

Direct-to-Patient Telehealth: Opportunities and Challenges

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ABSTRACT

Provision of healthcare services through telehealth continues to increase. This rise is driven by the several factors, such as improved access, decreased cost, patient convenience and positive patient satisfaction. Direct-to-patient (DTP) care delivery is the most popular form of telehealth. However, barriers exist to its widespread use in practice, such as lack of reimbursement, concern that the convenience of these services may raise utilization to the point that spending increases without increasing quality of care, concern about quality of care provided and low uptake by underrepresented or at risk populations. DTP offers opportunities to improve population health and provide value-based care within integrated health systems, but requires thoughtful implementation strategies that address patient and provider barriers to its use.

KEYWORDS: telehealth, direct-to-consumer, direct-to-patient, e-visits, quality

Telehealth encompasses the provision of health services through a variety of information and communication technologies, which can be synchronous (e.g. video visits) or asynchronous (e.g. store and forward of images, remote patient monitoring). Most practices have some experience with the use of phone triage to answer patient concerns, which can also be considered a form of telehealth, although it is not generally denoted as such. Although very convenient for patients and not requiring any new technology infrastructure for practices, it is often not the preferred form of patient contact as it requires trained staff and is often not reimbursed. Current evidence from systematic reviews of telephone triage are not definitive regarding the quality of care provided, outcomes and costs.¹

The use of telehealth continues to expand, with an estimated 61% of US healthcare institutions and 40–50% of US hospitals using telemedicine in 2016, and projections that in 2020 all large employers will provide coverage for these services.^{2,3} Multiple factors influence the increase in telehealth use, such as the potential to decrease costs and increase access to care. Consumer demand is another important driver of use. Multiple studies demonstrate patients using

telehealth in general are very satisfied, and are willing to use the services again.^{4,5,6}

Although reimbursement has been a barrier to widespread adoption of telehealth, recent changes in Centers for Medicare & Medicaid Services (CMS) payment policies that allow for reimbursements for telehealth services such as Brief Communication Technology-based Service, e.g. Virtual Check-ins (HCPCS code G2012) and Remote Evaluation of Pre-Recorded Patient Information (HCPCS code G2010) potentially herald upcoming changes that will improve reimbursement.⁷ Updated codes for remote patient monitoring also have the potential to increase its use for monitoring of chronic conditions (CPT code 99453, 99454, 99457). This could further accelerate the growth of telehealth service delivery.

DIRECT-TO-PATIENT CARE DELIVERY (DTP)

One frequently used modality of telehealth is direct-to-patient care delivery (DTP), also described as direct-to-consumer, which provides care by connecting patients to providers directly. This is currently the most popular form of telehealth, with large growth occurring, and with most of the services being provided by private sector companies instead of health systems or private practices. For instance, Teladoc, a private sector company that provides these services, performed more than 1.46 million visits in 2017, showing an increase of 53% in visits over one year.⁸ Similarly, American Well reports over 1.5 million downloads of their service app; MeMD reports 4.5 million users since its founding in 2010, and Doctor on Demand is predicted to reach two million video visits by summer of 2019.^{9,10,11} Direct-to-patient care can happen synchronously, through chat or video technologies, or asynchronously, where patients may answer a questionnaire or send in images for the clinician to review at a later time. This asynchronous method is commonly described as e-visits, whose use has expanded due to their convenience and potential cost-saving benefits to patients and health systems.^{12,3} However, concerns remain regarding how to provide this type of care while retaining appropriate quality care, care coordination and with avoidance of unnecessary costs. For instance, a study by Usher et al suggests that direct-to-patient telehealth services increases spending by making access to care more convenient, leading to more utilization. It is unclear if this extra utilization improved quality of care for the patients.¹⁴

QUALITY MEASURES

When quality of care has been evaluated using claims data, direct-to-patient care providers were less likely to order diagnostic testing for strep throat and more likely to prescribe antibiotics for bronchitis than providers seeing patients in physician offices.¹⁵ However, comparisons of antibiotic prescribing for acute sinusitis between DTP telemedicine visits and emergency department and urgent care visits showed similar adherence to choosing wisely antibiotic stewardship guidelines.¹⁶ Similarly, Shi et al also found rates of antibiotic use, broad-spectrum antibiotic use and guideline-concordant antibiotic management between DTP telemedicine visits, primary care visits and urgent care visits were comparable.¹⁷

Further studies evaluating the impact, costs and quality of care of DTP telemedicine care are still needed. One common approach to evaluation involves assessing the need for follow-up visits after care is provided via an e-visit. Some studies demonstrate follow-ups ranging from 10% to 34%, with some differences probably due to heterogeneity in the populations being served and length of follow-up time assessed.^{18, 19, 20} In our recent study published in *Health Affairs* evaluating follow-up within 2 weeks after an e-visit for the same complaint, 4.4% of 1,465 e-visits completed resulted in follow-up through an in-person visit. Of those patients who were seen in person, 81.5% did not have a change in their diagnosis.⁴

