

SURVIVAL

One of the primary measures employed in assessing the impact of prostate cancer in men is the survival rate, a measure of the proportion of patients still living at some time point subsequent to the diagnosis of their cancer.

The fact that one of the treatment options for some men is no treatment or “watchful waiting” (a delay in active treatment) suggests that the expected number of years of life remaining without treatment is equal to or greater than that with treatment. Given that a man may survive for many years after a diagnosis of prostate cancer, information on survival probabilities can play an important role in planning treatment strategies. In addition, differences in survival between defined subgroups of patients allow clinicians and policy makers to better target interventions.

One way to describe the survival experience of a cohort of patients over an extended period of time is the five-year survival rate. This value is simply the cumulative proportion of patients surviving at the end of the fifth year after initial diagnosis. Since a large proportion of prostate cancer patients survive for many years, however, it is desirable to evaluate the survival experience of patients beyond the five-year point. SEER survival data are currently available for up to 22 years following initial diagnosis.

Changes in cancer survival data are often subject to factors other than improvements in treatment. In the case of prostate cancer, transurethral resection of the prostate (TURP) and prostate-specific antigen (PSA) testing each have the potential to increase the survival time of individual

patients by allowing diagnosis at points in time which may be years prior to when the cancer would have become detectable by physical examination. This may result in lead time bias, meaning that men who are identified by PSA testing appear to survive longer than men who are identified by other methods. In such a situation, PSA screening would appear to help men survive longer, when in reality there would be no real difference in the time to death between screened and unscreened men.

Another potential problem with screening and survival analysis relates to length time bias. PSA screening is more likely to identify slower growing tumors, which may exist for longer time intervals prior to the development of clinical symptoms compared to fast growing tumors. Thus, men who are identified by PSA testing survive longer because they may have slower growing tumors. These issues must be considered in the interpretation of survival trends.

Relative survival (adjusted for other causes of death) is primarily presented in this section. Only the overall 5- and 10-year observed survival rates are included.

The five-year observed survival of men with prostate cancer has increased steadily from a low of 45.1% for men newly diagnosed in 1973 to 66.9% for men newly

diagnosed in 1990 (Figure 5.1). The average annual increase was 1.3. The ten-year observed survival rate has also increased over time, but at a slightly slower pace. The ten-year observed survival has increased by about 0.9 per year from 21.8% for men newly diagnosed in 1973 to 32.2% for men newly diagnosed in 1985.

The five-year relative survival has also increased steadily from a low of 64.0% for men newly diagnosed in 1973 to 92.9% for men newly diagnosed in 1990 (Figure 5.1). The average annual increase was 1.6. Similar to the five-year relative survival rate, the ten-year relative survival rate has increased by about 1.7 per year, from 46.8% for men newly diagnosed in 1973 to 68.5% for men newly diagnosed in 1985.

While the relative survival rate of both black men and white men has increased over time, black men continue to have a lower five-year relative survival than white men (Figure 5.2). For men diagnosed from 1973 to 1977, whites experienced a five-year relative survival that averaged 8.5% higher than that of blacks. This difference has expanded over time, with average differences of 10.2%, 14.1%, and 14.6% in the time periods 1978-1982, 1983-1987, and 1988-1993, respectively.

Stratifying the SEER data by age and stage of disease at diagnosis does not completely explain these differences. Within each age group, white men have a better five-year relative survival rate than black men. Also, within each stage of prostate cancer at diagnosis, white men have a better five-year relative survival rate than black men.

Age-specific relative survival patterns support the concept that prostate cancer may be more severe or advanced in younger men

(Figure 5.2). Men 40-49 years of age at diagnosis from 1988-1993 had a five-year relative survival of 84.1%, which is the lowest of all age groups. During this most recent time period, the five-year relative survival was 90.1%, 94.7%, 96.8%, and 89.2% for men 50-59, 60-69, 70-79, and 80+ years of age at diagnosis, respectively.

The relative survival experience of men with prostate cancer depends in large part on the stage of disease at diagnosis. The relative survival rates of men diagnosed with prostate cancer at either a localized or regional stage are now (1988-1993) over 99%, but the relative survival of men with distant stage disease remains poor (Figure 5.3). The relative survival rate for men with localized stage prostate cancer has increased in a linear pattern throughout the period of observation (Figure 5.3). Survival rates for men with distant stage disease have remained essentially unchanged from 1973-1993.

