

The Importance of Prostate Cancer Screening in High Risk Men

Lannis Hall MD, MPH

Director of Radiation Oncology

Siteman Cancer Center Barnes- Jewish St.
Peters

US Preventive Services Task Force

- Recommends no screening of any man by PSA regardless of risk
- No screening in High Risk men with family history or of African American descent
- Grade D Recommendation Harms Outweigh the Benefits
- Insurance carriers can limit or deny PSA screening reimbursement

Downside of Screening: Detecting Clinically Insignificant Prostate cancers

- Biopsies are painful and can cause infections and urinary and sexual dysfunction
- Autopsy studies in men 50 years and older without a history of prostate cancer, show a 30% incidence of occult disease.
- In men 80 years of age, 70% have occult disease

PSA Screening ERSPC Trial

- 162,000 randomized to PSA screening every four years or no screening
- Men were followed up for median 13 years
- 42% more cancers were found in the screened group vs the control group
- There was a 21% reduction in death at 13 years compared to men who were not screened 1/700 screened 1/29 diagnosed

PSA Screening ERSPC Trial

- Screening identified more low risk cancers
- Screening identified more organ confined cancers –
- CRITICISMS
- Study conducted in 8 countries w variation in screening guidelines

PSA screening PLCO trial

- 76,000 men were randomized to PSA and DRE for six years or **usual care** by primary physician
- PSA >4 ng/ml then biopsy was recommended
- More prostate cancers were detected in men screened (22% more)
- Mortality at 7 years no different

PLCO Trial

- Major criticisms
- 52% of the control group(usual care) reported PSA screening during study
- A total of 85% had a PSA before study entry or during the study
- Only 4% of the Participants African American.. Inadequate for Statistical Analysis

Age-Specific Rates 2008-2012

rate per 100,000 men

Age at Diagnosis/Death	SEER Incidence			U.S. Mortality		
	All Races, Males	White Males	Black Males	All Races, Males	White Males	Black Males
35-39	1.1	0.9	2.8	0.0		
40-44	10.2	8.7	25.0	0.2	0.1	0.4
45-49	45.5	39.1	105.6	0.9	0.7	2.2
50-54	139.5	128.2	262.3	3.3	2.7	8.3
55-59	302.6	283.1	530.8	8.8	7.5	21.9
60-64	518.6	493.4	856.2	20.1	17.3	50.3
65-69	788.1	753.0	1207.3	40.4	35.4	101.4
70-74	835.4	800.7	1167.8	77.4	68.8	189.9
75-79	741.2	700.7	1004.4	138.8	127.1	312.1
80-84	545.2	512.8	745.3	244.2	228.2	533.8
85+	444.2	420.5	666.4	513.5	491.0	975.7

SEER Incidence of Distant Stage Prostate Cancer

Powell et al, CEBP, 2014

Table 1. Age-specific incidence rates of malignant distant stage prostate cancer in AAM and EAM, SEER-13, 1995–2010

Age at diagnosis	EAM rate	AAM rate	Rate ratio	Ratio <i>P</i>
40–49	0.70	2.49	3.55	<0.0001
50–59	5.45	16.91	3.10	<0.0001
60–69	19.78	57.76	2.92	<0.0001
70–79	43.16	104.52	2.42	<0.0001

NOTE: Rates are per 100,000 males.

Source: SEER Program (www.seer.cancer.gov) SEER*Stat Database: Incidence - SEER 13 Regs Research Data, Nov 2012 Sub (1992–2010) <Katrina/Rita Population Adjustment>

Gleason Score in Prostatectomy Specimens Stratified by Race, Powell et al, CEBP,2014

