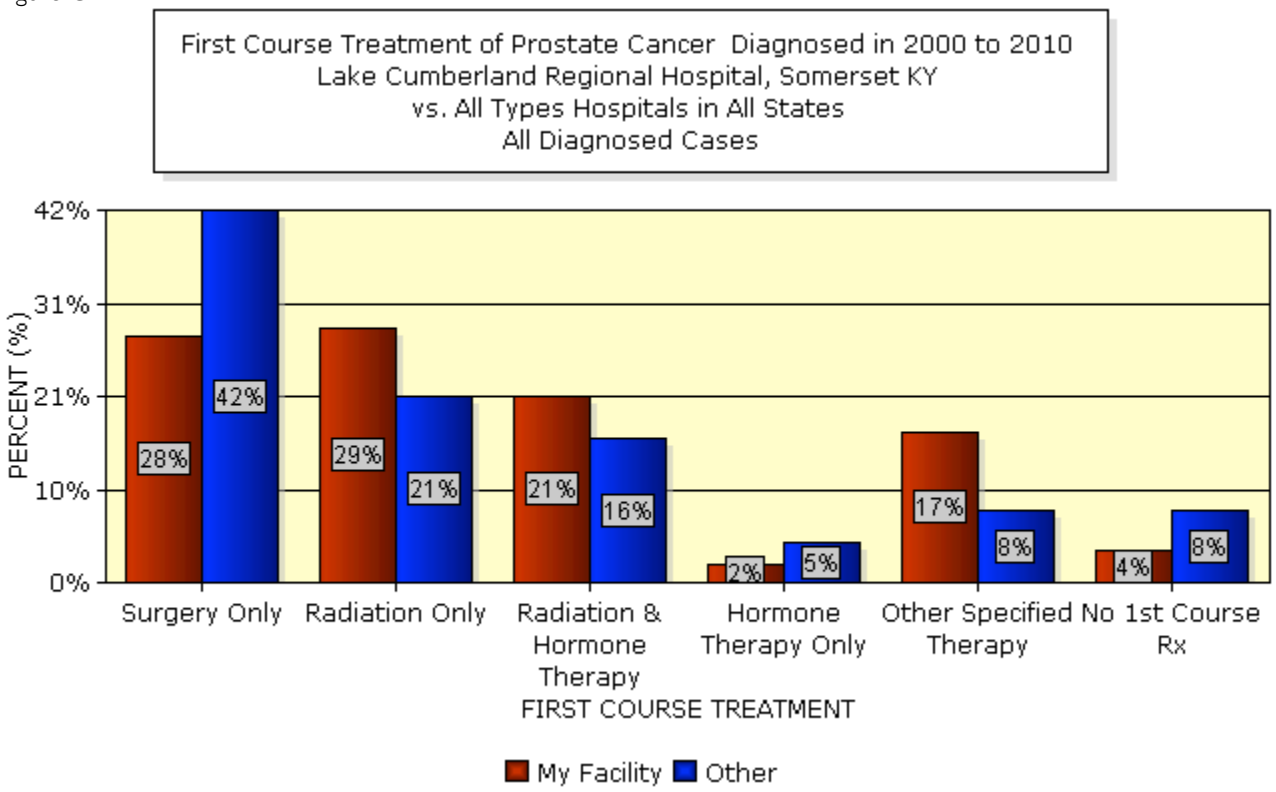
According to Figure B, stage at time of diagnosis at LCRH appears similar to NCDB, with the majority of patients diagnosed at Stage II, and relatively few patients in stages I, III or IV at diagnosis. But, again slightly more being diagnosed at Stage I than at LCRH. This is a concern in early diagnosis of prostate cancer at LCRH.

Figure B



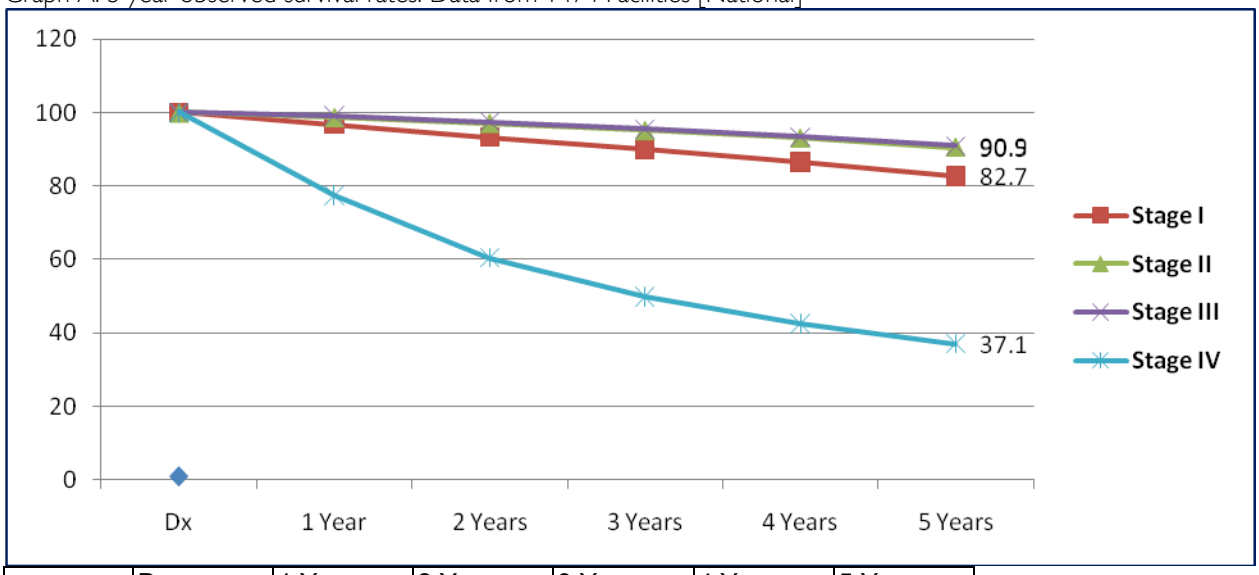
Reported Treatment at LCRH is different than the reported statistics from the NCDB, with a smaller proportion of patients opting for surgery. I believe that this reflects the cancer registry picking up cases that come to the hospital for biopsy, and treatment involves with radiation therapy +/- hormonal therapy. Again, this is likely due to urologists' patterns of obtaining prostate pathology from specialized prostate pathologists where surgery is not an option.

