Oncology Annual Report: Prostate Cancer – 2005 Update
By: John Konefal, MD, Radiation Oncology

Prostate cancer is the most common cancer in men, with 232,090 new cases projected to be diagnosed in the U.S. in 2005. There are estimated to be about 90 new cases of prostate cancer diagnosed at NEMC this year. In the late 1980s and early 1990s there was a dramatic increase in the incidence rate of prostate cancer with the advent of PSA (prostate specific antigen) testing. While the incidence rates of prostate cancer have decreased and leveled off among men over 65, the rates continue to increase in men under 65 as more men in this age group undergo PSA testing.

The American Cancer Society recommends that starting at age 50 men be offered PSA and digital rectal exam as part of their annual check-up. African-American men (who have the highest incidence of prostate cancer in the world) and men with a family history of prostate cancer are considered to be at greater risk for developing prostate cancer. Men in these groups should consider starting annual testing at age 45. *(Figure 1 and Figure 2)* There is some controversy over which groups do not require annual PSA testing, especially men with less than a 10-year life expectancy due to other medical problems and more elderly men. This is due to the indolent (slow-growing) nature of the majority of prostate cancers, and concern that some men may get unnecessary treatment for cancers that are unlikely to become life threatening, or even symptomatic, if untreated.

However, despite the fact that many prostate cancers are slow growing, prostate cancer is the second leading cause of death in men. An estimated 30,350 men will die of prostate cancer in the U.S. in 2005. Death rates from prostate cancer have declined in the last 10 years, due to earlier detection and treatment.

Prostate cancer confined to the prostate is considered stage II. Prostate cancer that extends beyond the prostate capsule (but not invading other structures except the seminal vesicles) is stage III. Involvement of surrounding organs (such as the bladder or rectum), or metastases to lymph nodes or distant sites (most commonly bones), makes the cancer a stage IV. Unlike other cancers, a very small minority of prostate cancers is defined as stage I. Almost all patients diagnosed on needle biopsy done because of an elevated screening PSA are stage II. The following group shows *(Figure 3)* that 86.0% of the patients diagnosed with prostate cancer at NEMC are stage II, compared with 78.3% of all patients diagnosed in North Carolina. This demonstrates that NEMC

compares favorably with other N.C. hospitals in the early detection of prostate cancer.

Prostate cancer can be treated in a variety of ways with excellent results. The following bar graph shows the different ways men with prostate cancer were treated at NEMC in 2004 *(Figure 4).* Radical prostatectomy (surgical removal of the prostate) is the traditional method of treating prostate cancer, and is especially most likely to benefit relatively younger men with cancer confined to the prostate. External beam radiation, where men receive eight weeks of daily radiation treatments, is another option. The use of IMRT (intensity modulated radiation therapy) results in fewer side effects during and after radiation. This technology has been available at NEMC for over two years. Radioactive seed implantation is yet another good option for selected patients. Nearly 300 men have undergone seed implants for prostate cancer over the last eight years at NEMC. Some men are better candidates for a particular treatment option, and sometimes a combination of these treatments yields the best results. Hormonal therapy is often used in conjunction with surgery, radiation, or seed implants, and is especially helpful in men with large prostates or cancers that appear aggressive pathologically.

The following graph shows the 5-year overall survival rates for men treated at NEMC for prostate cancer in 1998 *(Figure 5)*. For men with very early stage I prostate cancer, 100% were alive five years later. For men with distant metastases at diagnosis (stage IV), 25% were alive at five years. Men with stage II or stage III prostate cancer had a 5-year survival rate of 70-80%. It should be noted that these are overall and not cancer-specific survival rates. In other words, many of these men (one-third of whom were 74 years old or older) died of causes other than prostate cancer with no evidence of recurrent cancer at the time of their deaths. The survival rate for all stages of prostate cancer has steadily improved in the last 20 years.

The PSA test is a great way to check how men are doing after treatment for prostate cancer, as the PSA will begin to rise long before a cancer recurrence can be detected clinically. It is recommended that after treatment for prostate cancer a PSA be checked every 6 months for 5 years, then every year thereafter.

