

Paying for Telemedicine

Robert S. Rudin, PhD; David Auerbach, PhD; Mikhail Zayzman, BS; and Ateev Mehrotra, MD

Telemedicine has the potential to reduce health-care costs, increase access to healthcare, and improve health outcomes.^{1,2} However, despite these prospective advantages, telemedicine has been adopted in only limited circumstances, such as for reading radiology reports and remote phone or video visits for minor health issues.³ To promote adoption, some have advocated for telemedicine services to be reimbursed by health plans and many states have issued parity laws⁴ that force payers to reimburse some forms of telemedicine services at a level equal to in-person care. In this perspective, we explore why health plans are reluctant to cover most telemedicine services as part of current payment arrangements and explain why newer payment models offer greater potential for its expanded and more effective use.

Telemedicine is the delivery of health-related services via telecommunication technologies, such as phones and the Internet. Although some services involve direct interaction between providers and patients,¹ Others involve passively collecting patients' data from their homes and sending the information to healthcare professionals for monitoring.

A central barrier to the adoption of telemedicine is fee-for-service (FFS), the predominant payment method in the United States. In FFS, providers submit a claim to be reimbursed for each clinical service they perform. Providers are not paid for any service not included in the payer's fee schedule. In many cases, virtual "visits" via phone or the Internet may be as effective in delivering care as in-person visits and require fewer resources to provide.⁴ However, most healthcare providers who adopt virtual visits will be financially penalized because many types of visits are not reimbursed or are reimbursed at lesser amounts. The few forms of telemedicine that have been widely adopted, such as remote reading of radiology reports, are exceptions. In those cases, the technology does not jeopardize FFS revenue for the provider adopting the technology.

Proponents argue that payers should add telemedicine as a reimbursable service. Some states have enacted parity laws and Congress is considering legislation to expand FFS reimbursement of telemedicine by Medicare. However, arguments in favor of this approach meet resistance from providers and payers alike. Providers are concerned that offering telemedicine (which, other than services covered under a parity law, is usually considered lower intensity compared with in-person visits and therefore reimbursed at a lower rate) will eat up much of their income because it will reduce the need for in-person visits. Payers have the opposite concern: although telemedicine reimbursement may increase use of actual service, inappropriate use will increase costs.¹ This concern regarding inappropriate use is consistent with other coverage decisions. For example, when payers expanded coverage of implantable cardiac defibrillators in the 1990s and 2000s, inappropriate use of the devices grew dramatically.^{5,6} Telemedicine may be particularly prone to overuse because of its key advantages—convenience and increased access.

Emerging Payment Models

Non-FFS payment models offer alternative ways to pay for telemedicine. Under capitation, the strongest form of these new models, providers receive a fixed payment to provide care for each individual. Thus, any reduction in care costs that results from using a lower-cost technology, such as telemedicine, would accrue entirely to the provider organization.

Because pure capitation involves substantial risks for providers, it is not a common payment arrangement. However, emerging models, such as Accountable Care Organizations (ACOs), involve a form of "global payment" in which providers' payments partially depend on the total health costs that their patients incur. In ACOs, providers must also meet quality-of-care standards, thereby favoring technologies that both improve quality of patient care and reduce costs.

Take-Away Points

- Telemedicine offers the potential for better care, lower costs, and increased convenience.
- Expanding existing fee-for-service payment models to include telemedicine may lead to its overuse. Already there are many skeptics among payers and providers regarding this method of payment.
- The greatest potential for effective and efficient use of telemedicine services lies in the use of emerging payment models.

