

Prostate specific antigen screening utilization has significantly dropped over the last two decades, even amongst men with extended life-expectancy: a United States nationwide analysis

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Introduction

- Estimated life expectancy (LE) is central to assessing the relative mortality benefit of prostate specific antigen (PSA) screening among men.
 - Data from ERSPC (Schroder, *NEJM* 2009) and follow up studies (Schroder, *Lancet* 2014; Carlsson, *Eur Urol* 2019) show meaningful mortality benefit >10 year follow up
 - Number need to diagnose=18 men (16-year follow up)
 - Number needed to diagnose=37 men (11 year follow up)
- Limited data exists regarding screening for those with extended LE (who are arguably more likely to benefit from screening).
- The aim of the current study was to assess temporal trends in screening in US men with limited vs extended LE using a nationally representative dataset.

Material and Methods

- We used publicly-available data from National Health Institution Survey (NHIS) 2000-2018, the world's oldest continuously administered survey of non-institutionalized US population.



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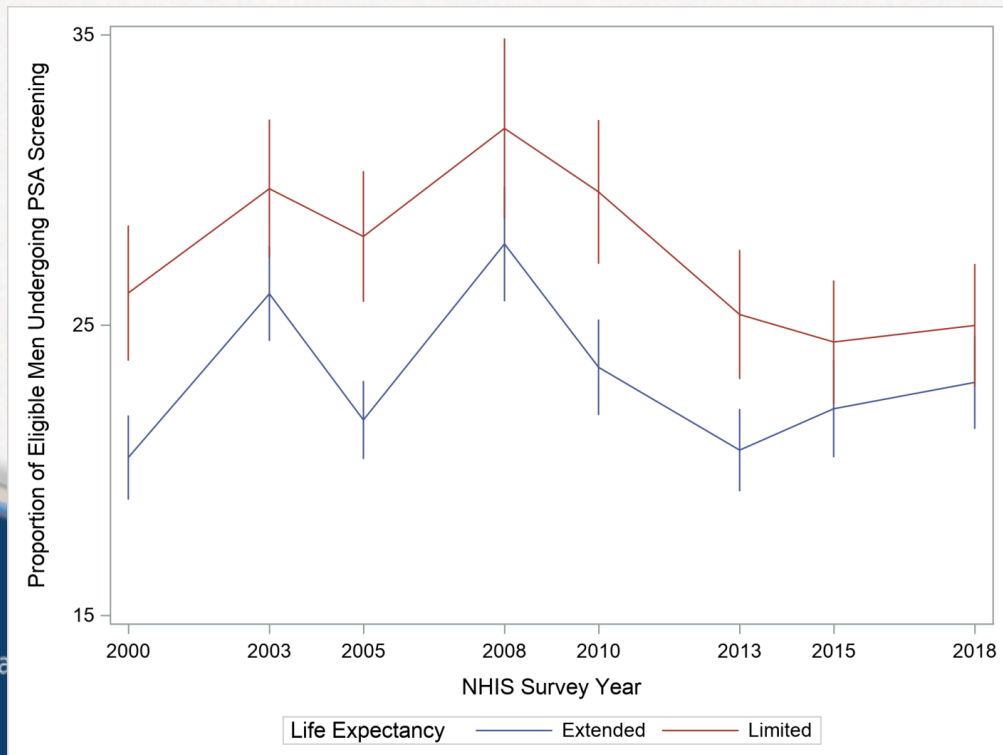
Material and Methods

- Men aged ≥ 40 within NHIS 2000-2018 dataset who reported PSA testing as a 'part of routine exam' (screening) in the last 12 months.
- Previously validated Schonberg index to assess LE (based on 11 risk factors: age, sex, cigarette use, BMI, functional limitations, difficulty with mobility, hospitalizations in the past year, perceived health, and history of COPD, diabetes, and cancer [excluding non-melanoma skin cancers]).
 - Men with score of ≥ 10 were considered to have **limited LE (i.e. LE <10 years, or >50% risk of 10-year mortality)**, while those with score of ≤ 6 were considered to **have extended LE (i.e. LE >15 years, or <50% risk of 15-year mortality)**.
- Temporal trends in PSA screening in either group were compared using design-corrected logistic regression, and multivariable analyses were performed to study association between LE and PSA screening.
- Subgroup analyses were performed for men aged ≥ 65 , for Black men and men with family history of prostate cancer.

Results

Overall, 35.5 million men were included in the extended LE group, while 1.9 million were in the limited LE group (weighted numbers).