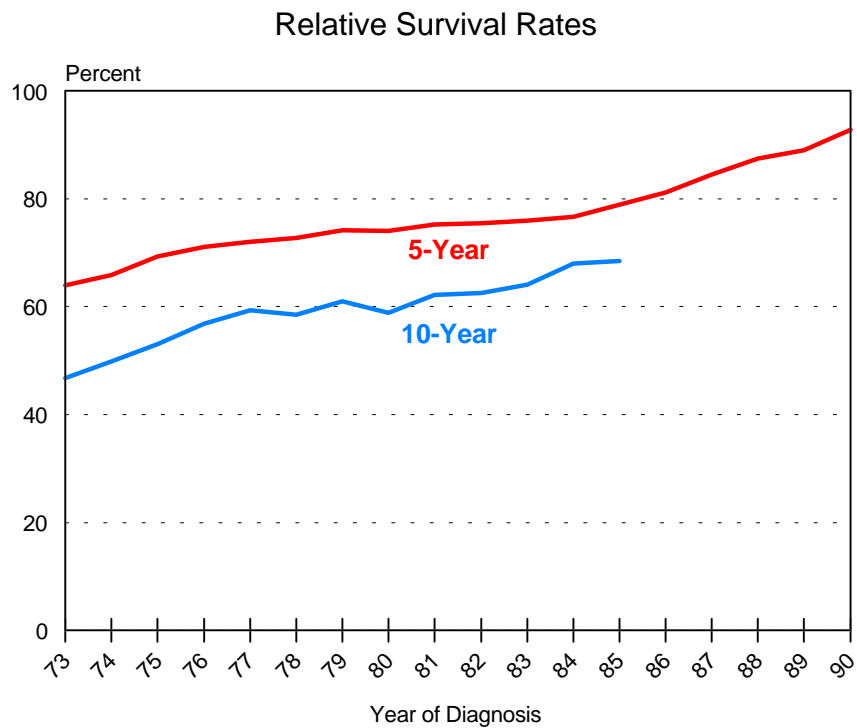
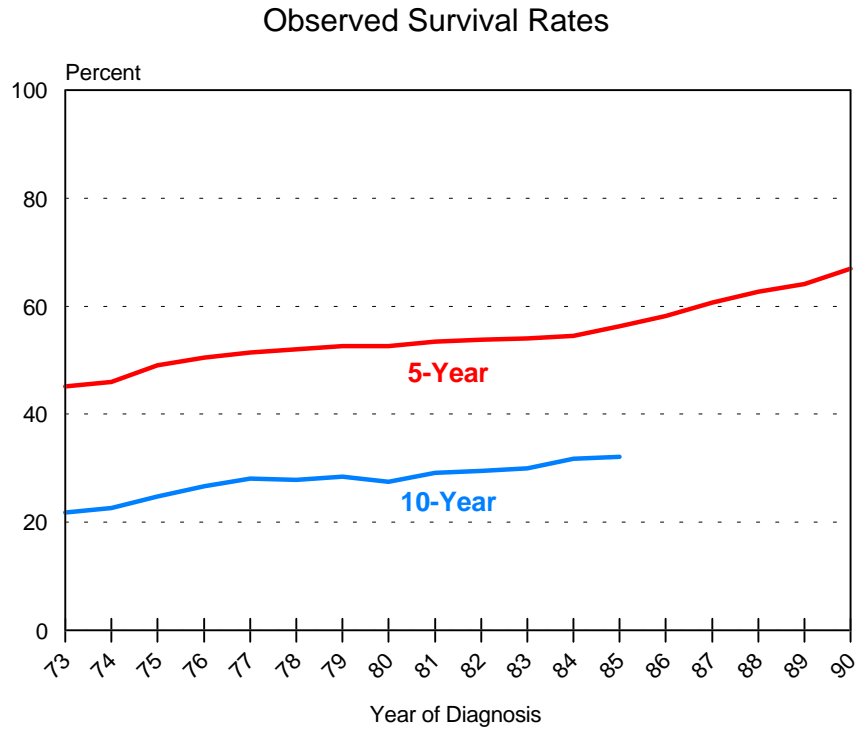
There is a marked variation in relative survival by grade, with men having well differentiated tumors experiencing the highest relative survival and those with poorly differentiated tumors having the worst relative survival (Figure 5.3). Men newly diagnosed with well differentiated prostate cancer from 1988 to 1993 had a five-year relative survival of 100%. During this same time frame, men with moderately differentiated and poorly differentiated prostate cancer had five-year relative survival rates of 99.6% and 73.5%, respectively. Controlling for stage of disease did not appreciably alter these findings.