This study also looked at what type of concerns and patient demographics were associated with not being able to complete the e-visit, leading to an in-person visit being recommended by the telemedicine provider. Of 1,565 total e-visits requested, 6.4% were not completed. Men and older adults, as well as patients with diarrhea or skin problems, were more likely to have e-visits not completed. Finally, a survey after the e-visit inquired where patients would have gotten care if the e-visit was not available. Of 665 respondents, only 9% stated they would not have received care, with 49% stating they would go to a physician's office and 42% stating they would have gone to an urgent care center, ED, or retail health clinic. Although self-report of intention is subject to bias, this suggests that costs were avoided through the use of these visits. These results were found in the context of providing e-visit virtual acute care within a coordinated system of care, where e-visit, ambulatory and inpatient care providers all utilize the same electronic medical record system when providing care, allowing for seamless information exchange. It is unclear whether similar results occur when care is provided with unrelated platforms and electronic medical records, where the patient would be required to input their medical history for review. It is also unclear how often care provided through DTP telemedicine platforms is shared with the patient's primary care provider to enable care coordination.

The use of DTP telemedicine care within value-based care also warrants further evaluation. When provided without appropriate care coordination, it may be helpful if it

decreases costs through avoidance of in-person visits, especially to higher cost areas such as the emergency department or an urgent care center. The increased access available through telemedicine might also facilitate care earlier during the course of an acute problem or chronic disease exacerbation, thereby avoiding more costly care due to disease progression. However, if it replaces preventive or primary care visits where preventive measures are discussed and provided (e.g. influenza and pneumonia vaccinations, cervical cancer screening, or screening for sexually transmitted infections), it could be disruptive in a way that decreases the quality of care provided. This concern is described in a study looking at use of commercial DTP telemedicine for pediatric acute visits, which found those using these services were less likely to have had preventive care visits.²¹ Similarly, chronic care exacerbations might be best addressed by a provider who has a continuity relationship with the patient, in order to ensure appropriate changes are made to their medication regimen to try to avoid future exacerbations. Encouraging continuity of care when providing telemedicine services is in line with survey results from 4,345 respondents, where more than half (56%) felt it was important to have an established relationship with a provider they're having a telemedicine visit with.²³ Understanding the risks and benefits to patients and their care coordination and continuity of care might better allow for the development of telemedicine programs that enhance care more broadly without significantly decreasing continuity of care.

POPULATION HEALTH

The use of telemedicine holds great potential to improve health promotion due to its ability to reach populations that may not currently be accessing services on a regular basis (e.g. younger adults, those living in rural areas, or adults without chronic conditions). Thus, to improve population health, methods to best encourage needed preventive services when a patient's main interaction is through DTP telemedicine care should be identified and implemented.

It is also important to note that studies looking at patient demographics regarding the use of information technology and telemedicine suggest underrepresented groups are not being reached, which could expand health disparities that already exist. For instance, Anthony et al found racial disparities in patients being offered access to online patient portals, with Non-Hispanic blacks having higher odds of not being offered access when compared to non-Hispanic whites (OR: 1.73). Non-users of the portal were more likely to be on Medicaid, lack a regular provider, and have less than a college education.²³ In general, the populations using DTP telemedicine services appear to be younger adults.⁴ Methods to improve uptake of services by underserved population should also be a priority as telemedicine services continue to expand.

CONCLUSION

In conclusion, DTP telemedicine provides opportunities to improve access and convenience for patients, and has the potential to provide interactions with populations that are not currently accessing health care regularly. It can be successfully implemented in ways that limit costs and improve care. However, its use will require continued improvement in reimbursements for the care provided, as well as overcoming patient and provider barriers to the uptake of new technology and modes of care. We believe its use will continue to expand, and would like to see it used more effectively in the care of chronic conditions and for preventive care provision. These use cases for DTP telemedicine might be the ones best suited to improve quality of care and decrease costs, and warrant further study to identify best practices.

