Policy Recommendations to Guide the Use of Telemedicine in Primary Care Settings: An American College of Physicians Position Paper

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Telemedicine—the use of technology to deliver care at a distance—is rapidly growing and can potentially expand access for patients, enhance patient–physician collaboration, improve health outcomes, and reduce medical costs. However, the potential benefits of telemedicine must be measured against the risks and challenges associated with its use, including the absence of the physical examination, variation in state practice and licensing regulations, and issues surrounding the establishment of the patient–physician relationship. This paper offers policy recommendations for the practice and use of telemedicine in primary care and reimbursement policies associated with telemedicine use. The positions put forward by the American College of Physicians highlight a meaningful approach to telemedicine policies and regulations that will have lasting positive effects for patients and physicians.

The use of telemedicine (use of technology to deliver health care services at a distance) and telehealth services (a somewhat broader definition of telemedicine that includes not just delivery of health care services at a distance but patient and health professional education, public health, and public administration [1]) has expanded rapidly to solidify a place in the modern health care conversation. The use of telemedicine technologies began mainly in rural communities and federal health programs but has since been used in various medical specialties and subspecialties across care settings. The term *telemedicine* comprises different types of technologies with different applicable functions, outlined in the **Table**.

Although telemedicine has been a component of the health care field for decades, only since the broad proliferation of computer and smartphone technology into the everyday lives of the general population has telemedicine taken a foothold in how health care may be delivered to larger groups of patients. Telemedicine holds the promise to improve access to care, improve patient satisfaction, and reduce costs to the health care system. However, various challenges and risks of telemedicine, such as variations in state and federal laws, limited reimbursement, logistic issues, and concerns about the quality and security of the care provided, should not be overlooked.

As telemedicine technologies and applications continue to develop and evolve, the American College of Physicians (ACP) has compiled pragmatic recommendations on the use of telemedicine in the primary care setting, physician considerations for those who use telemedicine in their practices, and policy recommendations on the practice and reimbursement of telemedicine. The statements represent the official policy positions and recommendations of ACP. The rationale for each is provided in the full position paper (see the **Appendix**, available at www.annals.org).

In 2008, ACP published a position paper, "E-Health and Its Impact on Medical Practice" (2), which discussed how the use of technology (including electronic health records, patient portals, and telemedicine) can augment the practice of medicine in an efficient and secure way. Since that paper's release—just 1 year after the first iPhone (Apple) was introduced—the use of technology is engrained into the everyday lives of persons across the United States and the world. The use of these technologies has been shown to increase patient satisfaction while delivering care that is similar in quality to, and in some cases is more efficient than, in-person care and support. Research shows that telemedicine can potentially reduce costs, improve health outcomes, and increase access to primary and specialty care.

METHODS

The ACP's Health and Public Policy Committee, which is charged with addressing issues affecting the health care of the U.S. public and the practice of internal medicine and its subspecialties, developed these positions and recommendations. The committee reviewed studies, reports, and surveys on all applications and uses of telemedicine, patient satisfaction with telemedicine, and quality of telemedicine in addition to the

Table. Types of Telemedicine

Type of Telemedicine	Description	Example
Asynchronous	Transmits a patient's medical information not used in real time*	The radiographs of a patient's broken wrist are sent off site to an orthopedist for evaluation as to whether the patient needs surgery
Synchronous	Real-time interactive technologies, such as 2-way interactive video	A physician sets aside 2 h each weeknight for e-visits in which patients can connect with the physician through a Webcam and be "seen" for acute health conditions from their homes A rural community with no primary care physicians connects patients at a community health center through a 2-way video with physicians at a remote location
Remote patient monitoring	A patient's health information is gathered through technological devices and sent for evaluation and stored in the patient's medical record for future use	A patient with hypertension changes medication and uses a monitoring device to measure blood pressure over the course of a week. The information is transferred to the patient's physician, who determines whether the patient needs to come to the office for follow-up
Mobile health care services	Uses mobile technology, such as smartphone applications and text messages, to manage and track health conditions or promote healthy behaviors	A primary care practice uses text messages to confirm appointments with patients

* "Store and forward."

legal landscape surrounding telemedicine, including licensing, prescribing, credentialing, and other legal requirements. Draft recommendations were reviewed by ACP's Board of Regents, Board of Governors, Council of Early Career Physicians, Council of Resident/Fellow Members, Council of Student Members, and Council of Subspecialty Societies. The position paper and recommendations were reviewed by the ACP Board of Regents.

ACP POSITION STATEMENTS AND RECOMMENDATIONS

1. ACP supports the expanded role of telemedicine as a method of health care delivery that may enhance patient–physician collaborations, improve health outcomes, increase access to care and members of a patient's health care team, and reduce medical costs when used as a component of a patient's longitudinal care.

a. ACP believes that telemedicine can be most efficient and beneficial between a patient and physician with an established, ongoing relationship.

b. ACP believes that telemedicine is a reasonable alternative for patients who lack regular access to relevant medical expertise in their geographic area.

c. ACP believes that episodic, direct-to-patient telemedicine services should be used only as an intermittent alternative to a patient's primary care physician when necessary to meet the patient's immediate acute care needs.

2. ACP believes that a valid patient–physician relationship must be established for a professionally responsible telemedicine service to take place. A telemedicine encounter itself can establish a patient–physician relationship through real-time audiovisual technology. A physician using telemedicine who has no direct previous contact or existing relationship with a patient must do the following:

a. Take appropriate steps to establish a relationship based on the standard of care required for an in-person visit, or

b. Consult with another physician who does have a relationship with the patient and oversees his or her care.

3. ACP recommends that telehealth activities address the needs of all patients without disenfranchising financially disadvantaged populations or those with low literacy or low technologic literacy. In particular, telehealth activities need to consider the following:

a. The literacy level of all materials (including written, printed, and spoken words) provided to patients or families.

b. Affordability and availability of hardware and Internet access.

c. Ease of use, which includes accessible interface design and language.

4. ACP supports the ongoing commitment of federal funds to support the broadband infrastructure needed to support telehealth activities.

5. ACP believes that physicians should use their professional judgment about whether the use of telemedicine is appropriate for a patient. Physicians should not compromise their ethical obligation to deliver clinically appropriate care for the sake of new technology adoption.

a. If an in-person physical examination or other direct face-to-face encounter is essential to privacy or maintaining the continuity of care between the patient's physician or medical home, telemedicine may not be appropriate.

