EDITORIAL

"Send me a picture of your urine": Telemedicine in Urology

The recent pandemic has greatly increased interest in telemedicine. Consider the patient with "bloody urine", a common phone call in urology practices and a frequent complaint in the post-op patient. I have taken advantage of cell phone technology to evaluate this situation remotely. Beyond the history and related symptoms, visualizing the urine sample on a remote telehealth video platform can help reassure the patient or direct them to the nearest ER.

This "new" telehealth concept of providing remote health care consultation in the home-based setting has a surprisingly long history.[1] In 1879 an article in the medical journal *Lancet* discussed using the telephone to reduce unnecessary doctor office visits. In 1925, a cover of *Science and Invention* magazine provided a futuristic view of a doctor diagnosing a patient remotely by radio and performing a video physical exam. This early concept of "home monitoring" developed more fully in the Mercury space program with NASA performing physiologic monitoring over a distance. NASA further developed this technology in a pilot with the Papago Indians of the South West US. Early closed-circuit TV psychiatric consultations were pioneered by the Nebraska Psychology Institute in the 1960's. In the 1970s, the Kaiser Foundation partnered with Lockheed Missiles and Space Company and created a monitoring system designed to provide remote healthcare delivery into a rural location without many medical services.

Technologic advances over the last 10 years have allowed telemedicine to expand further. Telemedicine uptake was relatively slow before the COVID-19 pandemic due to issues such as technology costs, unclear reimbursement policies and interstate licensing issues. Progress accelerated when Medicare announced in March of 2020 that providers would receive the same rates for telemedicine as in-person visits during the pandemic. Many states also responded to the crisis by temporarily suspending the in-state licensing requirements and private carriers made accommodations for reimbursement of remote visits. For the growth of telehealth long term, these temporary pandemic initiatives must be permanently addressed.

In a 2018 AMA survey, radiologists, psychiatrists and cardiologists had the highest use of telemedicine for patient interactions, and those numbers are likely to significantly change.[2] At the start of the COVID-19 public health emergency, with stay-at-home orders in place and warnings on the risk for severe illness from COVID-19 increasing with age, Medicare in-person visits for primary care fell precipitously in mid-March. By April 2020, nearly half (43.5%) of Medicare primary care visits were provided through telehealth compared with less than one percent (0.1%) in February.[3] Telehealth has even extended to dentistry where the American Dental Association has encouraged dentists to use virtual screening to determine the nature of patient dental emergencies to minimize exposure to the COVID-19 virus by unnecessary visits.

Telemedicine visits have also been referred to as "Virtual Clinics" in specialties such as urology. Our Sidney Kimmel Cancer Center Multidisciplinary GU Oncology clinic has been in continuous operation since 1996. With this program all oncology specialists are usually on site to evaluate newly diagnosed cancer patients. Our Multidisciplinary GU clinics have been almost exclusively virtual since the start of the pandemic. At Jefferson Health we are fortunate to have visionary leaders who developed robust telehealth platforms over the last five years. We have reported on our early urology telemedicine experience (2015-2016) noting that video visits can be used across a wide variety of diagnoses with high patient satisfaction regardless of distance from a facility. Patient satisfaction with their Urologist was high but their satisfaction with using a telemedicine platform was more variable.[4] Our Jefferson

Urology practice would usually average 40-70 telehealth calls a month. Due to our existing infrastructure and in response to the pandemic, we were able to rapidly and efficiently increase our telehealth visits to 204 in March and up to 540 visits in April of this year.

One area that is a natural fit in the area of telemedicine in urology is "telegenetics". Three genitourinary cancers have a known inherited basis: kidney, upper tract urothelial cancer (Lynch syndrome) and prostate cancer, one of the most heritable cancers. In addition to many medical centers providing remote genetic counselling, such as Jefferson's Sidney Kimmel Cancer Center, many commercial laboratory providers of genetic testing also offer various levels of telegenetic counselling for patients identified with inherited mutations.

While the telehealth benefits of patient safety are obvious during the pandemic, patient convenience, reduced cost of travel, the ease of providing care to mobility challenged or elderly patients and reducing disparities to underserved populations are also recognized benefits. In addition to the items noted above, challenges going forward include lack of data on long term clinical outcomes, security concerns, the inability of many patients to embrace the necessary technology and the concern that practices such as Urology may experience financial challenges. These challenges may become more apparent with time as appropriate and routine billable ancillary services in the office setting cannot be provided using the telemedicine model. Both the American Urological Association (AUA) and the American Association of Clinical Urologists (AACU) are being proactive in addressing telehealth issues in our specialty with various legislative bodies and insurance providers.

The modern practice of telemedicine is heavily reliant on advanced technology. Taking a picture of a urine sample on a cell phone is an easy urology telehealth maneuver. The virtual uroflow using a cell phone app is in development with other colleagues testing tele-cystoscopy applications for rural locations. While the importance of the digital rectal exam is often debated outside of the field of Urology, it is essential to the care of many of our male patients. The concept of performing a virtual rectal exam is a more challenging futuristic technology. This remote physical exam application may be one to reconsider as we expand the role of telemedicine in Urology.

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