Evidence from health maintenance organizations (HMOs) in the 1980s and 1990s suggests that the new payment models can stimulate adoption of cost-effective technology. HMOs are similar to newer payment models in that they also typically hold providers accountable for the costs of caring for their patients. One study of HMOs found that hospitals in areas with higher concentrations of HMO patients were more likely to use low-intensity heart attack treatment technologies (eg, medical management techniques) and less likely to use high-cost technologies (eg, cardiac catheterization, angioplasty, or bypass surgery), which evidence suggests are overused.^{7,8} The HMO experience suggests that new payment models will likely stimulate the adoption of telemedicine, which has advanced considerably in technical capability since the 1990s, and early evidence suggests that this is the case.^{9,10}

By placing incentives for reduced cost and improved quality in the hands of provider organizations rather than insurers, new payment approaches should help foster the efficient use of telemedicine. Under FFS, payers are often faced with blanket coverage/no coverage decisions for all providers in their network, regardless of whether FFS is being used in an appropriate or inappropriate clinical situation.¹¹ Under new payment models, adoption decisions are made by the providers, who have the flexibility to experiment with telemedicine and use the technology in a way that maximizes clinical outcomes and minimizes costs.

We provide 2 examples of how this may happen: videoconferencing for outpatient visits, and home telemonitoring.

Videoconferencing for Outpatient Visits

Real-time video communication between patient and provider allows for many of the same benefits as an in-person visit, without requiring the patient or provider to travel. This form of telemedicine has been evaluated in research studies for decades, and several studies have shown positive effects on patient outcomes even when low-bandwidth, telephone-based Internet connections

reduced the quality of the video image.¹² Videoconferencing in the form of visits for new acute problems is often covered by health plans, but use of videoconferencing is uncommon, particularly for chronic illness care, where it may have the most benefit. However, provider systems that have non-FFS payment models are already making extensive use of videoconferencing. In the Veterans Health

Administration (VHA), videoconferencing is used routinely to deliver mental health services.¹³ Kaiser, a capitated system that is providing 2.5 million "phone visits" each year, is testing videoconferencing for more general use,¹⁴ and has made more than 350 after-hours video visits to patients who claim they would have otherwise gone to the emergency department.

As more providers adopt new payment models, they will likely also begin to use videoconferencing. As an early example, the Alternative Quality Contract from Blue Cross Blue Shield uses global payments, and providers under that contract have begun piloting a telemedicine platform that enables videoconferencing visits.⁹ Because of global payments, the pilot practices will be motivated to prevent overuse, perhaps by triaging patient requests for videoconferences, using some form of co-pay, or making the virtual visit available only to patients for whom a physician believes it would be most beneficial.

Home Telemonitoring

Many technologies are available that measure health indicators of patients in their homes and transmit the data to an overseeing provider. The provider, who might be a physician, nurse, social worker, or even a non-clinical staff member, can filter patient questions and report to a clinical team when necessary. Several studies show the potential benefit. In a cardiac study at Partners Healthcare, 3000 congestive health failure patients received in-home monitoring of weight, blood pressure, heart rate, and pulse oximetry. Decision support software helped identify high-risk patients. As a result, readmissions dropped by 44%, saving the health plan \$10 million in 6 years.¹⁵ The VHA also implemented a home telemedicine program in which the more than 17,000 patient participants had a 25% reduction in the number of bed days of care and a 20% reduction in the number of hospital admissions compared with usual care.¹⁶

As new payment models that reward cost savings spread, providers will have incentives to adopt these home monitoring technologies as part of routine care.

Early reports suggest that providers are responding to these incentives: ACOs are planning to use home monitoring to prevent more costly hospital visits or emergency care.¹⁰ As with virtual visits, the new payment models will encourage telemonitoring to be used only for patients who will likely benefit from the service.

CONCLUSIONS

Telemedicine technologies have the potential to benefit patients by increasing access to care, promoting convenience, enhancing quality of healthcare, and reducing costs.¹ However, payers and providers are unlikely to support adding telemedicine as a reimbursed service because of its uncertain effect on provider payments and its potential for overuse. Direct reimbursement might still be needed for certain telemedicine services, but such payments will likely be the exception, not the rule. Emerging payment models offer the greatest hope that telemedicine will be widely adopted and used in a way that will make it worth the cost.

Author Affiliations: From RAND Corporation, Boston, MA (RSR, DA, AM), and Santa Monica, CA (MZ).

Source of Funding: Some of this work was funded by a generous gift from Teletracking, Inc.

