Health Services Research

The Expanding Role of Advanced Practice Providers in Urologic Procedural Care

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OBJECTIVE To understand the role of Advanced Practice Providers (APPs) in urologic procedural care and its change over time. As the population ages and the urologic workforce struggles to meet patient access demands, the role of APPs in the provision of all aspects of urologic care is increasing. However, little is currently known about their role in procedural care.

MATERIALS AND METHODS Commonly performed urologic procedures were linked to Current Procedural Terminology (CPT) codes from 1994 to 2012. National Medicare Part B beneficiary claims frequency was identified using Physician Supplier Procedure Summary Master Files. Trends were studied for APPs, urologists, and all other providers nationally across numerous procedures spanning complexity, acuity, and technical skill set requirements.

RESULTS Between 1994 and 2012, annual Medicare claims for urologic procedures by APPs increased dramatically. Cystoscopy increased from 24 to 1820 (+7483%), transrectal prostate biopsy from 17 to 834 (+4806%), complex Foley catheter placement from 471 to 2929 (+522%), urodynamics testing from 41 to 9358 (+22,727%), and renal ultrasound from 18 to 4500 (+24,900%)

CONCLUSION We found dramatic growth in the provision of urologic procedural care by APPs over the past 2 decades. These data reinforce the known expansion of the APP role in urology and support the timeliness of ongoing collaborative multidisciplinary educational efforts to address unmet needs in education, training, and guideline formation to maximize access to urologic procedural services. UROLOGY ■■: ■■–■■, 2017. © 2017 Elsevier Inc.

As the U.S. population ages and the burden of urologic disease increases, current and projected urologist supply will likely not meet patient access and care demands. To address the workforce crisis, urologists have increasingly partnered with advanced practice providers (APPs)—a term which within urology functionally comprises physician assistants (PAs) and nurse practitioners (NPs)—to extend patient care capabilities. This trend in urology mirrors that of the American and global health-care systems across all specialty groups, where APPs now represent over 25% of available medical providers,[1,2] with projections for profound growth for both the PA and NP fields over the next 10 years.[2,3] In fact, while APPs were traditionally associated with primary care and medical specialties, surgical specialties now represent the second highest area of employment for PAs.[1]

Because nonoperative procedures comprise a significant portion of the care traditionally provided by urologists, these global shifts in APP care could logically suggest an expansion of the APP role to meet procedural demands for urologic patients. To this point however, little is known about the roles of APPs within urology, and especially in procedural care. Our group's previous survey queries, both of urologists[4] and APPs,[5] serve as the only window into the activities of APPs in the field. Such surveys are inherently limited in their ability to describe national trends over time. Changing roles of APPs have been studied in other specialties,[6-8] using practice-level data to describe their APP workforce trends, as all fields of medicine try to understand the market-driven evolution of their care patterns. Against this backdrop, we sought to characterize trends in the role of APPs performing urologic procedures. Such data

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may serve to better inform practicing urologists as to added skill sets gained by partnering with APPs. More importantly, it may highlight the need for collaborative multidisciplinary educational opportunities to systematically train these providers, in contrast to the current paradigm of "on-the-job" training from their supervising urologist.

MATERIALS AND METHODS

To identify trends in key procedures of interest, as well as determine representative workforce trends, an extensive list of commonly performed urologic procedures previously identified as being performed by APPs was compiled.[5] These were linked to then-current Current Procedural Terminology (CPT) codes dating back over 2 decades (Supplementary Table S1). We then acquired annual Medicare Physician Supplier Procedure Summary (PSPS) Master Files from 1994 through 2013 from the Centers for Medicare and Medicaid Services. National Medicare claims-tracking methodology was based on that previously described for similar investigations.[6-8] PSPS Master Files aggregate Part B Medicare billing claims submitted by physicians, APPs, and all other providers nationally. Data fields include codes for procedure and provider specialty, and they include the number of procedures for which claims were submitted and paid. These data were retrospectively compiled and aggregated by the Centers for Medicare and Medicaid Services in designated public use files that contain no individual patient or physician identifiers or diagnosis information. The use of aggregated Medicare claims data from federally designated public use files was previously granted exempt status from the institutional review board of the American College of Radiology.