6. ACP recommends that physicians ensure that their use of telemedicine is secure and compliant with federal and state security and privacy regulations.

7. ACP recommends that telemedicine be held to the same standards of practice as if the physician were seeing the patient in person.

a. ACP believes that there is a need to develop evidence-based guidelines and clinical guidance for physicians and other clinicians on appropriate use of telemedicine to improve patient outcomes.

8. ACP recommends that physicians who use telemedicine should be proactive in protecting themselves against liabilities and ensure that their medical liability coverage includes provision of telemedicine services.

9. ACP supports the ongoing commitment of federal funds to establish an evidence base on the safety, efficacy, and cost of telemedicine technologies.

10. ACP supports a streamlined process to obtaining several medical licenses that would facilitate the ability of physicians and other clinicians to provide telemedicine services across state lines while allowing states to retain individual licensing and regulatory authority.

11. ACP supports the ability of hospitals and critical access hospitals to "privilege by proxy" in accordance with the 2011 Centers for Medicare & Medicaid Services final rule allowing a hospital receiving telemedicine services (distant site) to rely on information from hospitals facilitating telemedicine services (originating site) in providing medical credentialing and privileging to medical professionals providing those services.

12. ACP supports lifting geographic site restrictions that limit reimbursement of telemedicine and telehealth services by Medicare to those that originate outside of metropolitan statistical areas or for patients who live in or receive service in health professional shortage areas.

13. ACP supports reimbursement for appropriately structured telemedicine communications, whether synchronous or asynchronous and whether solely text-based or supplemented with voice, video, or device feeds in public and private health plans, because this form of communication may be a clinically appropriate service similar to a face-to-face encounter.

SUMMARY

ACP believes that telemedicine can potentially be a beneficial and important part of the future of health care delivery. However, it is also important, especially as policymakers and stakeholders shape the landscape for telemedicine going forward, to balance the benefits of telemedicine against the risks for patients. By establishing a balanced and thoughtful framework for the practice, use, and reimbursement of telemedicine in primary care, patients, physicians, and the health care system will realize the full potential of telemedicine.

References

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APPENDIX: EXPANDED BACKGROUND AND RATIONALE

In the past 10 years, the swift adoption of computer and smartphone technology has spurred an interest in and use of telemedicine. *Telemedicine*, as defined by the Institute of Medicine, is "the use of electronic information and communications technologies to provide and support health care when distance separates participants" (3). Telemedicine is often used interchangeably with the term *telehealth*, which is more broadly defined as the use of technology in general health–related services. Telemedicine may be characterized in the public and private sectors differently, with 26 federal agencies using 7 unique definitions of telemedicine and state legislatures determining which definition of telemedicine those operating within that jurisdiction use for the purposes of practice or reimbursement (4). For the purpose of this document, telemedicine and telehealth will be used interchangeably because telemedicine is a component of telehealth activities.

Telemedicine comprises asynchronous, synchronous, remote monitoring, and mobile health care service (mHealth) technologies. Definitions and examples of these technologies are found in the **Table**. A recent survey of physicians and hospital systems showed that a 2-way video or Webcam was the most commonly used telemedicine technology (57.8%) and the type of technology in which physicians and hospitals would most likely invest (67.1%) (5). Primary care and subspecialist referral services, medical education, and consumer medical and health information are also common uses of telemedicine (6). Although this paper references the use of telemedicine for subspecialists and other medical specialists, its ability to increase access to these health professionals, or research on tele-

medicine in these specialties and subspecialties, the positions and recommendations put forward by ACP are above all intended for the use of telemedicine in primary care. Specialists and subspecialists provide integral services and work in conjunction with a patient's primary care physician to provide coordinated care for the patient. ACP recognizes that the application and principles for the use of telemedicine for specialties and subspecialties can vary depending on the situation, care setting, or standard of care.

Although still emerging, mHealth should also be considered during telemedicine policy discussions. Mobile technology use is high and continues to grow: 90% of U.S. adults have a mobile phone, 58% of whom have a smartphone (7). Although less conventionally developed or researched than other telehealth services, mHealth has positioned itself as a component of the telemedicine field. In 2013, the U.S. Food and Drug Administration issued "Mobile Medical Applications: Guidance for Industry and Food and Drug Administration Staff" (8), which explained how the agency plans to monitor mHealth applications functioning as medical devices that may pose a greater risk to consumers if they do not fully understand the capabilities or limitations of the application.

In addition to consumers, physicians, third-party payers, and major companies, federal legislators have taken an interest in the potential of telemedicine to improve the system of health care delivery. Dozens of bipartisan bills were introduced during the 113th Congress related to telemedicine and health information technology, including the Telemedicine for Medicare Act (H.R. 3077), which would allow a physician to treat Medicare beneficiaries across state lines without obtaining several medical licenses; the Telehealth Modernization Act (H.R. 3750), which would create a single federal standard for telemedicine use in national health care programs; the Telehealth Enhancement Act (H.R. 3360), which would expand the types of originating sites under Medicare and Medicaid for the purpose of telemedicine reimbursement; and the Medicare Telehealth Parity Act (H.R. 5380), which would strategically expand Medicare reimbursement for telehealth services administered in urban areas, retail health clinics, and a patient's home and identifies additional health care service professionals that can be reimbursed for providing telehealth services. These bills, or bills with similar intent, may be introduced in future Congresses. The scope of many of these bills has broad implications on the future of telemedicine use. It is critical at this junction that any federal legislation balances the benefits and risks of telemedicine on the population, the effect on federal health care programs, and the long-term use of telemedicine.

Benefits of Telemedicine

Telemedicine can be an efficient, cost-effective alternative to traditional health care delivery that increases the patient's overall quality of life and satisfaction with their health care. Data estimates on the growth of telemedicine suggest a considerable increase in use over the next decade, increasing from approximately 350 000 to 7 million by 2018 (9). Research analysis also shows that the global telemedicine market is expected to grow at an annual rate of 18.5% between 2012 and 2018 (10). A study by Lee and colleagues (11) found that by the end of 2014, an estimated 100 million e-visits across the world will result in as much as $5 billion in savings for the health care system. As many as three quarters of those visits could be from North American patients (11).