These survival data suggest that almost two out of every three men diagnosed with prostate cancer today may be expected to survive for at least five years. Consistent improvements in survival have occurred over the last two decades. Given the lower

survival of men diagnosed with distant stage prostate cancer, effective means to detect prostate cancer at an earlier stage may prove useful. However, final confirmation of the usefulness of such efforts must be based on a clear reduction in prostate cancer mortality.

Figure 5.1

Prostate Cancer SEER 5-Year and 10-Year Survival Rates, 1973-1990

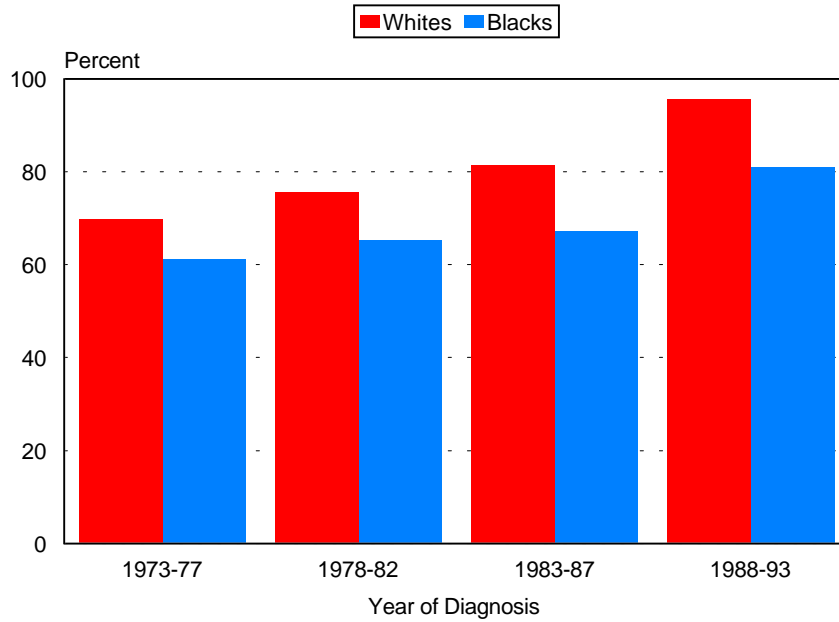


Note: Rates are based on data from the 9 standard SEER registries.