See next page for graphs

Figure 3

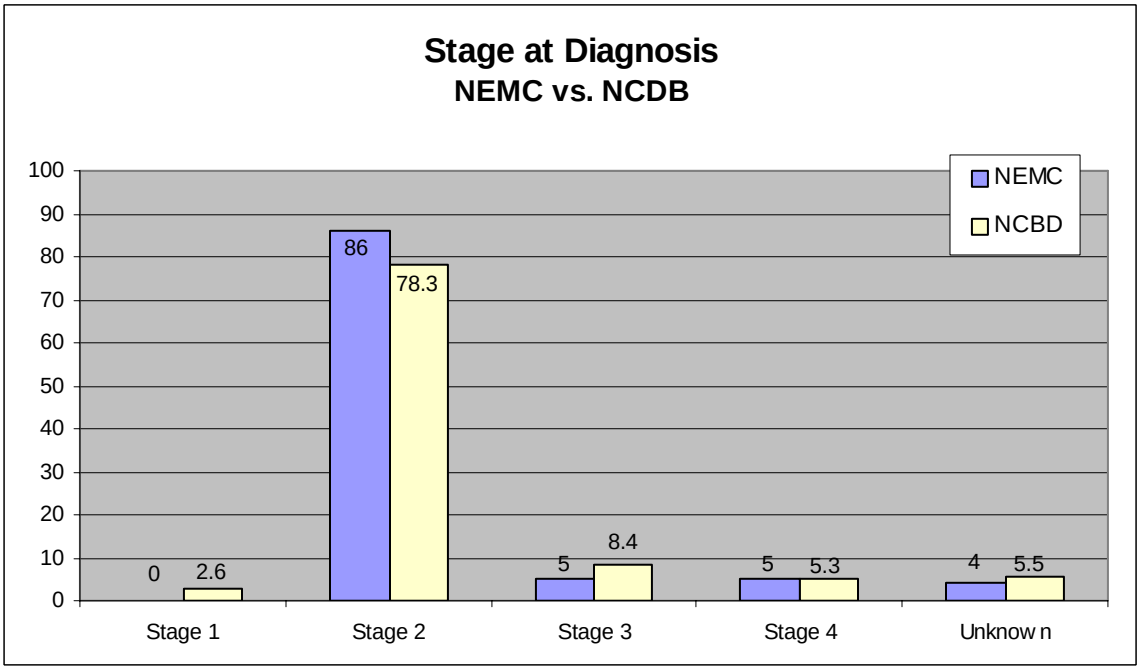