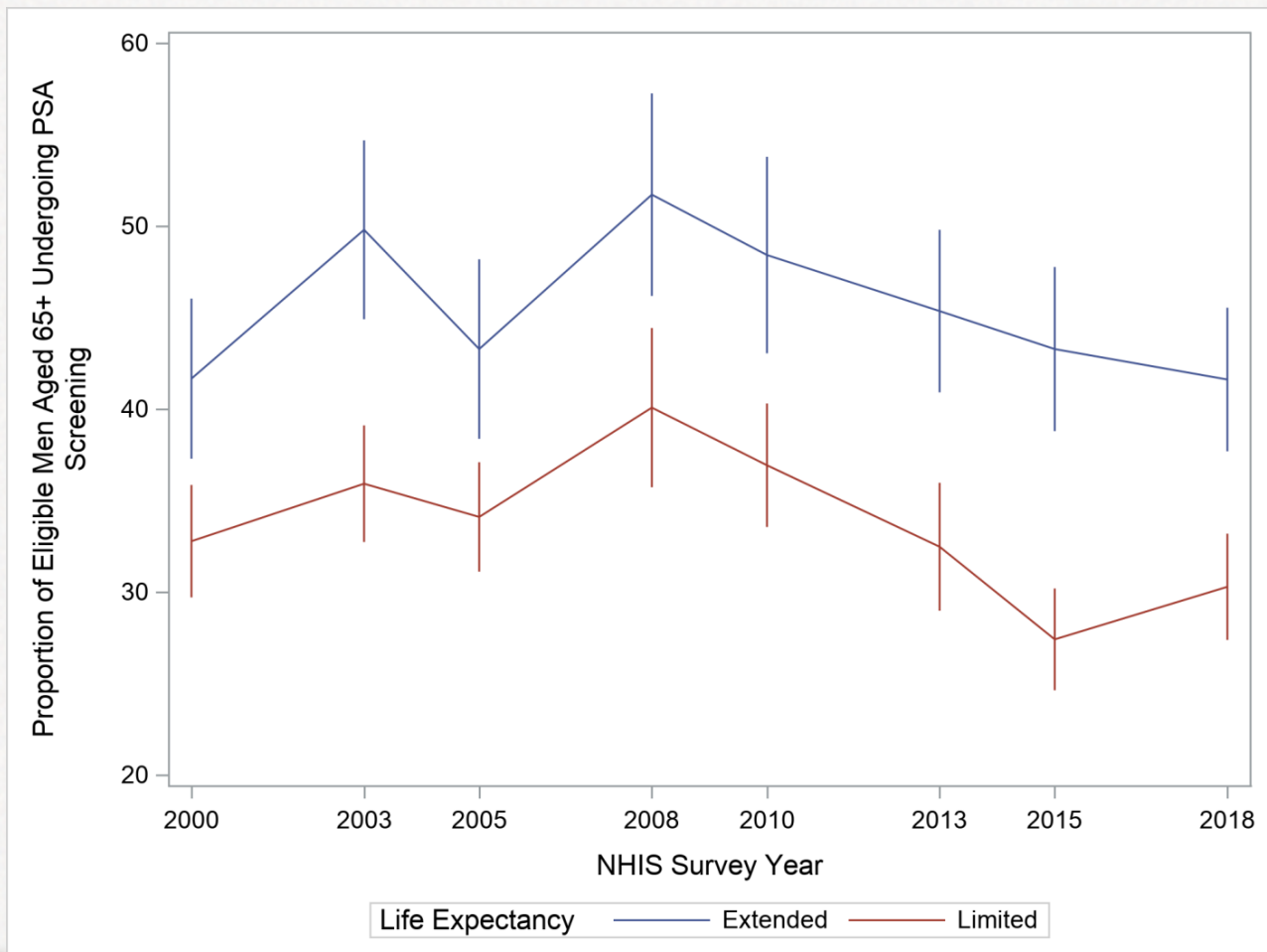
The proportion of men undergoing annual PSA screening increased between 2000 and 2008 for both extended and limited LE groups (27.8% and 31.8% respectively), and declined thereafter (23 and 25% respectively, $p < 0.05$ for trend analyses)



