

# Role of Telehealth in Pre-anesthetic Evaluations

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*Before an elective surgical procedure, patients are required to have a pre-anesthetic evaluation (PAE) with the primary objective of assessing medical readiness. Telehealth, the delivery of healthcare and medical information using video conferencing technology, has become an attractive option for the PAE. Telehealth may help to facilitate safe patient care while reducing inconvenience and cost. A systematic review of the literature was conducted using PubMed, The Cochrane Library, online medical data, ancestry approach, and Google Scholar. A literature search revealed 115 potential sources, with 1 randomized controlled trial, 2 retro-*

*spective studies, 3 surveys, and 1 case report meeting the inclusion criteria. The evidence overall suggests that the PAE using telehealth technology is as reliable as those conducted by in-person methods and has distinct advantages in remote and rural areas, where access to healthcare can be difficult. Study findings have also confirmed that the PAE using telehealth has high patient satisfaction rates and the potential benefit of saving time and cost compared with in-person evaluations.*

**Keywords:** Anesthesia, pre-anesthesia interview, surgery, telehealth, telemedicine.

**T**elehealth is defined as the delivery of healthcare and the sharing of medical information as it pertains to the diagnosis and treatment of disease communicated over a distance using video conferencing technology.<sup>1,2</sup> Telehealth is an attractive option for people in remote locations where access to healthcare and specialists may be limited. Telehealth may also help those with impaired mobility and transportation challenges. Using telehealth, healthcare providers can virtually follow-up with their patients regarding health-related issues with the use of devices such as computer webcams, handheld devices, and smartphones. Video conferencing technology allows for peripheral devices to be attached to a computer in which an interactive examination can be performed.<sup>1,2</sup> An attractive option for many patients looking for medical expertise, convenience, and cost savings, telehealth is quickly becoming an integral part of healthcare.<sup>3</sup> In the past, healthcare providers routinely made house calls. Over the years, house calls have become impractical, but now with current advances in digital technology and webcams, house calls are becoming a part of the future.

Today, the successful utilization of telehealth includes remote interpretation of radiologic studies, electrocardiograms (ECGs), patient examination, and even performing robotic surgery.<sup>4</sup> However, there is little information describing telehealth's use in the form of the pre-anesthetic interview and evaluation. The pre-anesthetic evaluation (PAE) is performed before elective surgical procedures and includes an airway evaluation, review of the patients' medical records, laboratory data, and any tests carried out (eg, stress test or ECG). The objective of the PAE is to assess medical readiness, discover disease processes, and help formulate patient-specific plans which may affect

perioperative care.<sup>5</sup> For this review, we examined the evidence evaluating the effectiveness of using telehealth when performing the PAE.

## Materials and Methods

• **The PICO Question.** "PICO" is a mnemonic for the 4 critical aspects of a well-formulated, evidence-based practice question. PICO stands for patient or population, intervention, comparison, outcome.<sup>6</sup> In evidence-based practice, the PICO format is used to guide the literature search in developing a well-formulated question that addresses a patient problem.<sup>7</sup> The PICO question guiding this evidence-based review was as follows: For surgical patients (population), can telehealth (intervention) be used effectively to perform or supplement the PAE to decrease surgical risk and cancellations (outcome)? The comparator of face-to-face PAE is implied for this PICO question.

The population was preoperative patients requiring a PAE before surgery who may be unable to attend a traditional appointment. The intervention was the use of telehealth at an outlying, nonhospital setting to conduct a PAE that will supplement the interview on the actual day of surgery. The outcome was determined to be successful if further testing is required before the surgical day that may have resulted in a cancellation if the preevaluation was not performed ahead of time.

• **Search Strategy.** A computerized literature search (1974-2016) was conducted using the following online sources and search engines: PubMed, The Cochrane Library, Cumulative Index to Nursing & Allied Health (CINAHL), online medical data, ancestry approach, and Google Scholar. Reference lists of located sources and PubMed's "Related Articles" link were also examined for further evidence. Sources were limited to English-

language systematic reviews with or without meta-analysis, randomized controlled studies (RCTs), observational studies, case series, and case reports published in peer-reviewed journals or on government or professional association websites.