Figure 1

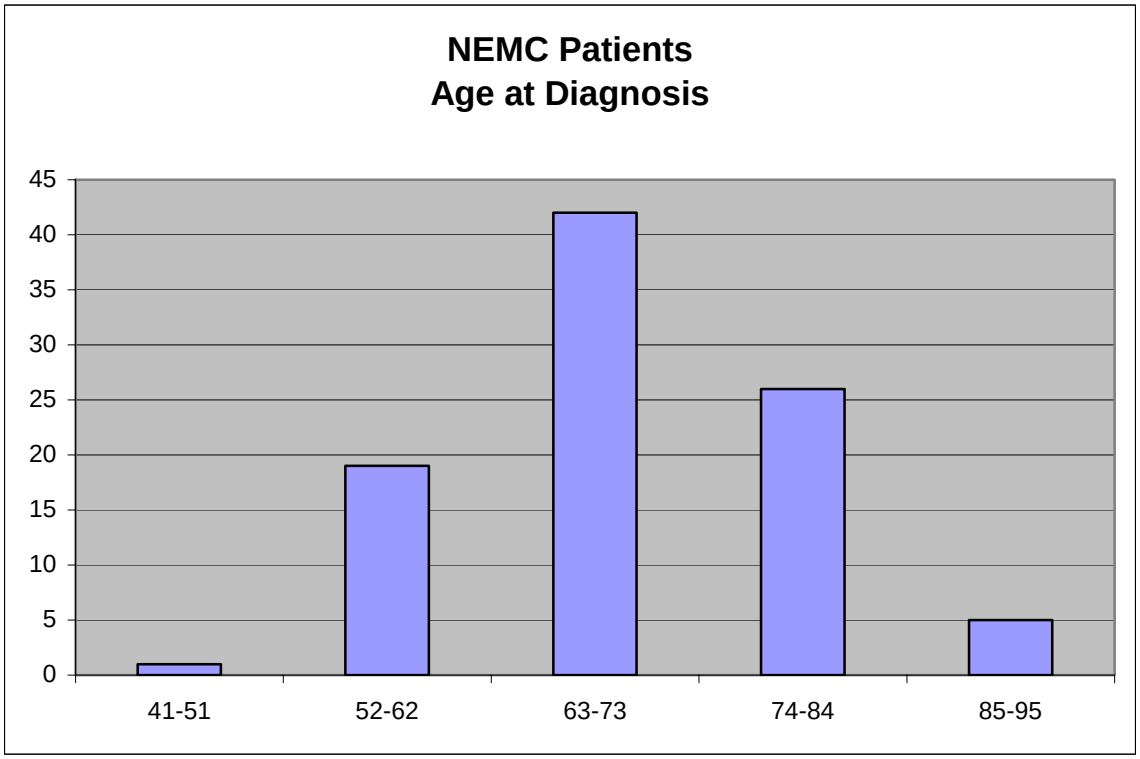


Figure 2