References

- Lake R, Georgiou A, Li J, et al. The quality, safety and governance of telephone triage and advice services - an overview of evidence from systematic reviews. *BMC Health Serv Res*. 2017;17(1):614. Published 2017 Aug 30. doi:10.1186/s12913-017-2564-x
- U.S Department of Health and Human Services. E-health and Telemedicine. <https://aspe.hhs.gov/system/files/pdf/206751/TelemedicineE-HealthReport.pdf>. Published August 12, 2016. Accessed June 15, 2019.
- Edmunds M, Tuckson R, Lewis J, et al. An Emergent Research and Policy Framework for Telehealth. eGEMs (Generating Evidence & Methods to improve patient outcomes) *The Journal of Electronic Health Data and Methods*. 2017;5(2). doi:10.13063/2327-9214.1303.
- Player M, O'Bryan E, Sederstrom E, Pinckney J, Diaz V. Electronic Visits For Common Acute Conditions: Evaluation Of A Recently Established Program *Health Affairs*. 2018;37(12):2024-2030. doi:10.1377/hlthaff.2018.05122.
- Polinski JM, Barker T, Gagliano N, Sussman A, Brennan TA, Shrank WH. Patients' Satisfaction with and Preference for Telehealth Visits. *Journal of General Internal Medicine*. 2015; 31(3):269-275. doi:10.1007/s11606-015-3489-x.
- Kruse CS, Krowski N, Rodriguez B, Tran L, Vela J, Brooks M. Telehealth and patient satisfaction: a systematic review and narrative analysis. *British Medical Journal*. 2017;7(8).
- Medicare Program; Revisions to Payment Policies Under the Physician Fee Schedule and Other Revisions to Part B for CY 2019; Medicare Shared Savings Program Requirements; Quality Payment Program; Medicaid Promoting Interoperability Program; Quality Payment Program-Extreme and Uncontrollable Circumstance Policy for the 2019 MIPS Payment Year; Provisions From the Medicare Shared Savings Program-Accountable Care Organizations-Pathways to Success; and Expanding the Use of Telehealth Services for the Treatment of Opioid Use Disorder Under the Substance Use-Disorder Prevention That Promotes Opioid Recovery and Treatment (SUPPORT) for Patients and Communities Act. Federal Register. <https://www.federalregister.gov/documents/2018/11/23/2018-24170/medicare-program-revisions-to-payment-policies-under-the-physician-fee-schedule-and-other-revisions>. Published November 23, 2018. Accessed June 15, 2019.
- Elliott T, Shih J. Direct to Consumer Telemedicine. *Current Allergy and Asthma Reports*. 2019;19(1). doi:10.1007/s11882-019-0837-7.
- American Well. http://go.americanwell.com/rs/335-QLG-882/images/American_Well_Telehealth_Index_2017_Consumer_Survey.pdf. Accessed July 1, 2019.
- Livernois C. Doctor on Demand passes 1M virtual visits. *AI in Healthcare Innovation to Transform Healthcare*. May 2018.
- About. MeMD. <https://www.memd.net/about>. Accessed July 1, 2019.
- Dorsey ER, Topol EJ. State of telehealth. *New England Journal of Medicine*. 2016;375(2):154-61 doi: 10.1056/NEJMra1601705.
- Rohrer JE, Angstman KB, Adamson SC, Bernard ME, Bachman JW, Morgan ME. Impact of Online Primary Care Visits on Standard Costs: A Pilot Study. *Population Health Management*. 2010;13(2):59-63. doi:10.1089/pop.2009.0018.
- Ashwood JS, Mehrotra A, Cowling D, Uscher-Pines L. Direct-To-Consumer Telehealth May Increase Access To Care But Does Not Decrease Spending. *Health Affairs*. 2017;36(3):485-491. doi:10.1377/hlthaff.2016.1130.
- Uscher-Pines L, Mulcahy A, Cowling D, Hunter G, Burns R, Mehrotra A. Access and Quality of Care in Direct-to-Consumer Telemedicine. *Telemedicine and e-Health*. 2016;22(4):282-287. doi:10.1089/tmj.2015.0079.
- Halpren-Ruder D, Chang AM, Hollander JE, Shah A. Quality Assurance in Telehealth: Adherence to Evidence-Based Indicators. *Telemedicine and e-Health*. August 2018. doi:10.1089/tmj.2018.0149.
- Shi Z, Mehrotra A, Gidengil CA, Poon SJ, Uscher-Pines L, Ray KN. Quality Of Care For Acute Respiratory Infections During Direct-To-Consumer Telemedicine Visits For Adults. *Health Affairs*. 2018;37(12):2014-2023. doi:10.1377/hlthaff.2018.05091.
- Albert SM, Shevchik GJ, Paone S, Martich GD. Internet-Based Medical Visit and Diagnosis for Common Medical Problems: Experience of First User Cohort. *Telemedicine and e-Health*. 2011;17(4):304-308. doi:10.1089/tmj.2010.0156.
- Brunett PH, Dipiero A, Flores C, Choi D, Kum H, Girard DE. Use of a voice and video internet technology as an alternative to in-person urgent care clinic visits. *Journal of Telemedicine and Telecare*. 2015;21(4):219-226. doi:10.1177/1357633x15571649.
- Penza KS, Murray MA, Pecina JL, Myers JF, Furst JW. Electronic Visits for Minor Acute Illnesses: Analysis of Patient Demographics, Prescription Rates, and Follow-Up Care Within an Asynchronous Text-Based Online Visit. *Telemedicine and e-Health*. 2018;24(3):210-215. doi:10.1089/tmj.2017.0091.
- Ray KN, Shi Z, Poon SJ, Uscher-Pines L, Mehrotra A. Use of Commercial Direct-to-Consumer Telemedicine by Children. *Academic Pediatrics*. January 2019. doi:10.1016/j.acap.2018.11.016.
- Welch BM, Harvey J, O'Connell NS, Mcelligott JT. Patient preferences for direct-to-consumer telemedicine services: a nationwide survey. *BMC Health Services Research*. 2017;17(1). doi:10.1186/s12913-017-2744-8.
- Anthony DL, Campos-Castillo C, Lim PS. Who Isn't Using Patient Portals and Why? Evidence and Implications From a National Sample of US Adults. *Health Affairs*. 2018;37(12):1948-1954. doi:10.1377/hlthaff.2018.05117.

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