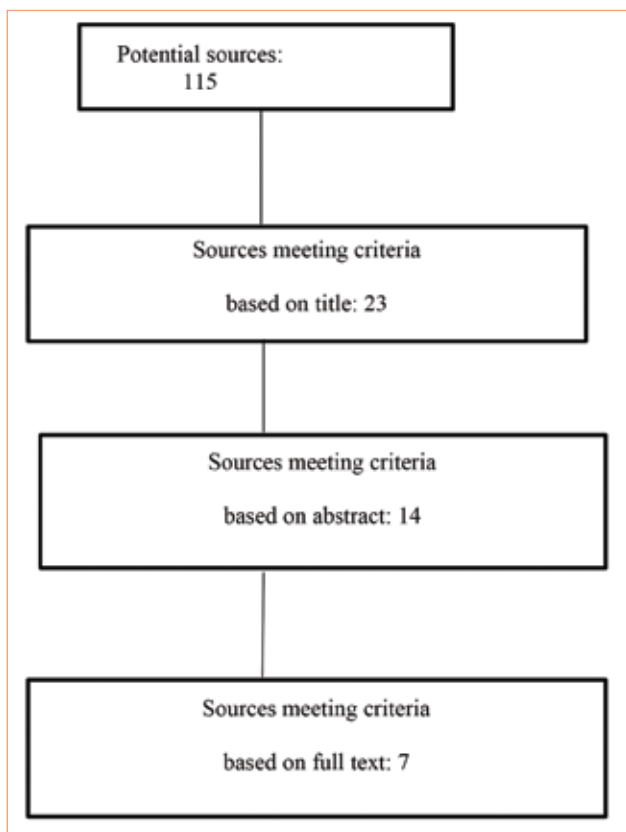
The following search terms were used alone and in combination: *telehealth, telemedicine, anes\**, *anesthesia, surgery, and preanesthesia interview*. First, the title was examined for inclusion criteria followed by the abstract and then the full text of the source. Records for the number of sources found using each search engine meeting the inclusion criteria for each term and combination of terms were maintained during the search. The evidence was then critically appraised and assessed by level per the method described by Melnyk and Fineout-Overholt.<sup>8</sup> For example, systematic reviews were assessed for the presence of a search strategy and appraisal method, and studies were also examined for quality, including the presence of randomization and blinding.

### Critical Appraisal of the Literature

A total of 115 potential evidence sources were identified, with 7<sup>5,9-14</sup> meeting the inclusion criteria (Figure, Table). Sources reporting the use of telehealth with robotic-assisted airway management, remote anesthesia provider consultation during surgery, and those dealing with chronic pain management were excluded. Three of the sources were surveys (2 pilot studies,<sup>10,11</sup> 1 correspondence<sup>13</sup>), 2 were retrospective studies,<sup>9,14</sup> 1 was a case report,<sup>12</sup> and 1 was a prospective randomized pilot trial.<sup>5</sup> Five of the sources were from authors in the United States<sup>5,9,11,12,14</sup> and 2 were from Canada.<sup>10,13</sup> Total subject participation in the 7 investigations was 1,407, with the sample size ranging from 1<sup>12</sup> to 777.<sup>13</sup> Subjects' average age ranged from 30.4 years<sup>9</sup> to 57.4 years.<sup>5</sup> In 1 study<sup>11</sup> the age was not mentioned. There were 458 male subjects and 82 female subjects identified in 5 studies,<sup>5,9,10,12,14</sup> and in 2 studies,<sup>11,13</sup> gender was not indicated.

The prospective RCT<sup>5</sup> compared 200 adults scheduled for head and neck surgery, of which 45 were excluded. The authors concluded that a sample size of 62 subjects was needed in each group (in-person vs telehealth) to allow detection of a 50% change in the delay and cancellation rate from the previous year ( $P = .05$ ). There were more women than men in the "in-person" group and more men than women in the "telehealth" group. There were no further significant differences. There was no subject blinding to group placement, but the anesthesiologist performing the day-of-surgery PAE was blinded.