Figure C



5-Year Survival Rates for Lake Cumberland Regional Hospital prostate cancer cases show that 5-year observed survival rates are comparable to that of NCDB. Except for Stage III, at Lake Cumberland 5-year survival rate was 100%, this could be due to low number of cases. There were only 7 Stage III prostate cancer cases at Lake Cumberland. (See Graph A/B)

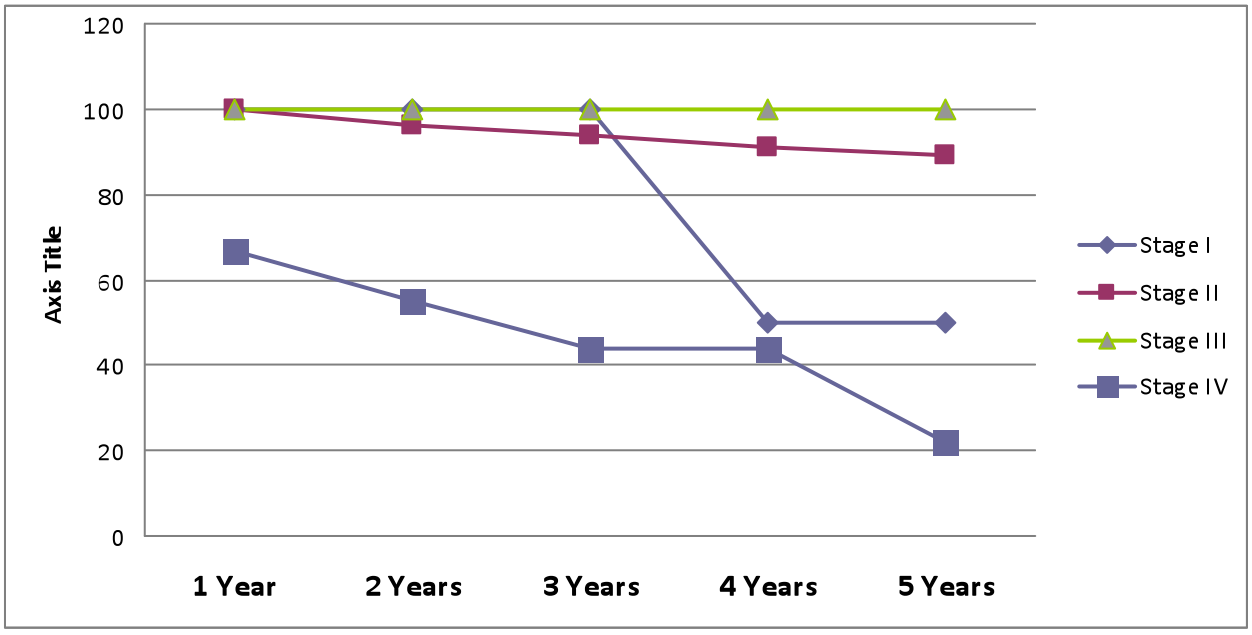
Graph A: 5 year observed survival rates: Data from 1474 Facilities [National]



	Dx	1 Year	2 Years	3 Years	4 Years	5 Years
Stage I	100	96.8	93.3	90.1	86.6	82.7
Stage II	100	98.7	97.1	95.1	93	90.5
Stage III	100	99	97.5	95.5	93.4	90.9
Stage IV	100	77.4	60.5	49.9	42.5	37.1

Source: National Cancer Database
Prostate Cancer Cases 2003-2005

Graph B: 5 year observed survival rates: 2004-2005 Prostate Cancer cases at Lake Cumberland



	1 Year	2 Years	3 Years	4 Years	5 Years
Stage I	100	100	100	50	50
Stage II	100	96	94	91	89
Stage III	100	100	100	100	100
Stage IV	67	55	44	44	22

References:

1. National Cancer Institute prostate cancer statistics 2011, available at http://www.cancer.gov/cancertopics/types/prostate.

2. NCDB: National Cancer Data Base – © Commission on Cancer, ACoS Benchmark Reports, V3.0, Chicago, IL – Community Cancer Hospitals, All States – Patterns of Diagnosis and Treatment