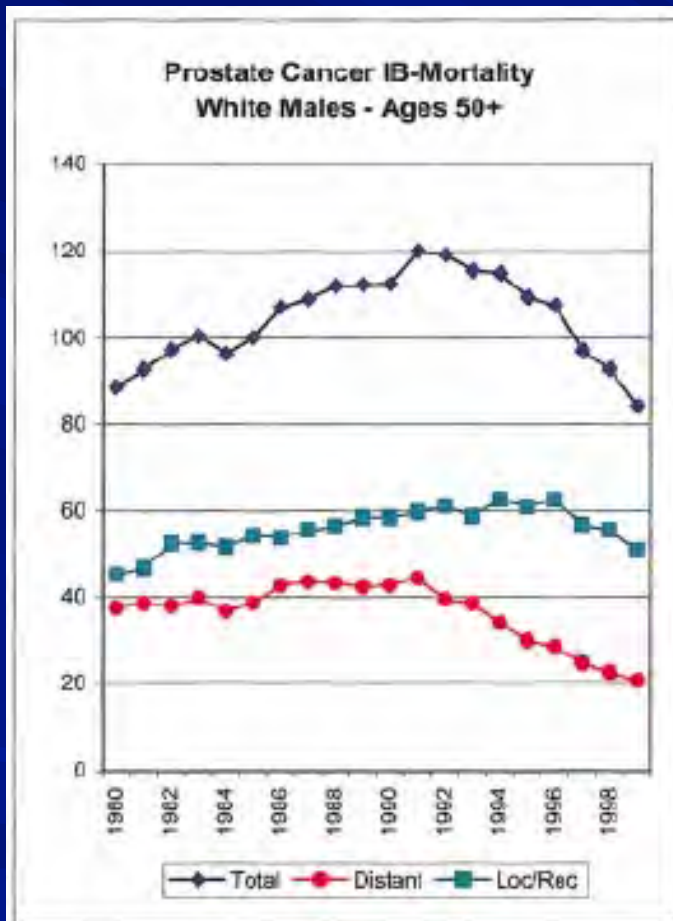
Table 3. Gleason score for malignant prostate cancers cases who underwent radical prostatectomy, SEER-18, 2004–2010

Age at diagnosis, y	Gleason score	EAM	AAM	<i>P</i>
40–49	2–6	52.4%	45.4%	<0.0001
	7–10	47.6%	54.6%	
50–59	2–6	44.8%	37.6%	<0.0001
	7–10	55.2%	62.4%	
60–69	2–6	37.4%	32.4%	<0.0001
	7–10	62.6%	67.6%	

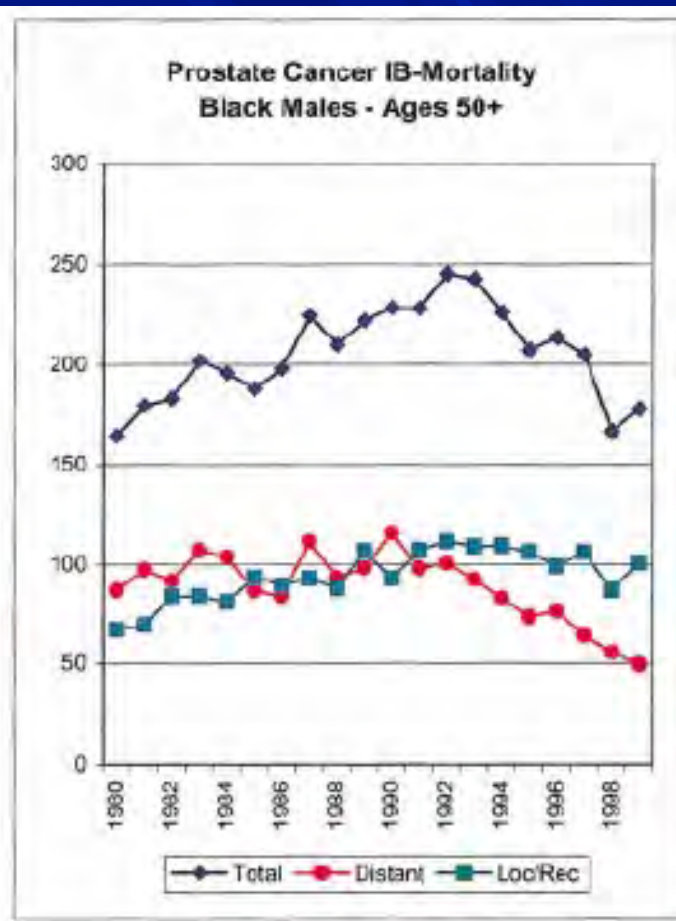
Source: SEER Program (www.seer.cancer.gov) SEER*Stat Database: Incidence - SEER 18 Regs Research Data + Hurricane Katrina Impacted Louisiana Cases, Nov 2012 Sub

