

## Type of Health Insurance, Race and the Rate of Prostate Cancer

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**Purpose:** I want to find out if the type of health insurance men have could influence the rate of prostate cancer or not. Is early screening and having health insurance can play a roll on rate of survival? Does race play any roll to have Prostate cancer? I want to answer these and other questions.

**Methods:** In this study men age 40 and above are considered. I analyzed (n=49,011) data from the 1997-2002 National Health Interview Survey (NHIS), the persons and sample adult files. NHIS is an annual survey conducted by the National Center for Health Statistics (NCHS), Hyattsville, Maryland.

**Results:** Among those who have public Health insurance 6.39% have prostate cancer vs. 2.46% for private health insurance. Prostate cancer by race shows that 2.64%, 2.54%, and 1% for whites, blacks and others respectively. Since age is the risk factor for prostate cancer, accordingly

I found that the older you get the higher the chances of getting diagnosed with prostate cancer.

**Conclusion:** As you can see, mostly it was reported that blacks are more likely to have prostate cancer than whites, but according to my findings it is almost the same chance between the two. Between public and private health insurances, it seems that people who have public health insurance 6.39% vs. 2.46% respectively shows that higher diagnoses for people with prostate cancer, this may be indicating that there is better screening for people who have public health insurance than private insurance.

### 1. Introduction

#### 1.1 Overview

Prostate cancer is a major public health problem, which over a lifetime will affect an estimated one in five Americans. The American Cancer Society estimates that there will be about 230,900 new cases of prostate cancer in the United States in the year 2004. About 29,900 men will die of this disease. Prostate cancer is the second leading cause of cancer death in men exceeded only by lung cancer. While 1 man in 6 will get prostate cancer during lifetime only 1 man in 32 will die of this disease. The death rate for prostate cancer is going down. More people are diagnosed with this disease earlier than used to be.

Studies are finding that Black-American men are more likely to have prostate cancer and are to die of it than White or Asian. Thought, it is disputed if it is because of unequal access to medical or biological difference. Most literature sittings put it in short for unknown reason. Most of the time,

prostate cancer grows very slowly. Autopsy studies show that many elderly men who died of other diseases also had prostate cancer that neither they nor their doctor were aware of. But, sometimes prostate cancer can grow and spread quickly. The risk factors for prostate cancer are; Age, Race, Nationality, Diet, Luck of Physical Activities, and Family History. There is nothing we could do about these factors except Diet and Physical Activity.

#### 1.2 Prevention is better than cure.

Cancer remains the second leading cause of death in the United States behind heart disease. This year 1.368 million Americans will learn they have cancer and 563,700 will die of it. The "Annual Report to the Nation on the Status of Cancer, 1975 to 2001" finds that cancer rates dropped 0.5 percent per year from 1991 to 2001, while death rate from all cancers combined dropped 1.1 percent per year from 1993 to 2001. This is due to better prevention, screening that catches cancer early enough to treat it and better therapies.

Some cases of prostate cancer might be prevented. One risk factor that can be changed is diet. You may be able to lower your risk of prostate cancer by eating less fat and more vegetables, fruits, and grains. The American Cancer Society suggests a diet low in red meats (especially those high in fat) and high in vegetables each day. Eat 5 or more servings of fruits and vegetables each day. These guidelines provide an overall healthful approach to eating that may help lower the risk for some type of cancer. While some studies suggest that 50 milligrams of vitamin E daily can lower the risk of prostate cancer, other studies have found no benefit. There is another study going on to find out if the drug finasteride, which prevents the prostate from using male hormones, can reduce prostate cancer risk. Because prostate cancer forms slowly, it will be several years before we know the answer.

### 1.3 Is Early Screening Helpful?

Prostate cancer can often be found early by testing the amount of PSA (Prostate-Specific-Antigen) in your blood. Another way prostate cancer is detected early is when the doctor performs a rectal exam using the Digital Rectal Exam (DRE). If there is a positive indication of presence of prostate cancer then the final test will be biopsy. Because the prostate gland lies just in front of the rectum, the doctor can feel if there are any lumps of hard places in the prostate. These often indicate a cancer. Since about 1990 it has become more common from men to have tests to find prostate cancer early. The prostate cancer death rate has dropped, too. But, we don't yet know if this drop is the direct result of the tests. Studies are going on to try to find the answer to this question. Because of uncertainty, the National Cancer Institute is currently supporting research to learn more about screening men for prostate cancer. Currently, researchers are conducting a large study to determine whether screening men using a blood test for PSA and a DRE can help reduce the death rate from this disease. Full results from this study, the Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial or PLCO, are expected by 2015.

### 1.4 Symptoms of Prostate Cancer

Prostate cancer often does not cause symptoms for many years. By the time symptoms occur, the

disease may have spread beyond the prostate. When symptoms do occur, they may include:

- Frequent urination, especially at night.
- Inability to urinate.
- Trouble starting or holding back urination.
- A weak or interrupted flow of urine.
- Painful or burning urination.
- Blood in the urine or semen.
- Painful ejaculation.
- Frequent pain in the lower back, hips, or upper thighs

These can be symptoms of cancer, but more often they are symptoms of noncancerous conditions. It is important to check with a doctor. As men get older, their prostate may grow bigger and block the flow of the urine or interfere with sexual function. This common condition, called benign prostatic hyperplasia (BPH), is not cancer, but can cause many of the same symptoms. An infection or inflammation of the prostate, called prostatitis may also cause many of the same symptoms as prostate cancer.