In the study conducted by Wong et al<sup>10</sup> the degree of satisfaction with the telehealth consultation by the subjects and both the attending and consulting anesthesiologists was evaluated. A 5-point Likert scale was used to gather these data from the first 10 consecutive cases completed at a telehealth center in the greater Toronto area in



**Figure.** Flow Diagram of Literature Search Examining Telehealth and Preanesthetic Evaluation

Ontario, Canada. Zetterman et al<sup>11</sup> evaluated 41 subjects' perceptions of a virtual PAE with the use of a 15-item, 5-point Likert scale. In the study performed by Fishman et al,<sup>13</sup> a 9-item questionnaire was used to gather data investigating patient preferences regarding telemedicine's use for the preoperative anesthesia interview. There was no blinding of subjects and no mention of the method of sample size determination in any of these 3 studies.<sup>10,11,13</sup>

The 2 retrospective studies<sup>9,14</sup> and the case report<sup>12</sup> examined the use of telehealth PAE in maxillofacial and dental surgery. Authors of the first study<sup>9</sup> reviewed records of 43 inmates to evaluate the efficiency of telehealth consultations for the PAE. Wood et al<sup>14</sup> wanted to obtain a more comprehensive definition of telehealth's reliability and believed a larger sample size was needed. Therefore, data from 335 inmates for telehealth consultation were grouped together into 8 outcome categories that were summarized using frequencies and percentages to show the rate of occurrence for each outcome. The investigators believed that age was an important determinant when considering the telehealth consultation in the elderly population because older subjects may have existing comorbidities that can complicate anesthesia. To assess if age was associated with the outcome (surgery as scheduled), the researchers compared the average age across the different consult results (surgeon required

further evaluation). The authors concluded that older patients were more likely to require an in-office evaluation before a safe anesthesia plan could be established. Both retrospective studies<sup>9,14</sup> used convenience samples meeting their inclusion criteria. No method of determining sample size was mentioned. In the case report,<sup>12</sup> a subject had been evaluated for outpatient dental work, and a smartphone was used to perform an airway examination. The procedure was rescheduled for anesthesia at a nearby hospital after the anticipation of a difficult airway was suspected. There was no follow-up mentioned.

All the investigators<sup>5,10-14</sup> reported the use of telehealth in performing a remote-location PAE. Six sources<sup>5,9,11,12-14</sup> examined patient savings in cost and travel time. The reported distance from the telehealth clinic to where the participants would undergo surgery ranged from 43.2 km (27 mi)<sup>9</sup> to 120 km (75 mi),<sup>5</sup> with the average distance being 80 km (50 mi).<sup>11,13,14</sup>

Telehealth was used to evaluate and examine the airway with the use of an intraoral camera in 4 studies,<sup>5,9,10,14</sup> and a physical examination was performed with emphasis on the cardiac and respiratory systems.<sup>5,9,10,14</sup> All subjects had an airway examination and physical assessment performed by “direct” contact with the anesthesia provider through video teleconferencing equipment. The investigators<sup>5,9,10,12,14</sup> defined success as “the ability to determine a difficult airway with the use of the intraoral camera and if subjects required further testing, lab work or in-person evaluation”. Investigators of the 5 sources<sup>5,9,10,12,14</sup> were looking first at the effectiveness of telehealth to adequately predict a difficult airway; second, at the need for additional medical clearance; and third, to successfully formulate a diagnosis and treatment plan to avoid delays and cancellations on the day of surgery.

