

# The Current State of Telemedicine in Urology

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## KEYWORDS

- Telemedicine • Telehealth • Tele-mentoring • Tele-surgery • Tele-rounding
- Tele-imaging • Urology

## KEY POINTS

- Telemedicine services can be implemented through a multitude of modalities, including videoconferencing software, mobile applications, and wearable devices and monitors.
- Telemedicine improves access to health care while maintaining physician and patient satisfaction.
- Many formats of telemedicine are readily reproducible and relevant to surgical and nonsurgical practices alike, including video visits, online services, electronic consults, and tele-rounding.
- Telemedicine is covered by Medicaid in almost all states.
- Barriers currently exist for Medicare reimbursement; however, this is an evolving process.

## INTRODUCTION

In an era of medicine when there is pressure to do more with less, telemedicine becomes relevant to nearly all medical specialties. Urology has been innovative with this field. The authors review herein how this is relevant and applicable to internal medicine practices.

Both the increasing cost of health care and the shortage of physicians across multiple specialties have required the development of efficient, accessible, and cost-effective health care delivery models.<sup>1</sup> One initiative has been the implementation of remote medical care, known as telemedicine.

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Telemedicine is the interactive exchange of health care information electronically between patients, providers, and consultants for the purpose of education, evaluation, decision-making, and treatment. These interactions can be implemented through a multitude of modalities, including videoconferencing software, mobile applications, and wearable devices and monitors; they can exist as synchronous or asynchronous encounters.

Preliminary data suggest that telemedicine has the potential to reduce costs and travel time for patients, improve patient satisfaction, and facilitate quality care for complex patients.<sup>2</sup> Innovative urologists have been adopting telemedicine successfully, with academic pilots leading to standard operating procedures in the Veterans Affairs (VA) system, for example.<sup>3,4</sup>

In this article, the authors discuss the current role of telemedicine in urology. Key topics, including logistics of telemedical implementation, different telemedical modalities, regulatory and reimbursement aspects of telemedicine, and limitations, are addressed.

### **CURRENT USE OF TELEMEDICINE**

Telemedical applications are being applied to a host of acute and chronic conditions across a wide array of specialties. For example, psychiatrists have been using telemedicine in the emergency department,<sup>5</sup> intensivists are using telemedical platforms to manage complex intensive care unit patients from afar,<sup>6</sup> and pediatric surgeons are expanding their accessibility to rural hospitals<sup>7</sup> and institutions that lack pediatric surgical expertise. In the outpatient setting, the virtual consultation is being used more frequently by dermatologists,<sup>8</sup> orthopedists,<sup>9</sup> general surgeons,<sup>10</sup> and ophthalmologists.<sup>11</sup> Moreover, telemedical visits are being hosted in a wide range of settings, including satellite clinics,<sup>12</sup> retail minute clinics,<sup>13</sup> and elementary schools.<sup>14</sup>

In urology, pediatric urologists were among the pioneering groups to begin implementing telemedicine into daily practice.<sup>15–17</sup> Now, academic and private practice groups have found numerous roles for telemedicine and are now providing hospital consultation as well as postoperative follow-up care through telemedical interfaces. Routine urology office visits are being conducted from patients' homes or workplaces; hospital rounds are taking place via a robot or ipad, saving the physician time traveling between hospitals while maintaining high patient satisfaction and increasing the opportunity for a multidisciplinary team approach.

As telemedicine has evolved, systems and procedures have been established making it easier for practices of all types to incorporate this technology.

### **NECESSARY SYSTEMS AND PROCEDURES**

In general, telemedicine involves live, real-time applications (ie, synchronous telemedicine) or store and forward applications (ie, asynchronous telemedicine). In urologic practice, an example of an asynchronous application would be a recorded cystoscopy video that is stored and viewed at a later date, whereas a synchronous application may involve a real-time interview with patients in a remote location. Asynchronous applications are often less difficult to implement, as technology requirements increase with real-time interactions. It is best to select the least cumbersome application that will fulfill the goals of practice.

In addition to considering the types of telemedical visits that will be offered, a practice must also consider the diagnoses and indications for which the technology will be used. For example, at the VA urology clinic in Los Angeles, California, any new

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