Telehealth technologies have long been developed and used by government agencies, and the Veteran's Health Administration (VHA) has piloted and instituted telehealth programs with measurable positive health outcomes. Telemedicine has been used for over a decade by Veterans Affairs; in fiscal year 2013, more than 600 000 veterans received nearly 1.8 million episodes of remote care from 150 VHA medical centers and 750 outpatient clinics (12). It has been suggested that the VHA could be a potential model for the use of telehealth in the primary care setting given the agency's success in providing home telehealth services, such as regular contact with a nurse or other members of a patient's medical team to help control chronic conditions (including diabetes, depression, or hypertension) (13). The VHA's Care Coordination/Home Telehealth program, with the purpose of coordinating care of veteran patients with chronic conditions, grew 1500% over 4 years and saw a 25% reduction in the number of bed days, a 19% reduction in numbers of hospital readmissions, and a patient mean satisfaction score of 86% (14).

The Indian Health Service has also successfully integrated telemedicine technology into its infrastructure, and tribal communities across the country and in remote or rural areas have had increasing access to primary and specialty care through telemedicine. A comparison study of patients waiting for an evaluation by an ear, nose, and throat subspecialist before and after the introduction of telemedicine in an Alaskan community saw significant decreases in the number of new patients waiting 5 months or longer for a consultation (47% before vs. 8% after) and the average wait time for an appointment (4.2 vs. 2.9 months) (15). The program used store-and-forward technology to take photographs and videos at an originating site in the community that were then sent to a distant site for evaluation by subspecialists. This allowed subspecialists to "see" the problem and triage patients accordingly, resulting in reduced wait times and higher efficiency (16).

Benefits from the use of telemedicine in subspecialties are also seen in telestroke services. The Mayo Clinic telestroke program uses a "hub-and-spoke" system that allows stroke patients to remain in their home communities, considered a "spoke" site, while a team of physicians, neurologists, and health professionals consult from a larger medical center that serves as the "hub" site (17). A study on this program found that a patient treated in a telestroke network, consisting of 1 hub hospital and 7 spoke hospitals, reduced costs by $1436 and gained 0.02 years of quality-adjusted life-years over a lifetime compared with a patient receiving care at a rural community hospital (18). A study funded by the Patient-Centered Outcomes Research Institute is enrolling patients with Parkinson disease to measure their ability to connect with neurologists through telemedicine. Research shows that although these patients do better under the treatment of a neurologist, fewer than one half of Medicare patients with the disease see a neurologist due to lack of access (19). The Patient-Centered Outcomes Research Institute study will test the feasibility of patients being treated in their homes, whether telemedicine reduces caregiver burden, and whether it improves the quality of care and overall patient satisfaction (20).

Health Outcomes

Sample studies of telemedicine used in the treatment of medical conditions and in various settings suggest that efficient use of telemedicine technologies can improve overall health outcomes. Telemedicine as a case-management tool has been shown to improve outcomes in older patients with diabetes with limited access to care (21) and in patients with other chronic conditions (22). An analysis of patient satisfaction with physicians during telemedicine encounters found little difference between encounters in the in-person or virtual setting (23).

Two large-scale telemedicine pilot programs are often referenced as examples of how telemedicine may improve health outcomes. The Antenatal and Neonatal Guidelines, Education and Learning System program at the University of Arkansas for Medical Sciences used telemedicine technologies to provide rural women with high-risk pregnancies access to physicians and subspecialists at the University of Arkansas. In addition, the program operated a call center 24 hours a day to answer questions or help coordinate care for these women and created evidence-based guidelines on common issues that arise during high-risk pregnancies. The program is widely considered to be successful and has reduced infant mortality rates in the state (24).

The Extension for Community Healthcare Outcomes program focuses on using technology to connect subspecialists at an academic medical center to

primary care physicians who are then trained on how to care for patients with hepatitis C who did not previously receive treatment in their communities. The program found similar health outcomes for the community-treated group compared with the group that was treated in person at the academic medical center (25). In an analysis of the primary care clinicians who participated in the program, 75% indicated that they had discussed what they learned through the program with colleagues, spreading information that can potentially help others in treating liver diseases (26).

Access

One of the broadest benefits of telemedicine is increased access to primary and specialty care for patients to physicians and subspecialists, physicians to potential patients, hospitals to patients, and physicians to other physicians. Telemedicine technologies can connect patients with a clinician without having to incur long travel times and associated expenses if they do not have ready access or are unwilling to travel. An analysis of cost savings during a telehealth project at the University of Arkansas for Medical Sciences between 1998 and 2002 suggested that 94% of participants would have to travel more than 70 miles for medical care (27). Elsewhere, hospitals, academic medical centers, physician offices, and clinics may be linked through mobile workstations that can connect medical professionals in each location with a large network of off-site physicians and subspecialists.

Beyond the rural setting, telemedicine may aid in facilitating care for underserved patients in both rural and urban settings. Two thirds of the patients who participated in the Extension for Community Healthcare Outcomes program were part of minority groups, suggesting that telemedicine could be beneficial in helping underserved patients connect with subspecialists they would not have had access to before, either through direct connections or training for primary care physicians in their communities, regardless of geographic location.

Cost

Treating patients at home or outside the clinical setting, when applicable and appropriate, can yield cost savings by intervening before the development of more serious conditions, reducing hospital visits or readmissions, effectively managing chronic conditions, and reducing travel costs or lost productivity. A program in New Mexico that used telemedicine to provide hospital-level care in a patient's home found savings of 19% over similar patients who were treated in the hospital setting, mostly derived from shorter length of stay in the hospital and fewer diagnostic and laboratory tests (28).

Research suggests that the most cost-effective uses of telemedicine are in radiology, home health care, psychiatry, and prisoner health care but less so in other applications due to lack of reimbursement by payers (29). An analysis of the Health Buddy Program, which used a personalized hand-held device to identify the need for care management interventions for chronically ill Medicare beneficiaries, found spending reductions between $312 and $524 per person per quarter (30). The overall cost savings associated with telemedicine may not be seen immediately, but over time. As the use of telemedicine increases, additional analysis of the cost-effectiveness or cost–benefit comparison of telemedicine against in-person visits will be needed to fully understand the scope of potential savings to the health care system.

Challenges of Telemedicine

The integration of telemedicine into the health care system is not without challenges. Most laws and regulations relating to reimbursement and the practice of medicine were drafted before the use of telemedicine by larger markets; state guidelines on the practice of telemedicine, prescribing, and licensing vary; Web sites that offer on-demand, episodic care for minor health conditions may disrupt the continuity of care between a patient and his or her physician or medical home and undermine care coordination; and some hesitation remains among physicians and patients. Legal barriers to the widespread adoption of telemedicine mainly center on medical licensure, credentialing, and privileging that would allow physicians to practice in several locations. Beyond these challenges, concerns exist about depersonalization of the patient–physician relationship, particularly in the primary care setting, and the risk for harm. The physical interaction between a physician and patient and the in-person examination are important components of a patient's care that allow a physician to gather a comprehensive understanding of the patient and his or her needs and build trust and communication.