Prostate Cancer Mortality by Stage

Chu et al, Cancer 2003



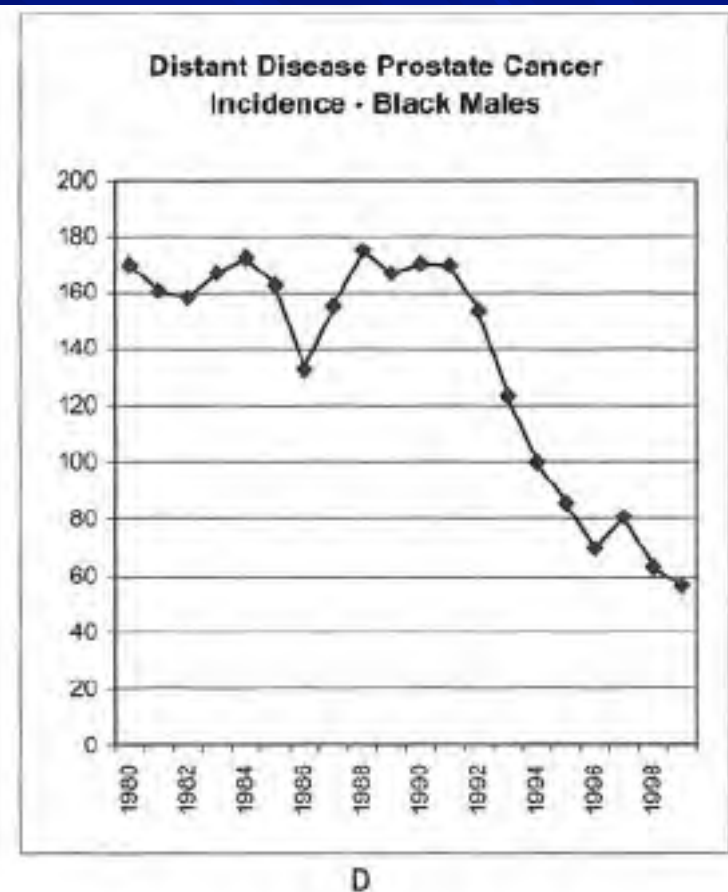
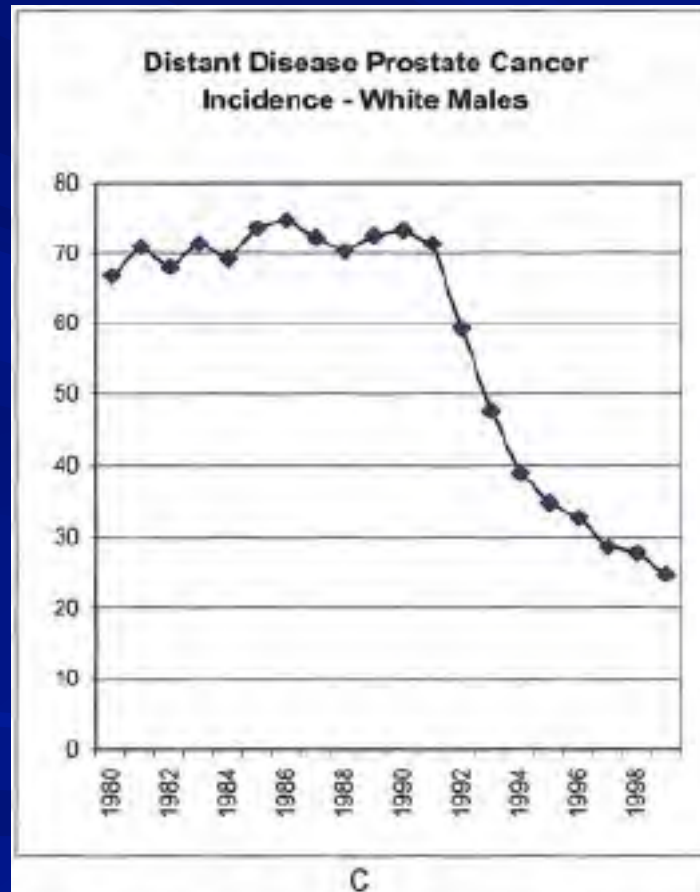
A