### 1.5 Self-reported surveys and medical Records have a strong agreement.<sup>i</sup>

Since the dataset I used is self-reported I want to make sure that there is a strong agreement between self-reported and medical records. Of course generally medical records are accepted as the most accurate source of information documenting cancer treatments. However, as the health care system becomes more decentralized and more cancer care is delivered in outpatient settings, it is increasingly difficult and expensive to review records from many surgeons and medical/radiation oncologists who administer cancer therapies in the community settings. Using 1994-1995 data, the authors compared initial treatment for prostate cancer self-reported by 3,196 U.S. men participating in the Prostate Cancer Outcomes Study with information obtained from medical records. Even though, agreement between self-reports and medical records varied by type of treatments, but generally agreement was excellent for more invasive procedures such as prostatectomy or radiation (more than 80 percent), with decreasing agreement for hormone shots and pills (less than 70 percent). These results can serve as a useful guide to this research, since this is also self-reported survey. These results also help

researchers to contemplating the use of survey as an alternative to medical record abstraction to ascertain treatment in studies of patient outcomes.

<sup>1</sup> Clegg LX, Potosky AL, Harlan LC, Hankey BF, Hoffman RM, Stanford JL, Hamilton AS, *Comparison of self-reported initial treatment with medical records: results from the Prostate Cancer Outcomes Study. Am J Epidemiology 2001; 154:582-7*

## 2. Methods

The data are derived from 1997-2002 National health Interview Survey (NHIS). Among the files within each survey year, I merged the health insurance section from person's files and the Adult Condition section of the sample adult files. There were total of 49,011 persons who reported as diagnosed with prostate cancer. Health insurance section of the NHIS survey has a full range of data items addressing health insurance. The health insurance section covers several different topic areas: type of health care coverage (Medicare, Military/VA, CHAMPUS/TRICARE/Champ-VA, State-Sponsored Health Plan, other government programs, Indian Health Service, and Private Insurance); Managed care arrangements for those covered by Medicare and Medicaid; Private insurance characteristics reported by respondent (HMO or PPO status, source of coverage, existence of employer subsidies for premiums, amount paid by individual/family); Periods of time without health insurance and reasons for no health insurance; Out-of-pocket costs in the past year (general categories). In the 1999-2002 survey year there is additional topic covered, that is Children's Health Insurance Program (CHIP). But, this doesn't affect this study since it looks on the adult population (age  $\geq 40$ ) The Adult Condition section of the 1997-2002 NHIS obtains information from the sample adult as to whether he/she has cardiovascular disease, emphysema and asthma, ulcers, cancer (30 specific types), diabetes, other respiratory conditions, renal conditions, liver conditions, arthritis, joint symptoms, pain, hearing loss, vision loss, or has lost any permanent (or natural) teeth. In most instances, sample adult were asked whether a doctor or other health professional had told them that they had the condition in question (in our case, Prostate Cancer). The conditions data in the 1997-2002 NHIS are considerably different than the conditions data found in the pre 1997 NHIS. The health plan category "public health Insurance

coverage" includes Medicaid, State Children's Health Insurance Program (SCHIP), State-sponsored or other government-sponsored health plan, Medicare, and Military plan. The health plan category "Private Health Insurance" excludes: Plan that paid for only one type of service, such as accidents or dental care. A small number of persons were covered by both public and private plans and thus were included in both groups. A person was also defined as uninsured if he or she had only a private plan that paid for one type of service, such as accidents or dental care. The analyses excluded persons with unknown health insurance status. Race category here is white, black, and other.

*Technical note:* Estimates were calculated by using the NHIS survey weights calibrated to census total for age and race of the U.S. civilian noninstitutionalized population. I used SUDAAN to calculate the estimates to account for the complex sample design of the NHIS. Differences between percentages or rates were evaluated using chi-square test at the 0.05 level. Terms such as "greater than" and "less than" indicate a statistically significance difference. Terms such as "similar" and "no" difference indicate that the statistics being compared were not significantly different.

The three race categories I used are whites, blacks, and others.

*Statistical analysis:* Descriptive statistics and crosstab procedure is used. The NHIS has a complex survey design involving stratification, clustering, and disproportionate sampling. All proportions and population counts presented are weighted to provide national estimate. All p values are two-sided and if less than 0.05 they are considered statistically significant.

## 3. Results

Among those who were diagnosed with prostate cancer 8.10% (0.32, SE) were insured and 1.34% (0.06) were un-insured.

Among those people who diagnosed with prostate cancer 2.46% (0.09) had private insurance against 6.39% (.023) with public insurance. Even though, I can't be for sure, I think the reason for the higher percentage with public health insured people is that it is easier and cheaper to be diagnosed. Low percentage of the private insured people is that may be explained as expensive as it is people who have private insurance doesn't routinely checked by

their doctors. People with private insurance may not have easy access to screening as the people who have public health insurance. As to the prostate cancer by race, 2.64% (0.09) for whites, 2.54% (0.20) for blacks, and 0.81% (0.20) for others. Here it has been reported that blacks are more likely to be diagnosed with prostate cancer than white counter parts is disputable. Because as you can see blacks have the almost the same chance as whites do. When we see prostate cancer by age group, this shows precisely what is expected and what has been said by other researchers all along. Age is the main risk factor for prostate cancer. This is the age of respondents at the time of the survey. The percentage of people who are diagnosed with prostate cancer increases with age. I found that people who are between 40 and 49 with 0.03% (0.01), Between 50 and 59 with 0.69% (0.07), between 60 and 69 with 3.89% (0.23), and people who are 70 and older with 9.48% (0.36).

To be exact and reflecting the accurate result of the age at the time diagnosed with prostate cancer is to take the age diagnosed variable instead of at the time of interview. Thus, we see that 1% of the people diagnosed are between ages 40-49, 15% are diagnosed between 50 and 59, 41% are diagnosed between 60 and 69, and people who are 70 years or older are diagnose 42%.

*Note: this study is independently curried out by the author and the sole responsibility lies on author, not CDC/NCHS.*

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