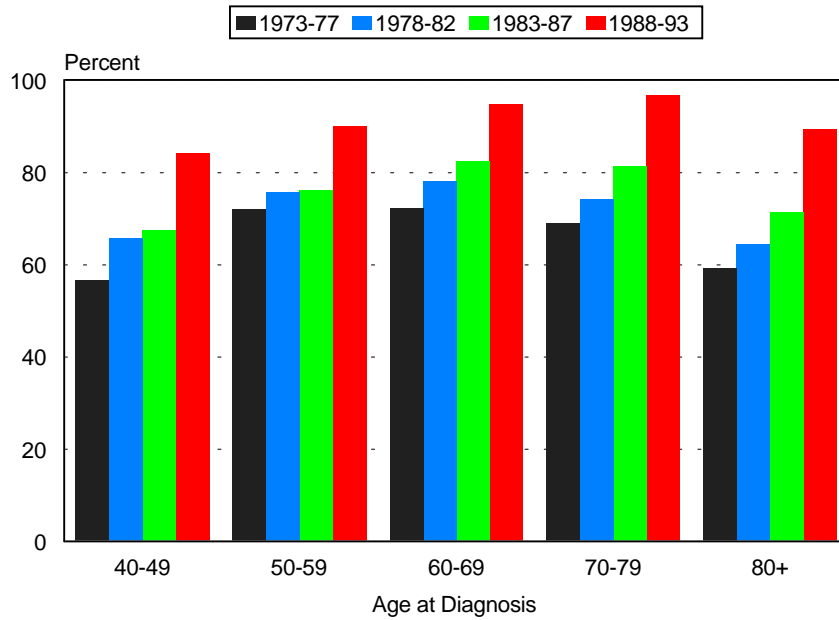
Figure 5.2

Prostate Cancer SEER 5-Year Relative Survival Rates

By Race



By Age at Diagnosis

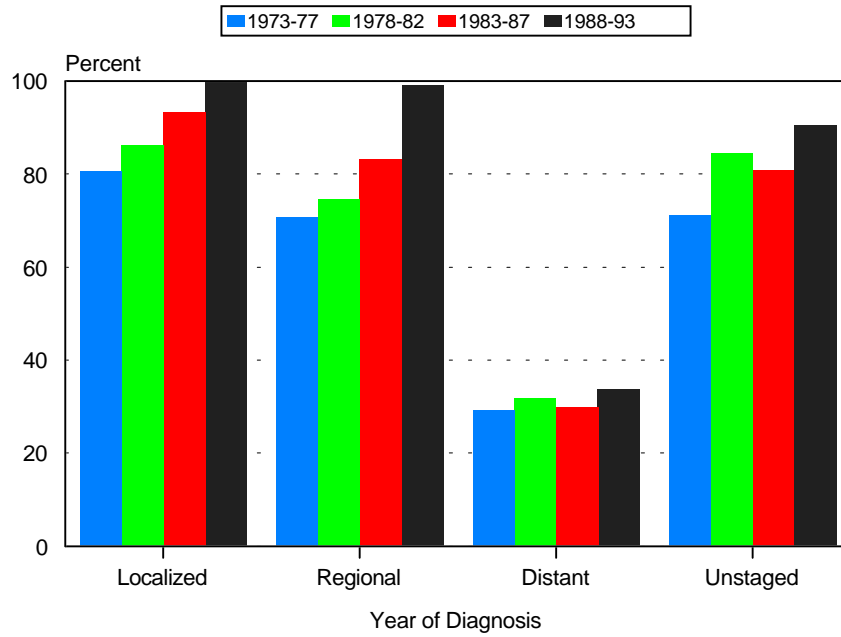


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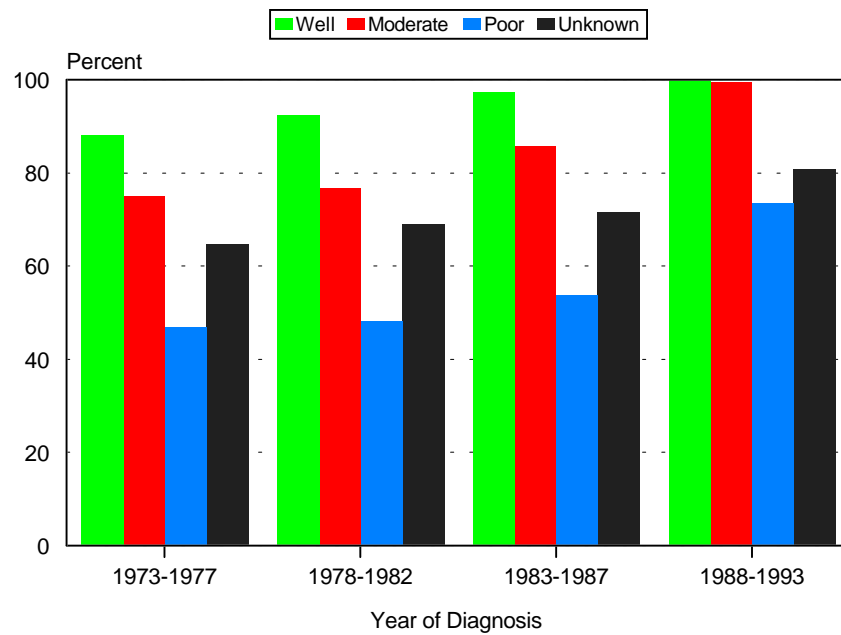
Figure 5.3

Prostate Cancer SEER 5-Year Relative Survival Rates

By Stage



By Grade



Note: Rates are based on data from the 9 standard SEER registries.