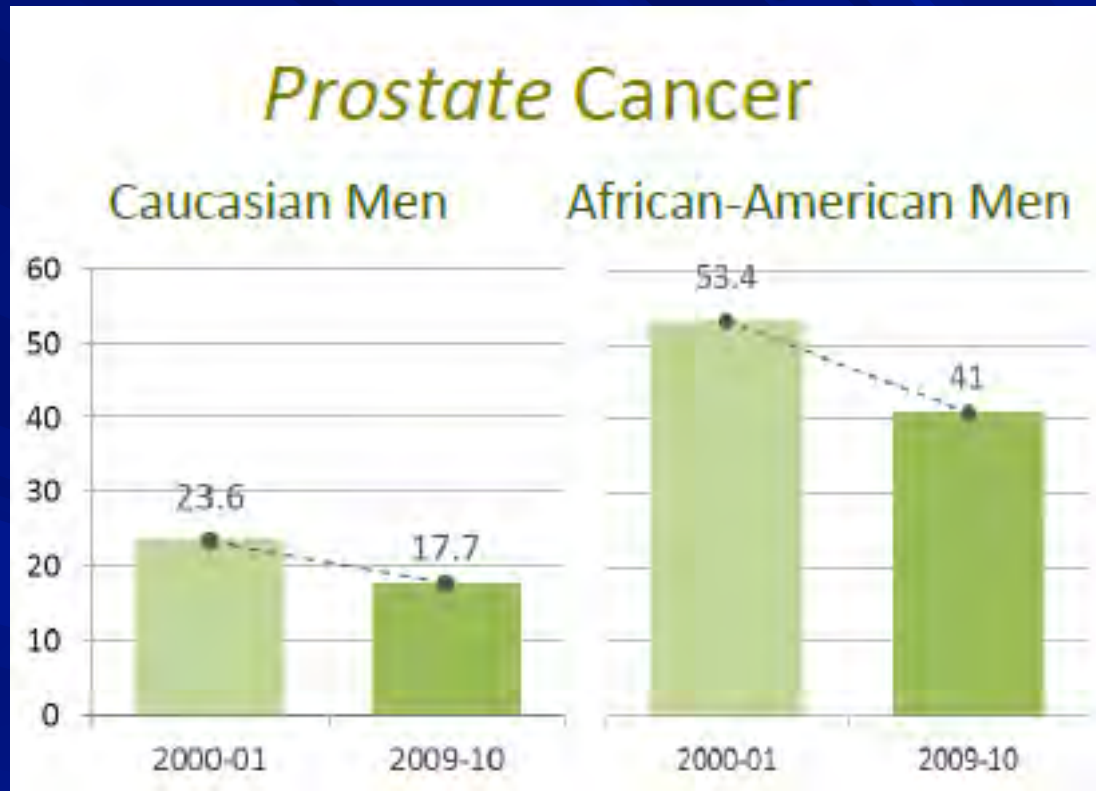
B

Prostate Cancer Incidence in the Metastatic Setting