Author Disclosures: The authors report no relationship or financial interest with any entity that would pose a conflict of interest with the content of this paper.

Authorship Information: Concept and design (RSR, DA, AM); acquisition of data (MZ); analysis and interpretation of data (MZ); drafting of the manuscript (RSR, DA, MZ, AM); critical revision of the manuscript for important intellectual content (RSR, DA, MZ); obtaining funding (RSR, DA); administrative, technical, and logistic support (RSR, AM, MZ); and supervision (RSR).

Address correspondence to: Robert S. Rudin, PhD, RAND Corporation, 20 Park Plaza, Suite 920, Boston, MA 02116. E-mail: rrudin@rand.org.

REFERENCES

- Kvedar J, Coyle MJ, Everett W. Connected health: a review of technologies and strategies to improve patient care with telemedicine and telehealth. *Health Aff (Millwood)*. 2014;33(2):194-199.
- Schwamm LH. Telehealth: seven strategies to successfully implement disruptive technology and transform health care. *Health Aff (Millwood)*. 2014;33(2):200-206.
- Lewis RS, Sunshine JH, Bhargavan M. Radiology practices' use of external off-hours teleradiology services in 2007 and changes since 2003. *Am J Roentgenol*. 2009;193(5):1333-1339.
- Courneya PT, Palattao KJ, Gallagher JM. HealthPartners' online clinic for simple conditions delivers savings of \$88 per episode and high patient approval. *Health Aff (Millwood)*. 2013;32(2):385-392.
- Al-Khatib SM, Sanders GD, Mark DB, et al. Implantable cardioverter defibrillators and cardiac resynchronization therapy in patients with left ventricular dysfunction: randomized trial evidence through 2004. *Am Heart J*. 2005;149(6):1020-1034.
- Al-Khatib SM, Hellkamp A, Curtis J, et al. Non-evidence-based ICD implantations in the United States. *JAMA*. 2011;305(1):43-49.
- Cutler DM, McClellan M. The determinants of technological change in heart attack treatment. National Bureau of Economic Research; 1996.
- Skinner JS, Staiger DO, Fisher ES. Is technological change in medicine always worth it? the case of acute myocardial infarction. *Health Affairs*. 2006;25(2):w34-w47.
- Monegain B. Two Blues go for telehealth: tap American Well for projects in Louisiana and Massachusetts. *Healthcare IT News*. June 21, 2013. <http://www.healthcareitnews.com/news/two-blues-plans-go-telehealth>. Accessed December 1, 2014.
- Nelson B. Two Accountable Care Organizations (ACOs) Share their Strategies for Success. The Hospitalist. April 1, 2013. http://www.thehospitalist.org/details/article/4519521/Two_Accountable_Care_Organizations_ACOs_Share_Their_Strategies_for_Success.html. Accessed December 1, 2014.
- Garber AM. Cost-effectiveness and evidence evaluation as criteria for coverage policy. *Health Aff (Millwood)*. 2004;(Suppl Web Exclusives):W4-284-296.
- Wade VA, Karnon J, Elshaug AG, Hiller JE. A systematic review of economic analyses of telehealth services using real time video communication. *BMC Health Serv Res*. 2010;10(1):233.
- Deen TL, Godleski L, Fortney JC. A description of telemental health services provided by the Veterans Health Administration in 2006-2010. *Psychiatr Serv*. 2012;63(11):1131-1133.
- Pearl R. Kaiser Permanente Northern California: Current experiences with internet, mobile, and video technologies. *Health Aff (Millwood)*. 2014;33(2):251-257.
- Kulshreshtha A, Kvedar JC, Goyal A, Halpern EF, Watson AJ. Use of remote monitoring to improve outcomes in patients with heart failure: a pilot trial. *Int J Telemed Appl*. 2010;2010:3.
- Darkins A, Ryan P, Kobb R, et al. Care coordination/home telehealth: the systematic implementation of health informatics, home telehealth, and disease management to support the care of veteran patients with chronic conditions. *Telemed J E Health*. 2008;14(10):1118-1126. ■

www.ajmc.com Full text and PDF