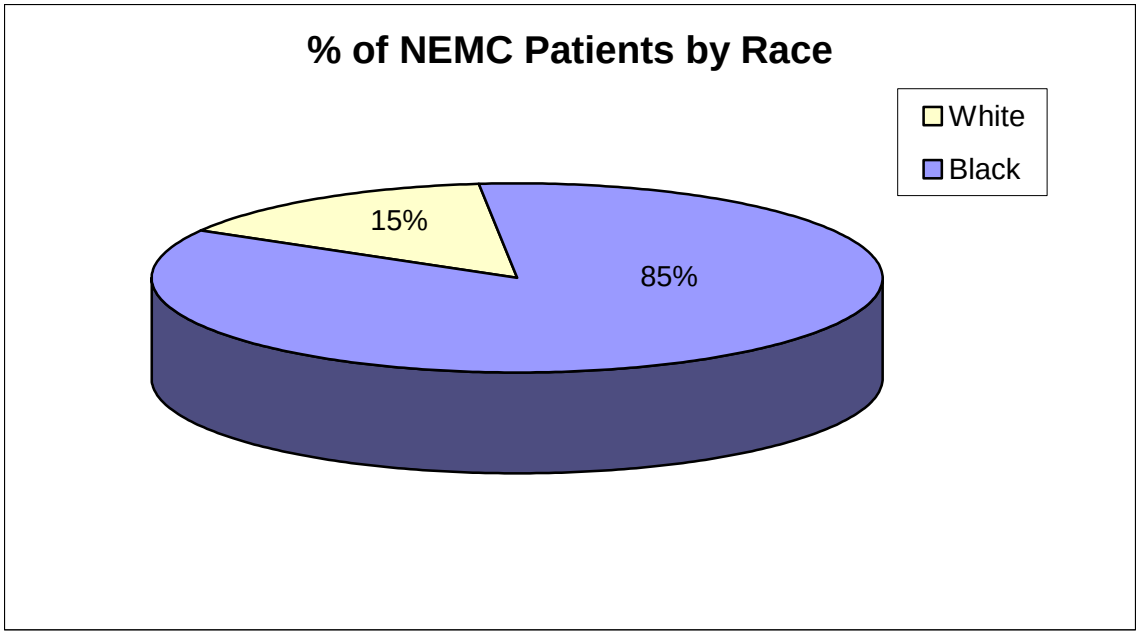
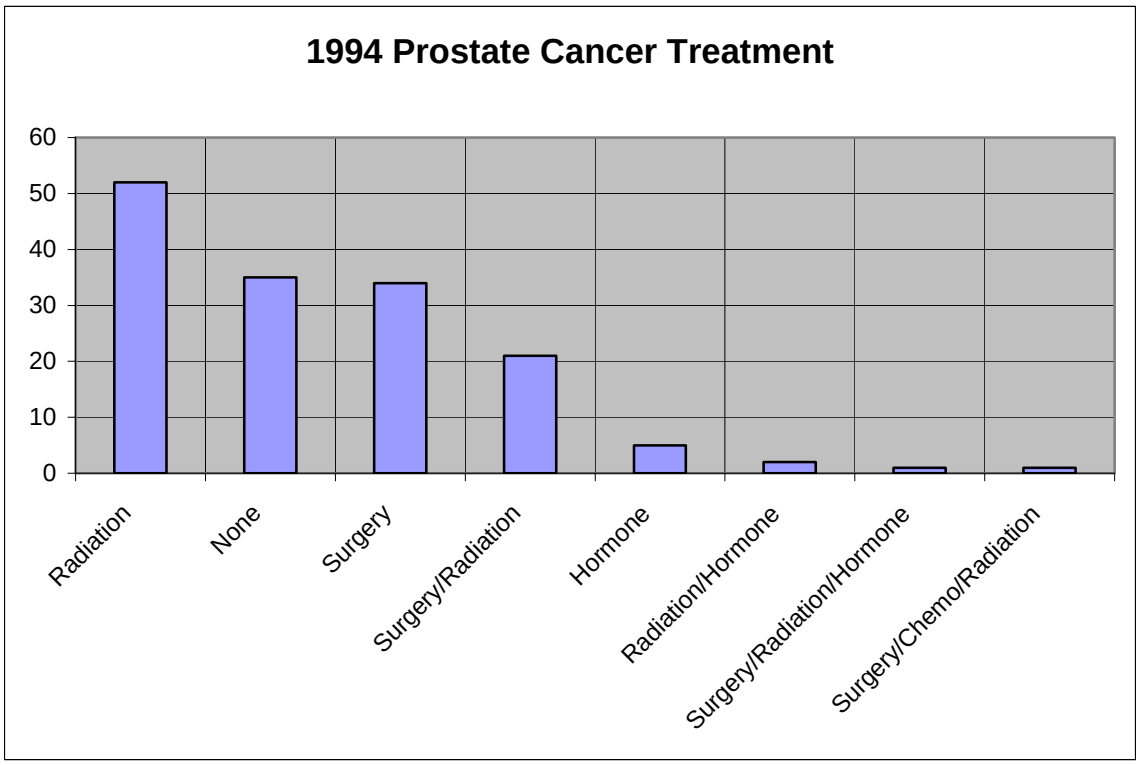