Chu et al, Cancer 2003

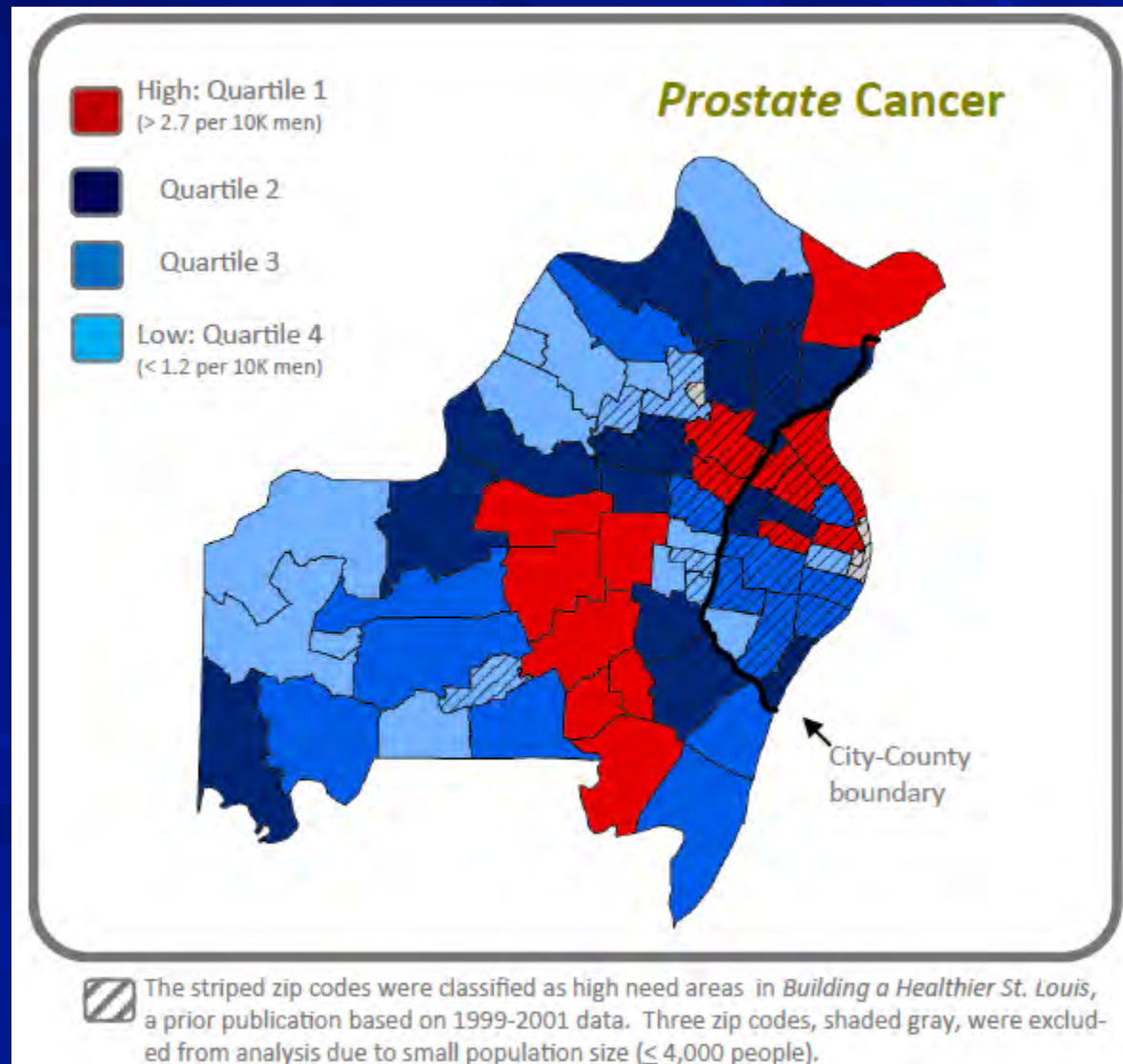


Prostate Cancer Mortality STL 2000-2010