## Discussion

The findings of this critical appraisal of the literature suggest that the PAE can be carried out successfully using telehealth and that both subjects and investigators<sup>5,9-14</sup> reported satisfaction with the use of telehealth when performing the PAE. In 5 studies,<sup>5,9-11,14</sup> subjects were satisfied with their PAE performed at a telehealth site. In only 1 study<sup>13</sup> was there evidence of reluctance of subjects to undergo the PAE with telehealth. Authors of 5 studies<sup>5,9,10,12,13</sup> concluded that telehealth consultations for PAE were not only as reliable as those conducted by traditional in-person methods but also provided the pertinent information needed to develop a safe anesthesia plan. It was also indicated that patients have a positive perception of the virtual PAE, are more accepting of this technology, and prefer it to a face-to-face evaluation.<sup>5,9,10,12,13</sup> Furthermore, the studies confirmed that preoperative telehealth assessments are accurate, efficient, and can be successfully performed.<sup>5,9,10,12,13</sup>

• *Findings of Randomized Clinical Trial.* The RCT<sup>5</sup> was

the highest-level evidence source located for this review. One hundred sixty subjects were randomized after 40 subjects met the criteria for telephone screening and were eliminated from the study. Five subjects had their surgery canceled and were excluded from analysis after randomization because of subject refusal, surgeon availability, or insurance issues. Fifty-nine percent of the in-person and 34% of the telehealth subjects required further testing, and an incomplete PAE caused 1 surgery to be delayed in the telehealth group. Medical optimization was otherwise adequate, with no further day-of-surgery delays or cancellations. Telemedicine equipment installed at the preanesthesia clinic contained video conferencing software that was mounted on a wireless mobile cart. This software included a high-definition, pan-tilt-zoom general examination camera capable of real-time 2-way video and audio communication. This “telemedicine cart” also included an electronic stethoscope that was coupled with a high-quality headset to ensure audibility of the heart and lung sounds, which require a lower frequency to hear than a standard headset can produce. With the use of the intraoral general examination camera, 4 (40%) of 10 subjects in the in-person group were identified as having a difficult airway compared with 3 (20%) of 15 in the telehealth group; airway difficulty was predicted and found with no significant intergroup difference ( $P = .54$ ). The evaluating staff anesthesiologist found the heart and lung examination results to be consistent with documented findings by the PAE staff.

Satisfaction with the ability to hear heart and lung sounds was higher for those in the in-person group compared with the telehealth group. Satisfaction questionnaires were sent out and returned by 78.1% of subjects, with analysis revealing high satisfaction scores with the preanesthesia consultation, regardless of the group. However, the in-person group reported higher satisfaction scores with preoperative instructions ( $P = .02$ ). Fourteen respondents from the in-person group and 20 from the telehealth group reported living more than 80 km (50 mi) from the clinic (25.9% vs 30%,  $P = .47$ ), and 31 in-person participants compared with 34 telehealth participants lived at least 40 km (25 mi) from the clinic (60.1% vs 44%,  $P = .63$ ). Seventy-three percent of the subjects in the study group were of working age ( $\leq 65$  years old). The elimination of time off from work for an in-person PAE could provide an important benefit to the patients and their families, including fewer appointments and travel time.

• *Findings of Surveys.* The investigators<sup>13</sup> examined patient’s preferences regarding the use of telehealth for the PAE as well as cost to attend the preanesthesia clinic. The motivation behind this study was that many of their preanesthesia clinic patients were classified as ASA physical status 1 or 2 and often reported both a loss of time from work and the financial impact it made to attend the

