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The Near-future Impact of Retirement on the Urologic Workforce: Results From the American Urological Association Census

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OBJECTIVE	To assess self-perceived planned retirement patterns among urologists by using the American Urological Association Census Data. With an expanding elderly population and an aging urologic workforce, concerns regarding increased demand and decreased supply of urologists have been raised.
MATERIALS AND METHODS	We analyzed data from the 2014 American Urological Association Census, which is a specialty representative survey distributed to the urologists who practice in the United States. A total of 2204 census samples were weighted to represent 11,703 urologists who practiced in the United States in 2014. We compared urologists who are nearing retirement (within 5 years of their planned retirement) with the rest of urologists on their demographic, geographic, and practice characteristics.
RESULTS	Of the 11,703 practicing urologists in the United States, 3181 (95% confidence interval: 2884-3479) or 27% (95% confidence interval: 25%-30%) are nearing planned retirement. The mean age (standard deviation [SD]) of urologists nearing retirement (69, SD = 8.2) was older than nonretiring urologists (48, SD = 10.3), $P < .01$. Nearly double the proportion of nearing retirement urologists is found in nonmetropolitan compared to nonretiring urologists, 534 (17%) vs 782 (9%), $P < .01$, respectively. Urologists nearing retirement are more likely to practice general urology compared to nonretiring urologists, 2341 (74%) vs 5072 (60%), $P < .01$. Among urologists nearing retirement, 2155 (68%) of them still perform inpatient operations.
CONCLUSION	More than one-fourth of existing practicing urologists plan to retire in the next 5 years. General urology and urology practices outside of metropolitan areas will be impacted the most by the planned retiring workforce. UROLOGY 94: 85–89, 2016. © 2016 Elsevier Inc.

W ith an expanding elderly population and an aging urologic workforce, concerns have been raised regarding increased demand for urologists and an expected decreased urologist-to-population ratio.[1,2] This increasing demand is well documented, as the incidence and prevalence of urologic diseases such as nephrolithiasis, benign prostatic hyperplasia, erectile dysfunction, and urologic cancers are growing.[3,4] Additionally, elderly patients required 3 times the rate of surgical service the general population uses.[5] Despite this increased demand, the American urologic workforce is aging, as 50% of urologists are 55 years of age or older.[1,6] Although urology residency programs have increased in size over the years, the increase is not enough to meet current demands.[7,8] Overall, it is expected that urologic procedural volume will increase by about 35% by 2020.[9]

The impact that retirement will have on the urologic workforce is largely unknown. The majority of studies have used older age as a surrogate for retirement age when they are not synonymous.[1,10] In 1998, Gee et al found that the average urologist plans to retire at the age of 64 years old, and that 90% of urologists report having an official retirement plan at their practice.[11] The specific subspecialty areas of urology that will be impacted the most by retirement are also understudied. One study suggested a need for more academic urologists, as there is an aging academic urologist population as well as a decrease in the number of new

trainees entering academics.[10] Another showed that younger urologists are joining group practices in urban areas, leaving a need for urologists in more rural areas.[1] Taken together, the studies suggest an impending urologist workforce shortage; however, many important details related to this issue remain poorly defined. These studies collectively fail to define retirement age, from where retirement will occur, and what gaps in clinic care will be made by retirement.

The current study aims to explore the impact of retirement on the urologic workforce by using the current age and the planned age of retirement in a nationally representative sample of urologists. We seek to understand which geographic regions and which urologic subspecialties will be most affected. The results of this study may aid future workforce planning decisions.

MATERIALS AND METHODS

Study Population

We analyzed data from the 2014 American Urological Association (AUA) census, which is a specialty-wide survey distributed to the entire urology community in the United States.[6] The 2014 AUA census data contain demographic, education, geographic, and practice characteristics of a sample of U.S. practicing urologists. The census data used in the current study were collected from May 2014 to September 2014. A total of 2204 urologists completed the census, which were weighted to represent 11,703 practicing urologists in the United States as defined by the National Provider Identifier.[6] Census samples were weighted based on poststratification factors (ie, gender, location, certification, status and years since initial certification) to adjust for the representation of each respondent in a census survey by assigned proper sample weight.[6] In this study, we compared urologists who are nearing retirement (within 5 years of their planned retirement) with the rest of urologists on their demographic, geographic, and practicing characteristics. The corresponding author's institutional review board gave the study exempt status.