Licensing

Current law requires physicians to be licensed in the jurisdiction in which a patient receives treatment, with some limited exceptions, and a relatively small number of physicians have more than 3 active medical licenses (6%) (31). Most proposals to change the medical licensing system fall into the categories of preemption, mutual recognition and portability, or federal licensure and regulation. State medical licensing policy and how it relates to telemedicine varies, and many states have exceptions that allow a physician to consult with a physician licensed in another state. However, consultation exemptions are not consistent, and some states do not have explicit exemptions (3). Other states

have specialty licenses allowing physicians to practice across state lines for telemedicine only, special purpose licenses, or telemedicine licenses or certificates (32). In 2014, the Federation of State Medical Boards (FSMB) finalized an interstate compact that would help expedite the licensing process for physicians in obtaining medical licenses in several states. The compact would allow physicians who meet eligibility requirements to apply for an expedited medical license in a principal state, complete necessary registration established by an Interstate Commission, and receive a license in a member state. The physician must pay associated fees required by the states and the Interstate Commission.

Variation of State Regulation

Physicians and other medical professionals who practice telemedicine also run into a patchwork of state laws. No 2 states are the same: A state-by-state evaluation of telemedicine policies found nearly 50 combinations of requirements, standards, and licensure policies (patient–physician encounter requirement, telepresenter requirement, informed consent, and licensure and out-of-state practice) (33). For example, the Georgia Composite Medical Board requires that a face-to-face encounter with a patient occur before a telehealth service is delivered, with some exceptions (34); in Ohio, a face-to-face examination is not needed to provide a telemedicine service if the physician can gather the same information through the telemedicine encounter as they would through a face-to-face visit encounter (35). State medical boards may serve as a resource for physicians or patients who are unaware of their state's statutes about telemedicine or Internet prescribing.

Reimbursement for telemedicine also varies by state. Forty-six states and the District of Columbia have some type of Medicaid reimbursement for telehealth, and 21 states and the District of Columbia require private insurers to cover telemedicine services as defined by those states (36). Medicare coverage for telemedicine is narrow and limited to certain beneficiaries, technologies, and areas. State legislatures have been active in working to advance telehealth reimbursement policies. The American Telemedicine Association reports that, as of September 2014, a total of 15 states had introduced legislation mandating private coverage of telemedicine services and 11 states had introduced legislation mandating Medicaid coverage for telehealth. Several state telemedicine boards have expressed interest in reviewing existing policies and potentially updating them to address the growing demand for telemedicine.

Direct-to-Patient Episodic Telemedicine

As the use of telemedicine has grown in the physician and patient populations, the term *telemedicine* has increasingly become synonymous with Web sites or mobile health applications that provide episodic care for low-acuity health conditions. Depending on state law, these services enable patients and physicians to interact 24 hours a day via 2-way video conferencing on a computer, smartphone, tablet, or telephone. They also allow physicians to diagnose acute conditions; prescribe drugs; offer medical advice or second opinions; and refer patients to a different physician, subspecialist, or more appropriate treatment location (such as an urgent care center or emergency department). This type of consumer-driven health care poses challenges to maintaining a patient-centered, longitudinal relationship between a patient and his or her physician.

Patient preference is increasingly driving health care delivery innovations, and episodic telemedicine is one such innovation. As employers and insurance companies see cost savings associated with these sites, they are more likely to partner with them or reimburse for their use. An e-visit typically costs approximately $40 (vs. $73 for an in-person visit), and other analyses show a greater difference in the cost of an e-visit versus in-person visit (37). Although episodic telemedicine provides on-demand, convenient care, this does not necessarily equate to long-term, high-value care. This type of telemedicine may be suitable for part of overall care, not independent care or as a long-term replacement for a primary care physician. When these types of sporadic telemedicine visits occur, the continuity of a patient's care may be disrupted and result in larger issues later on if the information from the visit is not appropriately communicated to the patient's physician or medical home and may undermine the establishment or maintenance of a patient–physician relationship.

Little research has been done on how remote-consultation Web sites or applications may affect the continuity of a patient's care, and anecdotal evidence suggests that antibiotics may be overprescribed in this setting (38). Maintaining continuity of care has been shown to be effective in improving health outcomes and is essential in patient-centered care. As remote consultation services—and more broadly, telemedicine as a whole—are integrated into the existing system of health care delivery, it will be important to continue to encourage patients to establish and maintain relationships with physicians in their local communities who can coordinate care and handle complex medical issues that cannot be addressed over the remote consultation medium.

Positions

1. ACP supports the expanded role of telemedicine as a method of health care delivery that may enhance

patient–physician collaborations, improve health outcomes, increase access to care and members of a patient's health care team, and reduce medical costs when used as a component of a patient's longitudinal care.

> *a. ACP believes that telemedicine can be most efficient and beneficial between a patient and physician with an established, ongoing relationship.*

> *b. ACP believes that telemedicine is a reasonable alternative for patients who lack regular access to relevant medical expertise in their geographic area.*

> *c. ACP believes that episodic, direct-to-patient telemedicine services should be used only as an intermittent alternative to a patient's primary care physician when necessary to meet the patient's immediate acute care needs.*

Increased demands on the health care system by patients, insurers, and employers to provide high quality at a low cost in a convenient setting require innovative thinking and new approaches to delivery. As technology has become a mainstay in most persons' day-to-day lives, the public has become more accepting and open to telemedicine as a form of health care delivery for preventive care, acute care, and chronic disease management. A 2008 study on the attitudes of urban and rural populations found that both were receptive to using telemedicine for primary care services (39). Although initially slow to adopt telemedicine technologies into the health care delivery system, many physicians, patients, and health care settings now use telemedicine to provide consultations, diagnoses, and treatment of medical conditions ranging from acute to severe. Forty-two percent of hospitals use some form of telemedicine (40), and a survey of physicians found that approximately 40% believed that using technology to communicate with patients would improve outcomes (41).