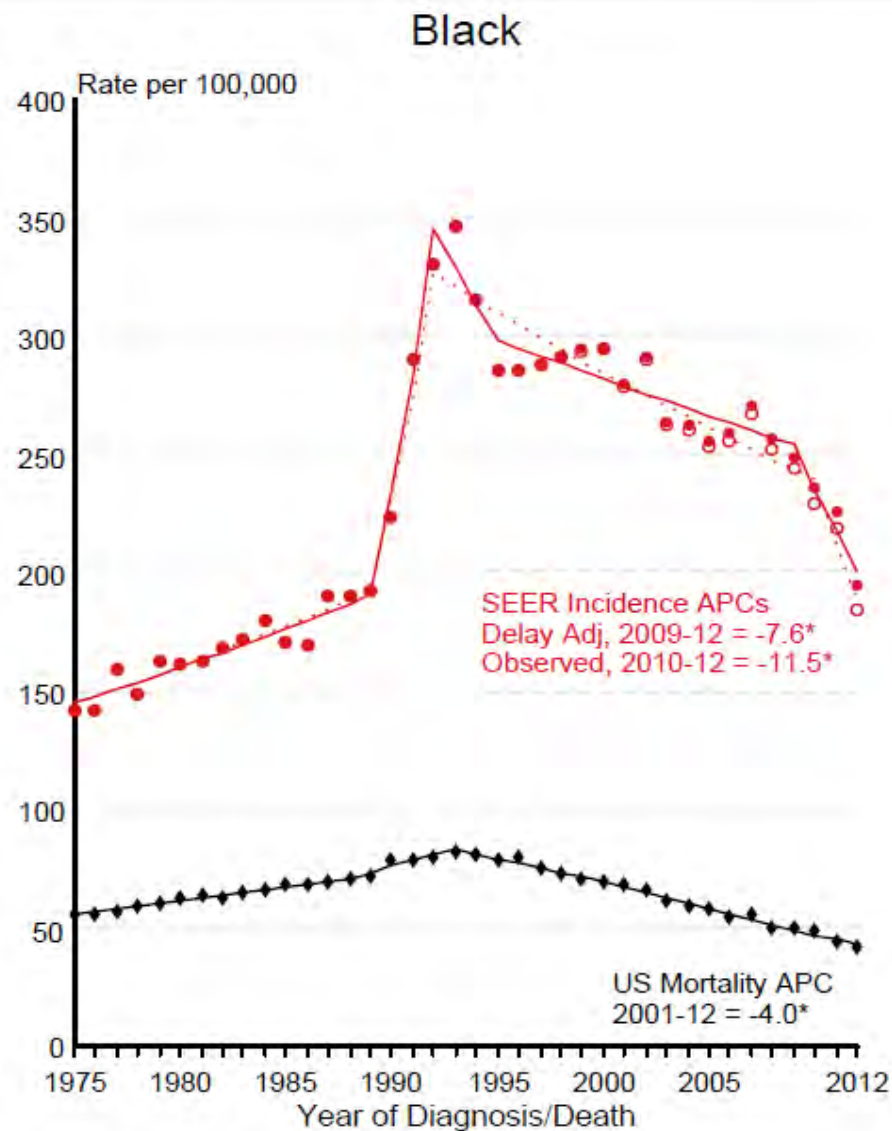
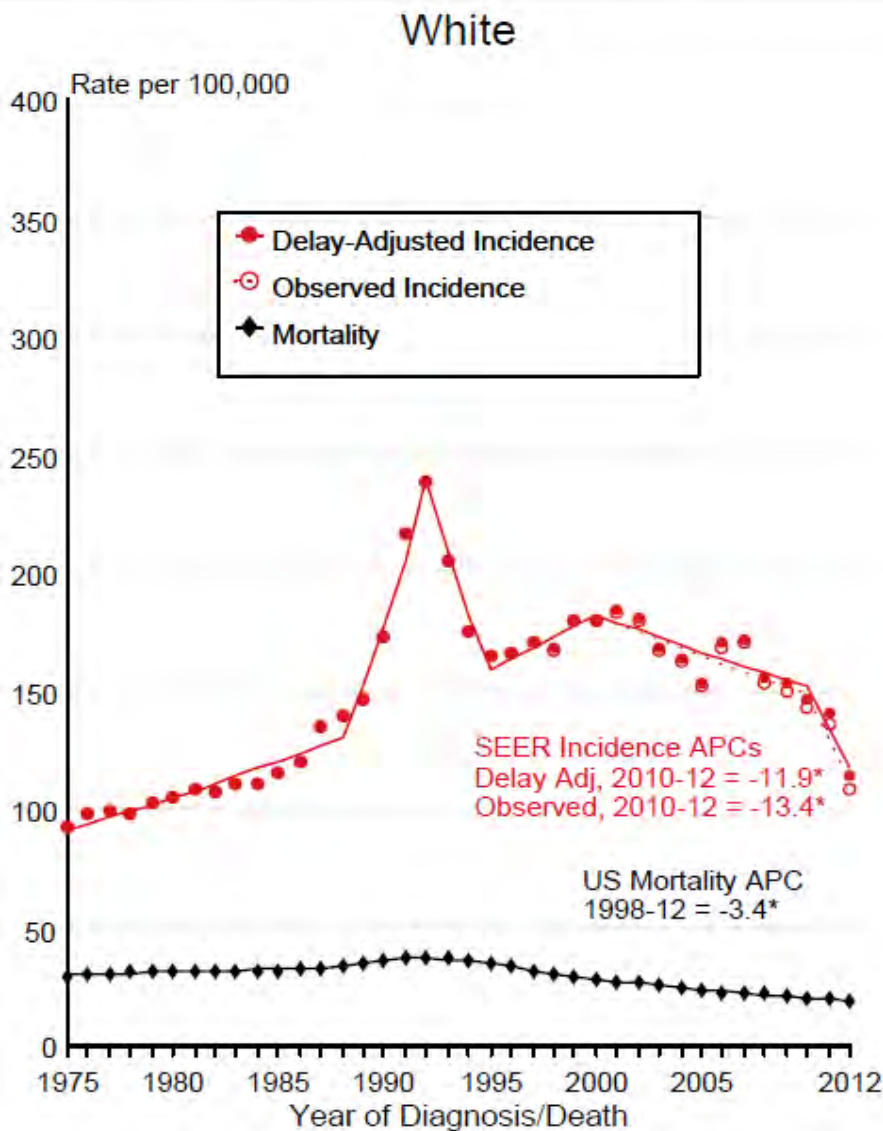