Predictor Variables

Current age and planned retirement age were collected in the census and the difference is used to define a practicing urologist is nearing planned retirement if he or she is within 5 years of his or her current age or is not nearing planned retirement otherwise.

Outcome Variables

The AUA census collects demographic and practice characteristics of each participant. Demographic characteristics analyzed in our study included age, race, and ethnicity (white, non-white, other, Hispanic), gender (male, female), census region (Northeastern, New England, New York, Mid-Atlantic, North Central, South Eastern, South Central, and Western), and level of rurality (metropolitan, micropolitan, and small town or rural village). Levels of rurality were defined using zip codes that correspond to the rural-urban commuting areas[12] of the U.S. Census.[13] Practice characteristics analyzed in our study included subspecialty type (general, oncology, sexual health or reconstruction, female pelvic medicine, endourology or robotics, and other), institution type (academic, public or private hospital, single urology group, solo practice, multispecialty group, or other), and clinical practice characteristics (number of office locations, clinical hours, inpatient operations performed, patients seen per week,

total hours per week, and total years in urology). Except for gender and location that were collected from the National Provider Identifier file, all other variables were self-reported by respondents in the AUA 2014 Census.

Statistical Analysis

All data were analyzed by the IBM SPSS Statistics Software version 23.0. The complex samples function in SPSS was utilized to deal with complex survey samples to generate representative data by specialty. These data were analyzed with the Pearson's chi-square test (two sided) and the Student t test (two sided). Bivariate associations of planned retirement and demographic and practice characteristics were calculated using a Pearson's chi-square test. A Student t test was used for all continuous variables. All tests were two sided and statistical significance for all cases was defined as $P \leq .05$.

RESULTS

The mean age of all 11,703 practicing urologists in the United States was 53. Among all practicing urologists, 3181 (95% confidence interval [CI]: 2884-3479) or 27% (25%-30%) of them are nearing planned retirement. The mean age (standard deviation [SD]) of urologists who are nearing planned retirement (69, SD = 8.2) was older than nonretiring urologists (48, SD = 10.3) ($P < .01$). The mean age of planned retirement of the 11,703 urologists is 68 (SD = 7.6). The mean age of projected retirement for those urologists nearing planned retirement (69, SD = 8.6) was older than the nonretiring urologists (67, SD = 7.1) ($P < .01$). A larger proportion of urologists nearing retirement were male (3121 [98%]) compared to nonretiring urologists (7,538 [89%]) ($P < .01$). The Mid-Atlantic, New England, North Central, and South Central regions had more urologists nearing retirement. Nearly double the proportion of nearing retirement urologists are found outside metropolitan areas (534 [17%] vs 782 [9%]) ($P < .01$) compared to nonretiring urologists (Table 1).

The percentage of urologists nearing planned retirement was more likely to practice general urology (2341 [74%]), which was significantly higher than that of nonretiring urologists (5072 [60%]) ($P < .01$). No differences were observed between urologists nearing planned retirement and nonretiring urologists by subspecialty. A greater proportion of urologists nearing planned retirement practice was in a solo practice compared to nonretiring urologists (627 [20%] vs 816 [10%]) ($P < .01$). Among urologists nearing retirement, 2155 (68%) of them still perform inpatient operations, whereas the majority of nonretiring urologists (7562 [89%]) perform inpatient operations ($P < .01$). Those urologists nearing planned retirement see an average of 88 patients per week (95% CI [86.7-89.1]), whereas those further from retirement see an average of 96.5 patients per week (95% CI [96-97]) ($P < .01$). Fewer urologists nearing retirement use AUA guidelines in their practices compared to nonretiring urologists (2883 [91%] vs 8217 [96%]) ($P < .01$) (Table 2).

Comment

This study used a nationally representative sample of American practicing urologists to assess the impact of retirement