In 2008, ACP published the position paper, "E-Health and Its Impact on Medical Practice" (2), which highlighted the potential benefits of telemedicine on patient–physician collaborations, such as increasing patient access, "improving communication by broadening communication beyond office visits and telephone care to include other effective and convenient strategies using technology; improving patient satisfaction by enhancing access to high-quality health care from his or her physicians and health team, improving the efficiency of health care for patients, physicians, and employers through more appropriate use of resources and lowering the cost for payers; facilitating patient participation in health care decision making and self-management; and enabling virtual teams to contribute to enhanced patient-care processes." ACP believes that these collaborations are most beneficial in longitudinal patient–physician relationships and can drive high-value care.

Telemedicine has been shown in some cases to aid in extending the range of primary care physicians and subspecialists to patients they could not reach otherwise, provide care equitable to that of in-person visits, and reduce costs through heightened efficiency. Large-scale demonstration projects have yielded successful results and educational tools and guidance that can be applied to various care settings. The potential benefits of telemedicine have been recognized not only by the public and many members of the medical community but also federal and state legislators. The Patient Protection and Affordable Care Act supports expanded use of telemedicine, especially in new Medicare care models (such as accountable care organizations) explored under the Center for Medicare & Medicaid Innovation and Medicaid "health home" initiatives (42).

Although little empirical evidence exists about the influence of independent remote-consultation Web sites to support or fracture the continuity of care between a physician and patient, their popularity among patients seeking quick, convenient care independent of their usual primary care physician merits a deeper discussion about the role of these services in the health care delivery system. Physicians who incorporate telemedicine as a component of care through direct contact with the patient, as a way to consult with subspecialists, or as a method of referring patients to subspecialists offer the most complete and beneficial telemedicine care. This type of telemedicine keeps the care for the patient centralized and a full medical history available to the patient's physician or care team. Patient-initiated telemedicine care through on-demand Web site or health applications challenges the concept of "whole-person" care by creating individual silos with each visit that may or may not be integrated into the patient's medical history. Although it is possible to establish a patient–physician relationship via telemedicine, as noted later in this paper, translating those associations into meaningful relationships may prove difficult.

Although patient-initiated telemedicine may be convenient for the patient, it presents several challenges to maintaining continuity of care and a strong patient–physician relationship. It also may not deliver the same benefits as telemedicine used as a component of a patient's care recommended by the patient's physician. Several variable factors (such as the medical history provided to the consulting physician by the patient, ability of the consulting physician to access the patient's electronic health record, or even technology failure) may increase the likelihood that the visit may become an orphan event in the medical history, leaving the patient's physician or health care team without knowledge of the visit, prescriptions that may have been written, or recommendations. In addition, not being able to do a physical examination hinders certain

therapeutic elements associated with touch or interpersonal communication (43) and raises concerns about the accuracy of diagnoses when the physician cannot touch the patient to, for example, detect tenderness or swollen glands.

Much like retail health clinics that treat same-day, walk-in patients for low-acuity medical conditions, the telemedicine care setting creates limitations to care delivery and may not be appropriate for all patients or conditions. The lack of physical interaction can affect the type of care a patient may receive and the degree to which a physician can examine the patient. For example, it may not be appropriate for a man aged 57 years with a history of cardiovascular disease reporting upper respiratory distress to seek care through an on-demand telemedicine service. Conversely, a relatively healthy man aged 35 years with symptoms of sinusitis would probably be able to have his problem resolved through an on-demand site with few serious concerns to his health, although the physician providing the telemedicine service should encourage the man to seek in-person physician care if the physician believes that the patient needs a physical examination to confirm diagnosis. The circumstances under which a patient may seek on-demand telemedicine should be made on a case-by-case basis according to the patient's medical needs.

Because convenience is consistently cited as the driving factor for seeking care through on-demand telemedicine sites, physicians in all types of practices should consider ways to integrate convenient care options into their practice, such as the patient-centered medical home model, same-day scheduling, or e-visits and e-consultations. The patient-centered medical home model strives to coordinate care across the health system and provide patients with access to care that matches their needs, including increased access to after-hours care and convenient care options (such as telephone consultations with a health professional with knowledge of the patient's medical record). Physicians are also encouraged to engage patients on the importance of having longitudinal relationships with physicians they trust, who have overall responsibility for their care, and work in partnership with patients and collaboratively with other health care professionals. The patient-centered medical home model is ideally suited to providing such a relationship, providing the convenience and tools patients want while reducing the potential for fracturing their continuity of care by seeking episodic care through direct-to-patient sites.

2. ACP believes that a valid patient–physician relationship must be established for a professionally responsible telemedicine service to take place. A telemedicine encounter itself can establish a patient–physician relationship through real-time audiovisual technology. A physician using telemedicine who has no direct previous contact or existing relationship with a patient must do the following:

a. Take appropriate steps to establish a relationship based on the standard of care required for an in-person visit, or

b. Consult with another physician who does have a relationship with the patient and oversees his or her care.

Ethical considerations of telemedicine often center on the establishment of a patient–physician relationship and if, when, and how a relationship may be established through telemedicine. The ACP *Ethics Manual* Sixth Edition (44) states that "an individual patient–physician relationship is formed on the basis of mutual agreement." The FSMB states that a patient–physician relationship generally starts when a patient seeks assistance for a health-related matter and is definitively established when the physician agrees to "undertake diagnosis and treatment of the patient and the patient agrees to be treated, regardless of whether there has been an encounter in person between the physician . . . and patient" (45).

The FSMB and American Medical Association acknowledge that a patient–physician relationship may be established through certain telemedicine technologies if conditions similar to an in-person visit are met. However, standards of care for in-person visits also apply to encounters that do not take place in person, including those regarding privacy, informed consent, documentation, continuity of care, and prescribing. For example, writing prescriptions "based only on an online questionnaire or phone-based consultation does not constitute an acceptable standard of care" (44). Care delivered via telemedicine should provide information equal to an in-person examination, conform to the standard of care expected of in-person care, and incorporate diagnostic tests sufficient to provide an accurate diagnosis. Some courts have deemed remote technologies as adequate for establishing a patient–physician relationship even if the 2 persons never meet. A case tried in Texas found that a pathologist contracted with a patient's physician who did not have any physical interaction with the patient did have a patient–physician relationship because the pathologist's work benefited the patient (46).

Telemedicine brings the opportunity for increased access to care, but these benefits must be balanced according to the nature of the particular encounter and the risks from the loss of the in-person encounter (such as the potential for misdiagnosis; inappropriate testing or prescribing; and the loss of personal interactions that include the therapeutic value of touch, communications with body language, and continuity of care). To date, little evidence exists about the effects of telemedicine on patient–physician relationships (47).