Figure 4


1994 Prostate Cancer Treatment
60
50
40
30
20
10
0
Radiation
None
Surgery
Surgery/Radiation
Hormone
Radiation/Hormone
Surgery/Radiation/Hormone
Surgery/Chemo/Radiation

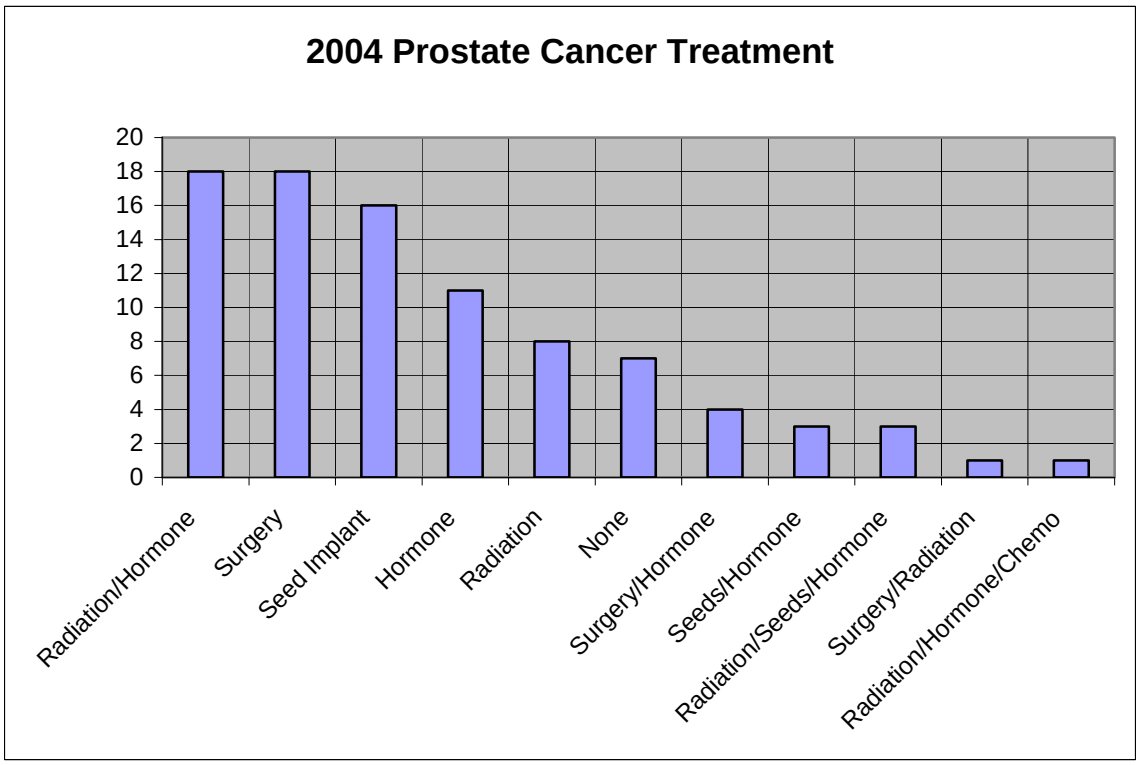
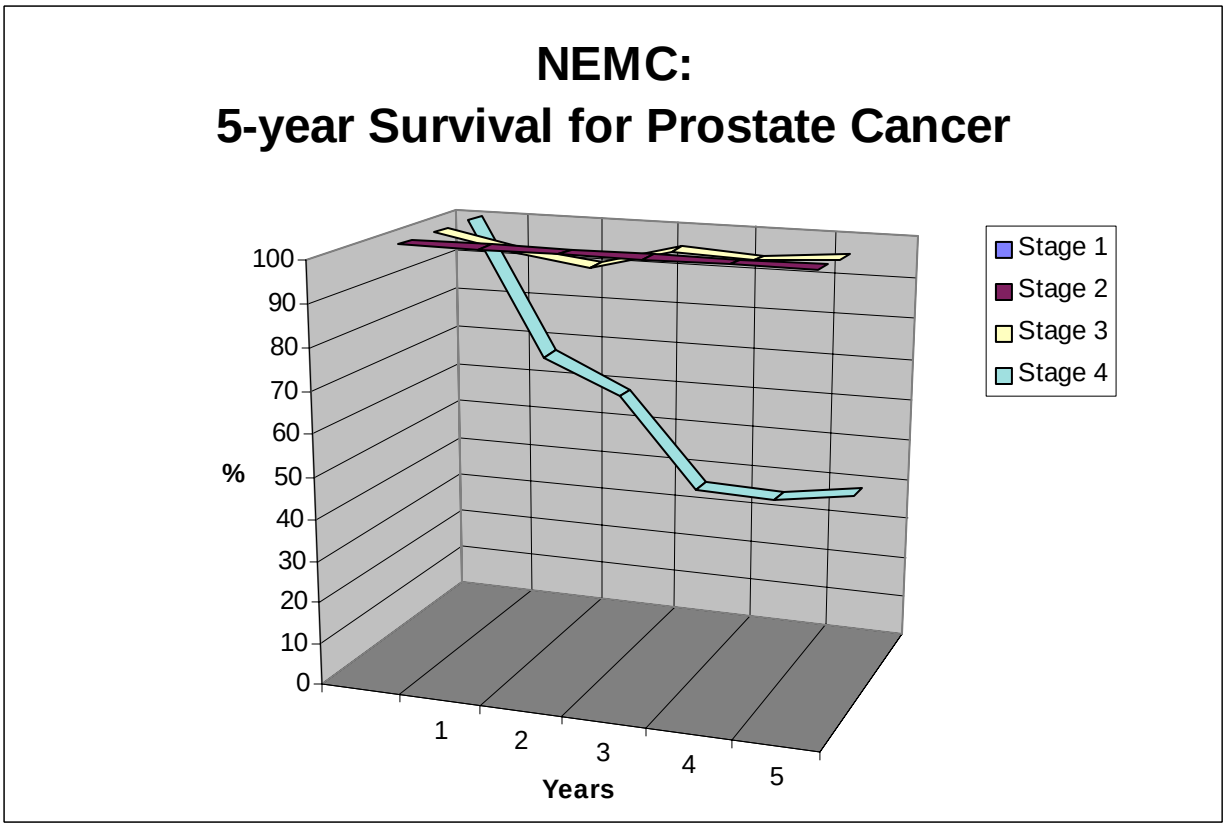
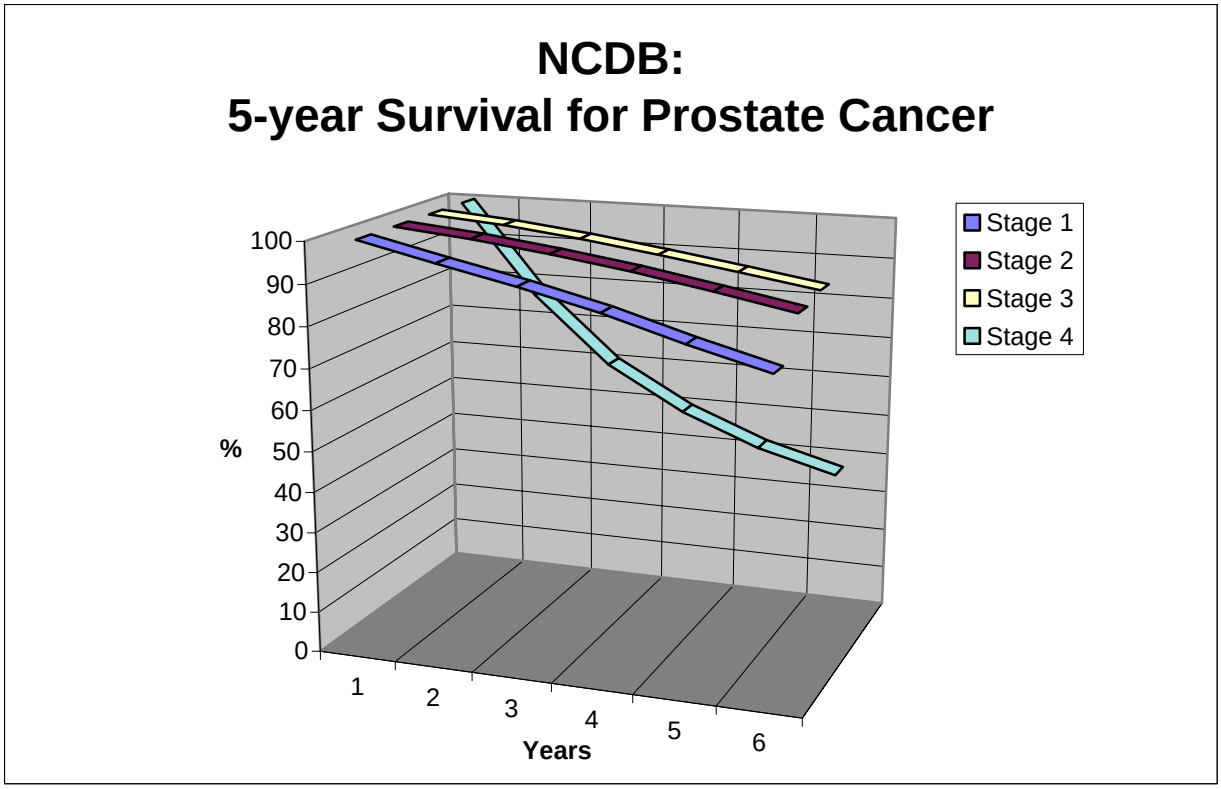

2004 Prostate Cancer Treatment
20
18
16
14
12
10
8
6
4
2
0
Radiation/Hormone
Surgery
Seed Implant
Hormone
Radiation
None
Surgery/Hormone
Seeds/Hormone
Radiation/Seeds/Hormone
Surgery/Radiation
Radiation/Hormone/Chemo

Figure 5


NEMC:
5-year Survival for Prostate Cancer
100
90
80
70
60
50
40
30
20
10
0
%
1
2
3
4
5
Years
Stage 1
Stage 2
Stage 3
Stage 4


NCDB:
5-year Survival for Prostate Cancer
100
90
80
70
60
50
40
30
20
10
0
%
1
2
3
4
5
6
Years
Stage 1
Stage 2
Stage 3
Stage 4