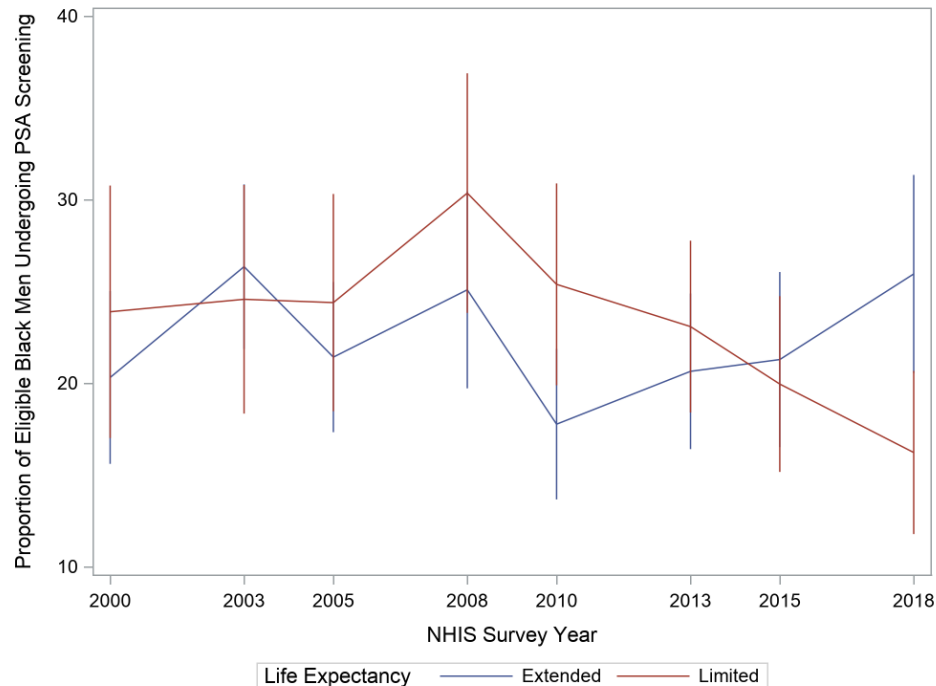
On weighted multivariable regression analyses, **LE was NOT significantly associated with PSA screening** (OR for extended vs limited LE 0.93, 95% CI 0.86-1.0).

Earlier survey years (2003-08 vs. 2010), higher educational status, marital status, undergoing prior colonoscopy, health-care provider visit in the year prior, and being insured were significantly associated with higher odds of PSA screening.

Results

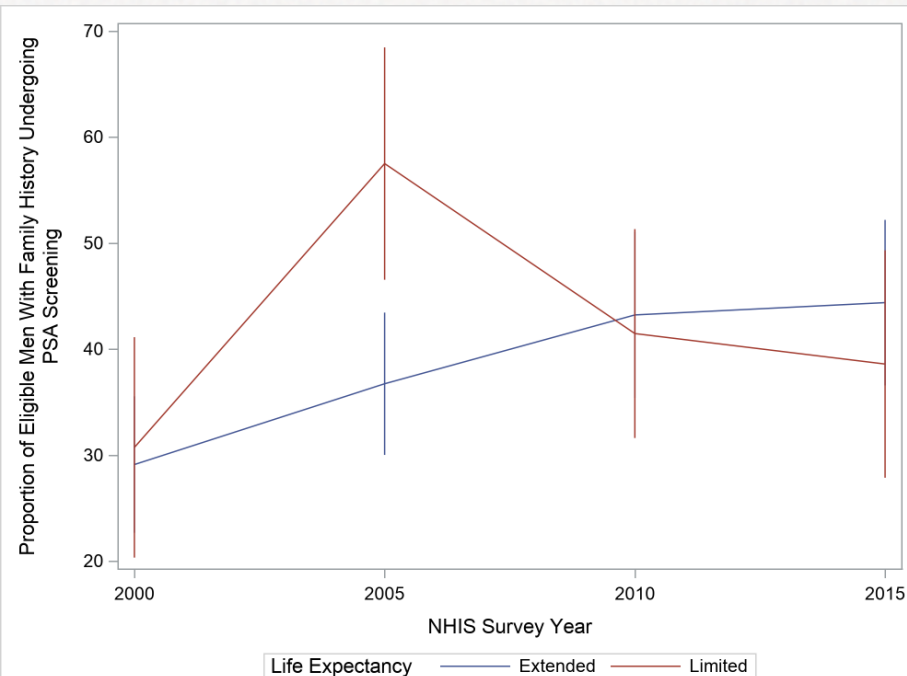


Results



Black men

Men with family history of PCa



Discussion

- Overall drop in the utilization of PSA screening over the last two decades, without a distinction based on LE.
- It is concerning that **even in men with an extended LE (i.e. >15 years), only 1 in 4 receive PSA screening**, especially given the Level-1 evidence showing increased mortality benefit of PSA screening with longer survival.
- Black men and men with family history of PCa: increasing prevalence of PSA screening for extended LE
- Reasons? difficulties in estimating and/or discussing LE prior to ordering PSA screening, or the ambivalence of national guidelines regarding efficacy of screening, or a combination of both.