PSPS Master Files include all claims for all beneficiaries in the traditional Medicare fee-for-service program, which currently represents approximately 71% of all Medicare medical insurance enrollees.[9] Although Medicare enrollment increased over the past 2 decades, that growth has largely involved private Medicare-managed care programs; thus, Part B enrollment has remained relatively stable (32.3 and 33.0 million in 1994 and 2013, respectively).

Health-care providers are identified within PSPS Master Files with self-reported specialty and profession codes. For the purposes of this study, services by those with specialty codes for NPs and PAs were grouped into an APP category. Services designated with codes for urology were grouped together, and all other specialty designations were grouped into an "other provider" category. Trends were analyzed and reported. Data analyses were performed with SAS version 9.1 (SAS Institute, Cary, NC) and Excel 2010 (Microsoft, Redmond, WA).

RESULTS

A total of 51 CPT codes were queried. Services associated with all codes showed a dramatic increase in billing by APPs over the 1994-2013 period. This was accompanied, in most cases, by a steady but less substantial rise in the number of procedures performed by physicians in the Medicare fee-for-service population. Codes that showed substantial activity, or were of particular interest, were grouped by procedure complexity, skill set, and technical experience required.

High-Complexity Procedures

Cystoscopy procedures, for both diagnostic purposes and for stent removal, showed significantly increased annual frequency from 25 to 2635, an increase of 10,440% (Fig. 1). Claims by urologists over that same time increased 21%, from 802,279 to 967,238. However, with 1.02 million cystoscopies performed in 2013, inclusive of all providers, APPs performed only 0.26% of all cystoscopy procedures in this population.

Transrectal biopsy performed by APPs increased from 17 to 834 annually over the study period, representing an increase of 4860%. (Fig. 1) Urologist-performed procedures decreased 51% over the same period, although overall services rendered by urologists increased from 96% to 98%, with APP performed procedures accounting for 0.57%.

Urgent Interventions

Urgent interventions are procedures commonly performed in emergency department or inpatient settings. Complex Foley catheter placement, a CPT code assigned in 2003, shows a nearly linear increase in APP billing from 471 annually to 2929. This is an increase of 522% for APPs and represents 5.28% of all complex catheter placements (Fig. 2).

Genital abscess drainage by APPs increased annually from 1 to 946, an increase of 94,500% representing 9.2% of all procedures performed in 2013. Pharmacologic injection of the corpus cavernosum, which would include using the intervention for priapism treatment, increased from 17 to 781, an increase of 4494% representing 4.5% of all procedures (Fig. 2).

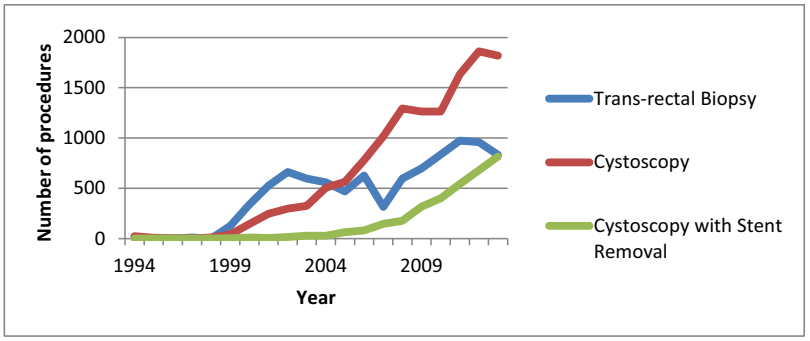

Figure 1. High complexity procedures. (Color version available online.)