3. ACP recommends that telehealth activities address the needs of all patients without disenfranchising financially disadvantaged populations or those with low literacy or low technologic literacy. In particular, telehealth activities need to consider the following:

a. The literacy level of all materials (including written, printed, and spoken words) provided to patients or families.

b. Affordability and availability of hardware and Internet access.

c. Ease of use, which includes accessible interface design and language.

ACP reaffirms its position from the 2008 e-health paper advocating for protocols and materials that make telemedicine accessible and affordable to all populations, including those who may be disenfranchised. An examination of 62 telehealth Web sites assessed various components of these sites and identified issues to consider for future designs (48). With research showing that expansion of telemedicine can benefit many patient groups, including underserved populations, those who use telemedicine or create and distribute information on telehealth services should be cognizant of the factors that may hamper patients' understanding or use of telemedicine and how it applies to their individual needs (49).

4. ACP supports the ongoing commitment of federal funds to support the broadband infrastructure needed to support telehealth activities.

To provide high-speed, reliable connections for telehealth and mHealth, a strong broadband infrastructure must be in place. This is particularly important in rural communities, where a lack of physicians may require patients to use telemedicine as their main source of primary care or access to subspecialists. In March 2010, the Federal Communications Commission released the National Broadband Plan with the goals of designing policies to spur innovation of, investment in, and access to broadband capabilities (50). In 2014, the Federal Communications Commission announced $400 million in annual funding for the Healthcare Connect Fund with the aim of increasing broadband Internet services to rural clinicians, among others (51). This type of continued investment is needed to support a strong network for U.S. clinicians offering telehealth services and to keep up with the demand of existing telehealth services and the rapidly expanding mHealth market.

5. ACP believes that physicians should use their professional judgment about whether the use of telemedicine is appropriate for a patient. Physicians should not compromise their ethical obligation to deliver clinically appropriate care for the sake of new technology adoption.

a. If an in-person physical examination or other direct face-to-face encounter is essential to privacy or maintaining the continuity of care between the patient's physician or medical home, telemedicine may not be appropriate.

Telemedicine is mainly recognized as a delivery method used to augment traditional care—not a medical specialty that would or should replace existing medical practice. As is the case with in-person care, physicians and patients are in the most appropriate position to determine whether the patient would benefit from telemedicine as part of their care. Physicians should take into account evidence-based practices and the best interest of an individual patient and his or her circumstances when considering whether to incorporate telemedicine.

Many new and inventive telemedicine technologies and applications are developed every day; however, until they are tested and shown to be effective in their intended uses, it should not be assumed that they are better simply because of their novelty. Although technology has advanced considerably, certain aspects of the medical encounter, such as the physical examination, cannot be entirely replicated through telemedicine. However, if a physician believes that physical examination is essential for clinically appropriate care, telemedicine should not be used exclusively to diagnose the patient.

The ACP Ethics Manual (44) regarding the physician and the patient states the following:

> The physician's primary commitment must always be to the patient's welfare and best interest, whether in preventing or treating illness or helping patients to cope with illness, disability, and death. . . . The interest of the patient should always be promoted regardless of financial arrangements; the health care setting; or patient characteristics, such as decision-making capacity, behavior, or social status.

6. ACP recommends that physicians ensure that their use of telemedicine is secure and compliant with federal and state security and privacy regulations.

As the use of telemedicine, and particularly the use of 2-way interactive video, by patients and physicians increases, it is important that patients' protected health information is kept secure and confidential. Recent large-scale technologic security breaches have raised public concern about the safety of consumers' personal information when collected and stored as a part of a telemedicine encounter. An analysis of research found a lack of standardization in telemedicine security (52). Many questions arise when the security of a telemedicine encounter is considered, such as the following: Are the patient and physician using secure devices? Is

information stored in a secure manner? Are the services compliant with the Health Insurance Portability and Accountability Act (HIPAA) or the Health Information Technology for Economic and Clinical Health Act? Is information properly encrypted? What is the security of network connections between sites? In addition, physicians should be aware of state laws or regulations around the recording of telemedicine sessions, images, or audio or visual information gathered and the inclusion of such recordings into a patient's health record.

Physicians must be conscientious of the type of technologies they use to facilitate telemedicine and whether they meet the terms of state and federal laws. For example, Skype (Microsoft) is a widely used Internet service that connects users through audio, video, and instant messaging. However, Skype is not considered HIPAA-compliant because Microsoft has not entered into a business associates agreement as required by the HIPAA Omnibus Rule. In 2014, a physician in Oklahoma who was providing telepsychiatry services and prescriptions over Skype was sanctioned by the state medical board. He was placed on 2 years of probation and required to complete a prescribing practices course after it was determined that Skype was noncompliant with Oklahoma's telemedicine policy (53).

7. ACP recommends that telemedicine be held to the same standards of practice as if the physician were seeing the patient in person.

a. ACP believes that there is a need to develop evidence-based guidelines and clinical guidance for physicians and other clinicians on appropriate use of telemedicine to improve patient outcomes.

ACP supports similar standards for telemedicine as in-person encounters, such as maintaining the privacy and security of the patient's health information and the medical record, adhering to evidence-based clinical practice guidelines, and prescribing practices. State medical boards or legislatures may pass policies and mandate certain requirements that are unique to telemedicine—for example, that a face-to-face encounter must take place before using telemedicine, even if the telemedicine encounter would be a clinically appropriate alternative. An analysis of state practice standards and licensure found a wide-ranging variation in these policies (33).

Telemedicine policymakers should be cautious not to set higher standards for telemedicine than for in-person encounters if there is no medical purpose. For example, some states require the presence of a telepresenter (an individual present with a patient or on the premises trained to assist a physician during a telemedicine encounter) with the patient at each telemedicine visit (33). Although the presence of a telepresenter may be appropriate in some cases to ensure proper functioning of equipment, aid the patient throughout

the visit, or present the patient's case to the distant site physician, mandating the presence of telepresenter at every telemedicine encounter creates an unnecessary barrier to use.

Longstanding ACP policy supports evidence-based practices in health care. Some state medical associations and medical specialty organizations have developed guidance for use of telemedicine in certain areas, such as telemental health, teledermatology, and home telehealth. The American Telemedicine Association has worked with groups to develop standards and clinical guidelines for medical specialties, including primary and urgent care. As telemedicine continues to develop, ACP believes that medical specialty societies and state medical boards should collaborate to establish guidance for best practices in the use of telemedicine.