- The racial health disparity related to prostate is much greater than breast and colorectal cancer in the region. African American men are 2.3 times more likely to die from prostate cancer than Caucasian men.

Prostate Cancer Mortality STL Region



SEER Observed Incidence, SEER Delay Adjusted Incidence and US Death Rates Cancer of the Prostate, by Race



Source: SEER 9 areas and US Mortality Files (National Center for Health Statistics, CDC).

^a Rates are age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1103).

Regression lines and APCs are calculated using the Joinpoint Regression Program Version 4.2.0, April 2015, National Cancer Institute.

The APC is the Annual Percent Change for the regression line segments. The APC shown on the graph is for the most recent trend.

* The APC is significantly different from zero ($p < 0.05$).

Smart Screening

- Promote risk adjusted screening
- Highlight risk adjusted screening recommendations from a trusted organization
- To recognize an increase in screening rates in high risk populations

Smart Screening Phase I

- Statement and Petition to educate physicians through email
- Possible dissemination through grand rounds, medical staff meetings, physician newsletters, medical society publications, STL American
- Educational materials in doctors office
- Potential surveys to medical group for baseline knowledge for research interest

Smart Screening Phase II

- Dissemination of Smart Screening in the communityeducation and screening
- Partnerships with health ministries
- Sustained educational campaign through media (print and radio)
- FQHC involvement and partnership
- Research opportunities