Source and level of evidence (LOE) <sup>a</sup>	N	Type of device and personnel	Primary outcome measure	Secondary outcome measures	Comments
Rollert et al, <sup>9</sup> 1999 LOE: V	43	Intraoral camera, camera to view radiographs, electronic stethoscope  Surgical technician or RN at TH site, interview conducted by third-year surgery resident at CS	Efficiency of TH consultation for use in PAE	Increased access for inmates to healthcare, safety for officers, and reducing healthcare cost Satisfaction of subjects with TH	<ul style="list-style-type: none"> <li>• 39 M subjects, 3 F</li> <li>• 2 subjects were ASA physical status 3 requiring further evaluation</li> <li>• Average age: 30.4 years</li> <li>• 33 subjects underwent general anesthesia as scheduled; no surgeries were canceled or delayed</li> <li>• Subjects were inmates: 5 were paroled, 3 refused transport to TH site</li> <li>• TH site 43.2 km (27 mi) from surgical clinic</li> <li>• 100% of subjects were adequately assessed</li> <li>• 2 M subjects, 8 F</li> <li>• 4 subjects were ASA physical status 2; 6 were ASA status 3</li> <li>• In Canada, many populations live in remote regions away from tertiary care center and outside the greater Toronto area</li> <li>• 1 subject required further testing, 1 postponed for abnormal cardiac perfusion scan; no report of missing information</li> <li>• Gender of subjects not reported</li> <li>• 1 subject required further medical evaluation; no surgeries canceled or delayed because of insufficient PAE</li> <li>• TH site 80 km (50 mi) from surgical clinic</li> <li>• Telehealth has potential to improve access to underserved populations, especially in rural areas</li> </ul>
Wong et al, <sup>10</sup> 2004 LOE: VI	10	Intraoral camera, electronic stethoscope Anesthesiologist at TH site, RN at TH site	Accessibility to healthcare, reduce travel time and cost with use of TH to perform PAE	Satisfaction of subjects and providers with TH	<ul style="list-style-type: none"> <li>• Satisfactions of subjects and providers with TH</li> <li>• Gender of subjects not reported</li> <li>• 1 subject required further medical evaluation; no surgeries canceled or delayed because of insufficient PAE</li> <li>• TH site 80 km (50 mi) from surgical clinic</li> <li>• Telehealth has potential to improve access to underserved populations, especially in rural areas</li> </ul>
Zetterman et al, <sup>11</sup> 2011 LOE: VI	41	VTC link Consultation by an anesthesia research fellow	Timely, evidence-based care in a cost-effective format, saving time and money using telehealth to perform PAE	Satisfaction of subjects and providers with TH	<ul style="list-style-type: none"> <li>• Satisfactions of subjects and providers with TH</li> <li>• Gender of subjects not reported</li> <li>• 1 subject required further medical evaluation; no surgeries canceled or delayed because of insufficient PAE</li> <li>• TH site 80 km (50 mi) from surgical clinic</li> <li>• Telehealth has potential to improve access to underserved populations, especially in rural areas</li> </ul>
Appelgate et al, <sup>5</sup> 2013 LOE: II	200	General examination camera, electronic stethoscope Screening PAE performed by a nurse practitioner or a first- or second-year anesthesiology resident	Identification of inadequate PAE related to missing documentation, testing, consultation or physical examination findings to prevent DOS delays	Prediction of difficult airway	<ul style="list-style-type: none"> <li>• In-person: 32 M, 45 F; TH: 53 M, 25 F</li> <li>• In-person: ASA physical status (1-4) 2: n = 32, status 3: n = 40; TH: ASA status (1-4) 5:39:33:1</li> <li>• Mean age, years: in-person: 57.4, TH: 52.9</li> <li>• Airway difficulty predicted: in-person: 11, TH: 10; difficulty found: in-person: 10, TH: 15</li> <li>• 155 randomized subjects (45 excluded because of phone interview, subject refusal, surgeon availability, or insurance issues); ITT principle not followed</li> <li>• Incomplete PAE delay in 1 TH subject</li> <li>• Distance to PAE site: <math>\geq</math> 40 km (<math>\geq</math> 25 mi) in-person: n= 31, TH: n = 34; <math>\geq</math> 80 km (<math>\geq</math> 50 mi) in-person: n = 14, TH: n = 20</li> <li>• Overall, PAE and medical optimization were adequate; no other delays or cancellations on DOS</li> </ul>