8. ACP recommends that physicians who use telemedicine should be proactive in protecting themselves against liabilities and ensure that their medical liability coverage includes provision of telemedicine services.

Physicians who provide care through telemedicine have the same duty of care to their patients as if they were seeing them face to face but may encounter more questions on their liability when providing remote care. There is a dearth of information on medical liability in the arena of telehealth. The examples of legal challenges are primarily alleged illegalities in prescribing drugs over the Internet and not a result of physicians providing negligent care through telemedicine (54). In addition, individual medical malpractice carriers may have policies in place that provide differing coverage depending on the state in which the physician is practicing, the state in which he or she is providing a telehealth service, or provisions of the carrier's service.

In 2010, the University of Maryland School of Law's Law & Health Care program convened a roundtable discussion on the legal impediments to telemedicine, which included medical malpractice and liability. Participants identified areas that may present challenges to medical liability providers specific to telemedicine, including litigation issues, quality of medicine, quality of technology, and training (55). Other legal considerations include how to determine which state's laws will be used when the physician and patient are in different locations. Although these challenges are unique to telehealth, most liability does not considerably differ from that of in-person care. Physicians using telemedicine should ensure that they are adhering to all privacy laws as they would if they were seeing patients in person and adhere to the same level of professionalism. For example, a physician would not examine a patient in a public place without the patient's express consent; therefore, physicians would not see patients over telemedicine media in public places or potentially expose

patients and their health information without the patients' consent.

With little precedent providing guidance for how to protect physicians against liabilities that may arise when using telemedicine, physicians should be cautious and proactive by evaluating their existing medical liability coverage; obtaining documentation ensuring that their coverage pertaining to telemedicine in each state in which physicians practice, if applicable; and ensuring that they are following all state regulations about the recording and storing of information gathered through telemedicine.

9. ACP supports the ongoing commitment of federal funds to establish an evidence base on the safety, efficacy, and cost of telemedicine technologies.

Although telemedicine has been studied extensively, additional research is necessary to establish an evidence base on best practices to influence stakeholders and policymakers on how best to implement and reimburse for telehealth services. There are many examples of the usefulness of telemedicine and telehealth in individual specialties, such as dermatology, radiology, stroke, mental health, and cardiology; however, some believe that evidence gaps in the overall benefit of telemedicine are large enough to prevent adoption of legislation or policies that would support wider adoption. A systematic review of reviews on telemedicine including all e-health interventions found 21 reviews reporting that telemedicine is effective and an additional 18 stating that evidence is "promising but incomplete" (56). The review called for additional large-scale research into telemedicine. The Health Resources and Services Administration, National Institutes of Health, U.S. Department of Agriculture, Patient-Centered Outcomes Research Institute, and Center for Medicare & Medicaid Innovation support projects and research in innovative uses of technology and telemedicine. The potential cost savings to the U.S. health care system warrant continued investment into and exploration of telemedicine.

10. ACP supports a streamlined process to obtaining several medical licenses that would facilitate the ability of physicians and other clinicians to provide telemedicine services across state lines while allowing states to retain individual licensing and regulatory authority.

Telemedicine and state medical licensure proposals are often intertwined, and modifications to licensure portability are widely considered a way to remove barriers that may hinder the adoption of telemedicine. Medical licensing has traditionally been considered a state authority under the Tenth Amendment, which gives states powers that are not granted to the federal government by the Constitution. The existing system of state medical licensure requires a physician to apply directly to a medical or osteopathic board to obtain a license in an individual state or territory. In the past 20 years, there has been a movement to simplify the process of obtaining a medical license. All states now use the United States Medical Licensing Examination, 25 state boards use a uniform application, and more than one half of new-license applications use the FSMB credential-verification service (57).

In 2014, the FSMB finalized an interstate licensure compact that expedites the process of obtaining several medical licenses by streamlining the system (58). The compact received bipartisan support during the review process, and many applaud the effort to simplify the process for physicians seeking several licenses, improve access to telemedicine services, and uphold patient protection. The compact is supported by more than 25 medical and osteopathic boards and is being considered by several state legislatures (59). ACP supports the FSMB interstate compact and its efforts to ease administrative burdens that may hinder physicians from obtaining multiple medical licenses.

Although holding multiple medical licenses may facilitate increased adoption of telemedicine by expanding the scope of where a physician can practice, there are other ways for physicians to practice telemedicine across state lines without requiring changes to the existing medical licensure system or obtaining an unrestricted medical license. The number of physicians who hold 3 or more active medical licenses is relatively small (6%), and it has been suggested that those with 5 or more active licenses are probably radiologists or pathologists who practice telemedicine (58). Physicians who want to practice telemedicine but do not want to obtain a full, unrestricted medical license to do so should determine whether the state in which they wish to practice telemedicine use 1 or more of the following arrangements:

Special purposes license: Some states allow health professionals to obtain a limited license in the state for the delivery of specific health services.

Reciprocity: Two or more states may enter into reciprocity, an agreement that gives physicians certain privileges in 1 state given that physicians from the other state are given the same privileges in their state.

Mutual recognition: Licensing authorities voluntarily agree to accept the policies and processes of the state in which the physician is licensed.

Licensure by endorsement: States grant licenses to health professionals licensed in other states with equal licensing standards (60).

11. ACP supports the ability of hospitals and critical access hospitals to "privilege by proxy" in accordance with the 2011 Centers for Medicare & Medicaid Services final rule allowing a hospital receiving telemedicine ser-

vices (distant site) to rely on information from hospitals facilitating telemedicine services (originating site) in providing medical credentialing and privileging to medical professionals providing those services.

The Joint Commission (TJC), a hospital-accrediting organization, previously allowed hospitals providing telehealth services to "privilege by proxy," which allowed for originating sites to accept the distant site's privileging and credentialing decisions for physicians and health professionals who provide telemedicine services. However, revisions to the Conditions of Participation from the Centers for Medicare & Medicaid Services (CMS) rendered the TJC's process invalid. Through the rulemaking process, the CMS approved regulations similar to those that the TJC previously used in 2011. The TJC also approved the same regulations in 2011 (61).

Privileging by proxy is an optional process that does not prevent hospitals or facilities from using their own credentialing and privileging processes. Some hospitals may believe that the requirements to participate in the privileging-by-proxy process are more burdensome than their existing process and choose not to take part. However, hospitals and critical access hospitals should consider whether privileging by proxy could reduce the administrative cost or burden of credentialing health professionals. Privileging by proxy can save significant time and resources for both the originating and distant-site hospitals. Small hospitals and critical access hospitals can benefit substantially from the rule by reducing the administrative burden of duplicative activities for the originating site. The process can also reduce the burden for telemedicine practitioners, who are not required to repeatedly go through the privileging and credentialing process.

