

indicating that for specialty care like urology there are similar differences in telemedicine utilization.

These findings are also unique in identifying that patient who were older than 60 were less likely to utilize telemedicine compared to younger patients. Nearly two thirds of the urologic population is older than 65 years old. This cohort of patients is also considered to be amongst the highest risk population during the COVID-19 pandemic. Boehm et al interviewed 399 urologic patients in March 2020 and found that patients 76 or older had a negative view of telemedicine.⁴ Narasimha et al reviewed articles focused on telemedicine in geriatric patients and suggested there is limited research in this cohort of patients when designing telemedicine systems. Secondly the utility of telemedicine technology in an increasingly older population of patients and its impact on cognition and behavior is largely unknown.⁷ Our study indicates that there are age related differences in telemedicine usage. This may stem from patient comfort with the use of technology or preference for an in-person visit. Further efforts are needed to address age related disparities in the usage of telemedicine. These can include patient education sessions on telemedicine usage or tablet loan programs.⁸

We identified that Medicaid was independently associated with a lower usage of telemedicine. While this finding might be expected, it highlights that integration of telemedicine usage into routine practice needs to be further evaluated to not disadvantage this patient population. Prior to the pandemic, Medicaid beneficiaries were severely limited in their utilization of telemedicine and there were substantial regulatory barriers that were waived due to the pandemic.⁹ Ray et al evaluated 42,695 pediatric Medicaid beneficiaries in 2014 and demonstrated that telemedicine was used in 146 (0.3%) of visits. Our findings indicate that telemedicine may provide a means of reaching this at-risk population but that focused efforts on identifying patient related barriers are critical to future success.

Lastly, we identified that there was nearly equal uptake of telemedicine by all providers. We did not notice any difference in telemedicine utilization when stratifying physicians by their age, sex, or training (physician or advanced practice provider). Thus, our study indicates that telemedicine can be successfully integrated into physician practice on a routine basis.

Our study has limitations; firstly, our cohort consists of largely older patients. However, we include a robust distribution of patients across all age spectrums and this cohort is most reflective of urologic practices. Secondly, we could not account for unmeasurable inherent provider bias, which may impact the utilization of telemedicine. Third, we identified that infertility related visits were more likely to be conducted via telemedicine, however our practice employs 2 infertility providers and thus it remains unclear if this truly a trend in utilization of telemedicine or bias. Fourth, due to limitations of the database we could not reliably differentiate new patients from follow up patients. Lastly, we could not assess the quality of the visits or visit length, and further analysis of this is needed.

CONCLUSIONS

In conclusion, our results underscore that telemedicine can be successfully integrated into urologic practices but there are disparities in utilization based on patient age, race/ethnicity, and insurance status. Urologic community vigilance is necessary to promote equal access to telemedicine modalities as this technology will continue to be an integral role in future practice.

SUPPLEMENTARY MATERIALS

Supplementary material associated with this article can be found in the online version at <https://doi.org/10.1016/j.urology.2021.11.037>.

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EDITORIAL COMMENT

As Williams and Talwar comment, policy surrounding telemedicine is forthcoming and needed. During the initial emergence of COVID-19 the Center for Medicare and Medicaid Services (CMS) temporarily expanded insurance coverage to include telemedicine.¹ Similarly, most private insurances followed the



Financial Disclosure: The authors declare that they have no relevant financial interests.

Competing interests: The authors have no conflicts to disclose.

path of CMS and expanded their coverage as well. CMS is finalizing their policy to extend telemedicine coverage into 2023 as many private insurances are doing the same.¹ While coverage is being extended, it remains unclear if this coverage will be permanent, and whether or not telemedicine will continue to offer fair and equitable reimbursements for services.² It is clear from our study that telemedicine can be effectively rolled out in a clinical setting and reach a broad population of patients, and while disparities exist, this should not deter providers from implementing telemedicine into their practice. While most of existing literature on telemedicine has focused on access and satisfaction, further study is needed into outcomes in urology. If future data can support that outcomes are equivalent to in-person visits, then this would further support legislative efforts to maintain telemedicine as a permanent fixture of the urologic care delivery pathway and reach at-risk patients.

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<https://doi.org/10.1016/j.urology.2021.11.038>
UROLOGY 163: 79–80, 2022. © 2021 Published by Elsevier Inc.

AUTHOR REPLY

Although the COVID-19 pandemic accelerated the implementation of telemedicine, it is likely here to stay even beyond the pandemic, given its ability to improve access to care by reducing logistic barriers for patients like transportation, time taken off from work, and access for rural populations.¹ The rapid adoption of telemedicine resulted in a 12% increase in telemedicine usage among practicing urologists.² Wider use of telemedicine has potential to ameliorate the worsening workforce shortages in underserved areas that do not have practicing urologists.



Despite benefits of telehealth expansion, patients who are older, non-English speaking, and Asian, are less likely to complete outpatient telemedicine visits; patients who are older, female, Black, Latinx, and with lower socioeconomic status are less likely to utilize video visits vs telephone visits.^{3,4} In this study, Javier-DesLoges et al describe a single center's experience utilizing telemedicine for urology visits. The authors identified that patients who were Hispanic, older than age 55 years, and insured through Medicaid were less likely to utilize telemedicine vs in-person visits, and patients being evaluated for infertility were more likely to utilize telehealth visits.

Identifying and reporting these disparities within urology is commendable during this early stage of fully integrating telemedicine into the health care system. More permanent policy from the Center for Medicare & Medicaid Services for regulation and reimbursement of telemedicine is forthcoming. Consequently, interventions to bridge these emerging disparities should accompany continued integration. This may include technical support for patient unfamiliar with video platforms, social services connecting patients with local free and low-cost internet services, and fully integrated, virtual translation services for non-English speaking patients. We must ensure equitable access to this technology early on in order to avoid deepening inequalities in health outcomes among already-vulnerable patient populations.

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UROLOGY 163: 80, 2022. © 2021 Published by Elsevier Inc.

Financial Disclosure: The authors declare that they have no relevant financial interests.