Dilisio et al, <sup>12</sup> 2014 LOE: VI	1	Personal smartphone, tablet, or computer with a camera and Internet connection if TH equipment was not available Interview performed by consulting anesthesiologist	Evaluation of TH in replacing face-to-face PAE in rural communities with limited access to healthcare	Difficult airway prediction with personal smartphone	<ul style="list-style-type: none"> <li>• 1 M subject</li> <li>• History of OSA and anticipated difficult airway</li> <li>• Subject switched dentists; no follow-up on difficult airway prediction</li> <li>• With use of subject's personal smartphone, a difficult airway was determined, and procedure was rescheduled in advance, thereby avoiding costly delays and patient dissatisfaction</li> <li>• Many PAE subjects are ASA physical status 1 or 2 and often report financial and time loss to attend PAE appointment</li> <li>• Average age: 54.9 years</li> <li>• Reluctance to undergo PAE using TH; no association between measurable variables and willingness to teleconference at the a priori level of significance</li> <li>• 331 M, 4 F</li> <li>• Average age: 32.5 years</li> <li>• US Department of HHS estimates 24% of Americans live in areas with limited access to healthcare services</li> <li>• Average distance to TH site was 80 km (50 mi)</li> <li>• 271 subjects were TM adequate, 3 required further evaluation, and 61 were excluded because of equipment malfunction (n = 21) or subject no-show (n = 40)</li> </ul>
Fishman et al, <sup>13</sup> 2015 LOE: VI	777	VTC link Study did not identify who did the PAE	Investigate patient preferences regarding TH for PAE	Avoid financial and time loss to attend PAE appointment	
Wood et al, <sup>14</sup> 2016 LOE: VI	335	Intraoral camera, radiographic examination, electronic stethoscope An anesthesiologist was at CS, and an RN was at TH site	Evaluate the efficiency and reliability of TH for PAE consultations	Improvement in access to healthcare and increased efficiency to lower costs of care	

**Table. Evidence Examining Outcomes of Preoperative Anesthesia Evaluation Using Telehealth**

Abbreviations: CS, consultation site; DOS, day of surgery; HHS, Health and Human Services; ITT, intention-to-treat; OSA, obstructive sleep apnea; PAE, preanesthetic evaluation; RN, registered nurse; VTC, video teleconferencing.

<sup>a</sup> Level I indicates systematic review and meta-analysis of randomized controlled trials; level II, 1 or more randomized controlled trials; level III, controlled trial (no randomization); level IV, case-control or cohort study; level V, systematic review of descriptive and qualitative studies; Level VI, single descriptive or qualitative study; level VII, expert opinion.<sup>8</sup>

preanesthesia clinic. The investigators expected to find subjects with greater travel times would be more willing to undergo their PAE with telehealth video conferencing, but the study found no significant association when it came to travel times for those willing to undergo their PAE with telehealth compared with those who were unwilling ( $P = .029$ ). In the first pilot study by Wong et al,<sup>10</sup> the degree of satisfaction was graded on a 5-point Likert scale by both the patient and anesthesiologist. The results concluded that 9 of 10 patients were highly satisfied and 1 of 10 was satisfied with the telehealth consultation. In this same study, 8 of 10 attending anesthesiologists were highly satisfied, and 2 of 10 were satisfied with the format of the telehealth consultation.

In the second pilot study,<sup>11</sup> a 15-item, 5-point Likert scale was used to assess patient's opinions of their PAE using video teleconferencing. Among the patients, 87.5% believed that the virtual PAE would save them travel time and money, 70.7% preferred the video teleconferencing evaluation, and 21.9% were undecided. The results also indicated that 9.7% of patients would rather have their PAE face-to-face, 7.3% were uncomfortable with the video teleconferencing format, and 26.8% were undecided. The authors contend that the PAE can be successfully performed using a telehealth-based format, patients had a positive experience with their virtual evaluation, and 85% believed the teleconsultation was as good as being seen at the surgery center.

• **Findings of Retrospective Studies.** Telehealth has been shown to be safe and effective for use in the PAE of inmates in the correctional system. Two studies<sup>9,14</sup> in this review involved subjects that were inmates requiring maxillofacial or dental surgery. In the first retrospective study,<sup>9</sup> investigators found 100% of subjects were correctly triaged and only 94% of these subjects evaluated required surgery. After the PAE of 43 telehealth consultations, 19 required the ordering of additional tests, including chest radiographs, ECGs, and laboratory tests. Two subjects were determined to require further evaluations after the telehealth consult before they could proceed with surgery.