12. ACP supports lifting geographic site restrictions that limit reimbursement of telemedicine and telehealth services by Medicare to those that originate outside of metropolitan statistical areas or for patients who live in or receive service in health professional shortage areas.

Limited access to care is not an issue specific to rural communities; underserved patients in urban areas have the same risks as rural patients if they lack primary or specialty care regardless of where they live. The geographic site restrictions limiting reimbursement of telehealth services in Medicare were adopted in 2000 and sought to keep costs of telehealth in Medicare down, which at the time were estimated to be $150 million over 5 years. However, actual expenditures ended up being a small fraction of the estimated costs, at approximately $2 million per year over the first 6 years (62). The restrictions to Medicare payment for telehealth services have been largely unchanged, resulting in ongoing low reimbursement, with approximately $12 million paid in 2013 (63).

Expanded payment for telehealth services in Medicare has been the focus of several legislative and policy proposals over the past few years and will probably remain at the forefront of ongoing telemedicine debates. The CMS has worked to include more telehealth services under Medicare. The fiscal year 2014 Medicare Physician Fee Schedule expanded the number of eligible geographic locations with telemedicine-originating sites to rural areas that are located within metropolitan statistical areas. The CMS has moved to lift some of the geographic restrictions by allowing physicians and other health professionals to be reimbursed for telemedicine services provided at 1 of 8 originating sites, including the patient's home, if the physician or health professional is signed up for a next-generation accountable care organization. This preliminary expansion of telemedicine services to Medicare patients is a first step in providing care to thousands of beneficiaries and realizing the potential benefits of telemedicine for the Medicare system. It is important that patients are not denied access to telemedicine and its potential benefits simply because of where they are located when they receive care.

13. ACP supports reimbursement for appropriately structured telemedicine communications, whether synchronous or asynchronous and whether solely text-based or supplemented with voice, video, or device feeds in public and private health plans, because this form of communication may be a clinically appropriate service similar to a face-to-face encounter.

One of the most significant challenges to widespread telemedicine adoption is reimbursement. Research shows that telemedicine is most cost-effective when payers reimburse for those services. Telemedicine has been reimbursed in various ways since 1999, but recent efforts by telemedicine proponents have resulted in expanded public and private payment for telehealth services. However, a patchwork of laws gives physicians in some areas high incentives to adopt telemedicine, whereas incentives are lower or nonexistent in other areas.

Medicare: Medicare reimbursement for telehealth is narrowly confined to certain Part B services, technologies, and areas. A telemedicine service must originate at a site outside metropolitan statistical areas or in a rural census tract that is also defined as a rural health professional shortage area. The telehealth service must be a type of video-conferencing or 2-way communication system; reimbursement for store-and-forward technology is allowed only in Alaska, Hawaii, and federal demonstration programs.

Medicaid: Medicaid reimbursement policies vary widely, but 46 states and the District of Columbia reimburse for interactive or live video, 10 states reimburse for store-and-forward technology, 13 states reimburse

for remote monitoring, and 3 states reimburse for all 3. State legislatures have been active in proposing legislation to expand the scope of Medicaid reimbursement for different forms of telemedicine (64).

Private insurance: Twenty-one states and the District of Columbia require private insurance plans to cover telehealth services. Insurers have also begun partnering with telemedicine companies, giving their members access to remote consultation services, which may decrease costs for the insurer and increase satisfaction for patients who find the technology convenient and effective for the type of treatment they are seeking.

The early adoption of telemedicine technologies served as a way to increase access to health care for rural communities. Although the use of telemedicine has increased significantly since the introduction of telecommunications technologies to rural areas, public payment policy has not kept pace with expanded use. A growing amount of evidence suggesting the effectiveness of various types of telemedicine technology in several different care settings warrants consideration by payers, especially for store-and-forward technology, which is not considered by many payers to be telemedicine and therefore not reimbursed.

The multiple reimbursement policies for telemedicine in Medicare and Medicaid and by private insurance create uncertainty among clinicians and have fostered reluctance to use telemedicine by those who are unaware of practice or payment policies. Medicaid payment policies are widely variable and not guaranteed for all telehealth services, technologies, or practitioners. Physicians may use telemedicine only to find out later that they are not eligible for reimbursement, the technology that they used is not eligible for reimbursement, or they are not located in the proper geographic area for reimbursement. If the physician is reimbursed, the rate may be lower than expected. These variable guidelines are the result of considerable flexibility given to the states by Medicaid in determining whether to cover telemedicine, what types of telemedicine to cover, geographic restrictions to telemedicine reimbursement, who may provide telemedicine, and how much to reimburse (within federal upper limits) (65).

As more states recognize the benefits of telemedicine, they are mandating the coverage of telemedicine at the same rate as they would an in-person visit, often known as telehealth parity, mostly by private insurers. Although private insurance typically follows the federal government on payment for medical services, private payers have recognized the potential for significant cost benefits and have taken the first steps to reimburse for more types of telehealth services and technologies than public health plans. The American Telemedicine Association reports that 21 states require some form of telemedicine parity that reimburses to the same extent and in a similar manner as in-person

services under private health plans with the caveat that not all telehealth services similar to in-person visits are covered (65).

More states are considering proposing similar telehealth parity legislation. It may be appropriate for some telehealth services to be reimbursed at the same or similar level as that of an in-person visit if those services are similar to the in-person visit. When a path toward a stronger telemedicine reimbursement policy within the existing fee-for-service system is being considered, it is important that steps are taken to safeguard against abuse. Early concerns about potential abuse or overuse of telehealth services resulted in unwarranted limitations on telehealth services in public health care systems. The successful integration of telemedicine into the health care system will require consistency among public and private payers for physicians and health care professionals and a mindful approach to reimbursement for services rendered either through traditional or innovative methods.

Conclusion

The pace at which telemedicine continues to evolve to provide potential benefit to the health care system stresses the need for updated policies, regulations, and clinical practice guidelines that pave the way for future technologies while still maintaining high-quality care for patients. Telemedicine shows promise not just in the United States but across the globe as third-world and developed nations embrace technology as a way to provide citizens access to health care. The legal, regulatory, technical, and cultural barriers to widespread adoption in the United States should be addressed to fully realize the potential of telemedicine for the benefit of physicians, patients, and the health care system.

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