

### Comparing practice- versus provider-level variation in use of Active Surveillance for men with low-risk prostate cancer

Gregory Aufferberg\*, Apoorv Dhir, Susan Linsell, Ann Arbor, MI, Brian Lane, Grand Rapids, MI, David Miller, Ann Arbor, MI, Michael Cher, Detroit, MI, for the Michigan Urological Surgery Improvement Collaborative, Ann Arbor, MI

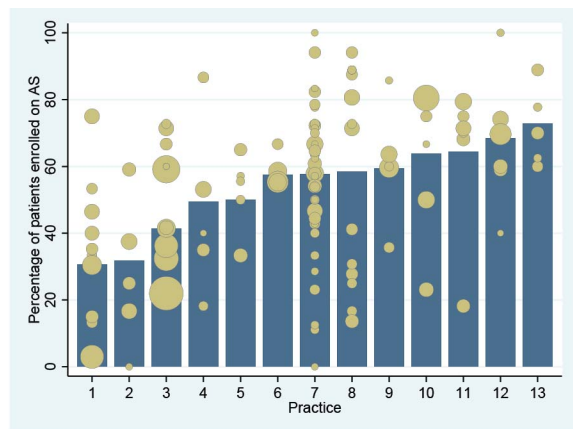
**INTRODUCTION AND OBJECTIVES:** Variation in the utilization of Active Surveillance (AS) across urology practices has been described, but less is known about the degree of variation among urologists in the same practice. Furthermore, the relationship between the volume of low-risk patients a urologist manages (i.e., panel size) and his/her rate of AS utilization is not well described. In this context, we compared rates of AS utilization for men with low-risk prostate cancer (CaP) both within and across practices in Michigan to clarify whether efforts to decrease variation are best focused at practices or individual surgeons.

**METHODS:** The Michigan Urological Surgery Improvement Collaborative (MUSIC) is a consortium of 43 diverse academic and community urology practices that maintains a prospective clinical registry for all patients diagnosed with CaP. From the registry, we identified all MUSIC practices with at least five urologists that each managed  $\geq 5$  men with newly-diagnosed low-risk CaP (i.e., clinical stage  $\leq$  T2a, PSA  $< 10$  ng/mL, and biopsy Gleason score  $\leq 6$ ) from 1/2012 through 7/2016. We then examined the proportion of men undergoing initial AS across different practices and among surgeons within a given practice. Subsequently, a regression model was fit to determine whether a urologist's rate of AS was correlated with individual panel size.

**RESULTS:** We identified 124 urologists from 13 practices that managed 2,646 men with low-risk CaP. The median practice and provider panel size was 166 (range 70-524) and 16 (range 5-141) patients, respectively. The proportion of men entering initial AS varied broadly across practices (range 30.6-72.9%; median 57.7%;  $p < 0.001$ ) (Figure). In most practices, surgeon-specific use of initial AS also varied widely, with a maximum range of 0-100% in a practice with 38 urologists (Figure). There was no significant relationship between a urologist's panel size and his/ her rate of AS utilization ( $R^2 = 0.01$ ,  $p = 0.17$ ).

**CONCLUSIONS:** The proportion of patients entering initial AS varies widely across urology practices, among surgeons in the same practice, and is not correlated with a urologist's panel size. These data suggest that interventions aimed at optimizing AS practice patterns must be tailored to individual surgeons rather than larger organizations regardless of patient volume.

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**Figure:** Variation in rates of AS for men with NCCN low risk CaP by practice (bars) and by providers within each practice (dots). Size of dot scaled to represent number of eligible patients seen by a given provider (Range: 5-141).