In the second retrospective study,<sup>14</sup> investigators found that 92.2% of the time, data collected from the telehealth consultation were adequate to make a diagnosis and form a treatment plan. In 4 cases, the physician required further subject evaluation in the office before surgery. A total of 274 subjects were analyzed for telehealth reliability, and after exclusion of 61 subjects due to equipment failure (21) or subject no-shows (40), 6.3% of these subjects did not have a diagnosis or treatment plan. Of subjects, 99.6% were correctly triaged, with the diagnosis and treatment plan accurate 95.9% of the time. The investigators found a significant difference ( $P = .0017$ ) in average age for consult outcomes, specifically for those requiring an additional in-office consultation. The age requiring further consultation was considerably

older by an average of 16.7 years than those who had an adequate telehealth consult and could proceed with surgery (95% confidence interval, 2.7 to 30.7 vs 95% confidence interval, 0.8 to 34).

• **Findings of Case Report.** Dilisio et al<sup>12</sup> examined a patient for extensive, outpatient dental work that would be performed with office-based anesthesia. After a preliminary preoperative phone interview, the anesthesia provider requested that a headshot of the patient be sent via smartphone for further evaluation of the airway. The patient was deemed inappropriate for office-based anesthesia after review of the photo alerted the anesthesia provider to an anticipated difficult airway. The patients' procedure was rescheduled at a nearby hospital, thus avoiding a surgery cancellation for the next office day.

• **Potential Problems With Telehealth When Performing Preanesthetic Evaluation.** Problems with using telehealth for performing the PAE included the subject's misconceptions about being videotaped during the PAE and that that subject would not be speaking with a person.<sup>13</sup> Investigators also had concerns with patient privacy, third-party providers, and no actual physical contact between the physician and patient.<sup>1,10</sup> Also, the health-care provider and patient were unable to speak at the same time.<sup>1</sup> A final concern is that there would be additional costs to maintain the remote location site.<sup>12</sup>

## Conclusion

Since the early 1990s, telehealth has been widely accepted in the correctional system, with cost and safety being significant factors.<sup>9,14</sup> The PAE using telehealth not only has high patient satisfaction rates but the potential benefit of saving time and cost compared with in-person evaluations. The evidence suggested that telehealth has distinct advantages in remote and rural areas where access to healthcare can be difficult.<sup>5,9-14</sup> This review confirms that telehealth has been shown to be safe and effective for use in the PAE, but there are still challenges. Investigators<sup>12</sup> have questioned how the information would be protected under the Health Insurance Portability and Accountability Act. How these data would be incorporated into the medical records as technology continues to expand using video equipment and third-party providers is also a concern. In a study from 1999, investigators pointed out professional issues that involved telehealth licensure that needed addressing, along with professional liability and patient privacy concerns.<sup>9</sup>

The American Telemedicine Association Accreditation Program has recently addressed these issues by establishing criteria regarding the security of patient information, developing standards and guidelines for clinical practice, and addressing qualifications for licensing providers.<sup>14</sup> In April 2017, the Federation of State Medical Boards, along with the Interstate Medical Licensure Compact, announced that applications to practice telehealth across

state lines were now available for interested health-care providers.<sup>15</sup> The Medicare program is currently working to promote cost-effectiveness and high-quality care in remote patient monitoring using telehealth. Furthermore, the Senate Finance Committee released a proposal in 2016 for healthcare providers to receive Medicare payments for telehealth services.<sup>16</sup>

Technology and telehealth are catching up with each other.<sup>17</sup> Advancements in electronic communications with faster Internet connections, smartphones, tablets, and other electronic devices have made video conferencing with one's healthcare provider more convenient. Telehealth is becoming more economical as well.<sup>4,5,9,11-14</sup> Telehealth is built on the mission of delivering high-quality care and includes providing healthcare services in a timely, effective, and cost-efficient way.<sup>17</sup> Telehealth will take on a prominent role in healthcare as we continue into the age of digital technology, and as investigators have pointed out, "it is vital to remain on the cutting edge of this new technology to achieve the success and advancement of the specialty of teleanesthesiology".<sup>12</sup>

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## DISCLOSURES

The authors have declared no financial relationships with any commercial entity related to the content of this article. The authors did not discuss off-label use within the article.