Broadband and Telemedicine

Executive Summary

Telemedicine refers to technological delivery of healthcare services, such as phone/video visits or remote monitoring of patients, in which patient and provider are at different locations. Telemedicine is effective for many types of care and can improve access and convenience of care for patients. However, many patients that could benefit the most from telehealth (including rural residents, elderly, underinsured, and minorities) often have limited broadband access, which can limit their access to care. RSMo 208.670 requires telehealth providers to ensure the same standard of care as what patients would receive in person. Additional proposals have been put forth to expand broadband access, recognize cross-border medical licenses, and require coverage and price parity for these services.

Highlights

- Prior to 2020, global growth in the use of telemedicine was estimated to be increasing between 13–27% annually.

- Numerous studies have found certain uses of telemedicine (e.g., monitoring asthma, chronic heart failure, and opioid use disorder) to be as effective as in-person options.

- Since 2020, all states have required some form of coverage for telehealth options, and more than half of states require parity in reimbursing these services at the same rates as in-person visits.

Limitations

- Telemedicine quality-of-care varies depending on physician training and the network of telehealth providers available.

- Importantly, telehealth may not be appropriate in certain scenarios, such as when a hands-on physical examination would yield crucial data and when clinical outcomes cannot be met.

- Given the recency of the advent of telemedicine, randomized controlled trials have yet to determine if telemedicine has the same long-term health benefits as in-person visits.

Research Background

Telemedicine and Telehealth Overview

Telemedicine refers to clinical services provided over distance, while telehealth refers to broader non-clinical health-related services. Common telemedicine procedures can include consultation (where a primary care provider can communicate with a specialist regarding the patient),

diagnosis (where the tests, images, and results can be sent to a specialist for interpretation), and monitoring (where ailments like diabetes or heart disease can be monitored remotely with devices by the provider). Telemedicine has been shown to improve satisfaction, access, decrease costs, and increase the quality-of-care by getting specialist attention more quickly. Prior to 2020, global growth in the use of telemedicine was estimated to increase between 13–27% annually. [1]

Telemedicine Impacts

Patient Travel and Cost Savings

Telemedicine visits, compared to in-person visits, can reduce barriers to getting health care. One study indicates that even with an option of free care, people were only willing to travel on average 20 miles for preventative care.[2] A study from the University of California, Davis Health System estimated that their telehealth system, focused on rural, underserved populations, saved patients 139 miles of travel, 123 minutes of travel and $78 in travel costs on average per consultation.[3] Patients may also save on the cost of care itself, particularly when expensive alternatives can be avoided (such as visiting an emergency room when seeking medical advice).[4,5]

Quality of Care

Telemedicine can be an effective option for many types of care, depending on the physician and access to a network of other telehealth providers. Studies comparing telehealth to in-person consultations indicate that telehealth options can be as effective as in-person options for asthma, chronic heart failure, and opioid use disorder.[13-15] Telemedicine technologies can also connect providers to each other. For instance, the Show-Me ECHO (Extension for Community Healthcare Outcomes) Project, led by the Missouri Telehealth Network, helps to connect isolated primary care providers to share evidence-based practices to improve patient outcomes.[16]

Telemedicine can also come with risks for lower quality care. In particular, direct-to-consumer telemedicine (on-demand health-care that can sometimes be with a physician that the patient had no previous relationship with) is sometimes associated with lower quality care, with less guideline-concordant treatment, including over-prescription of antibiotics.[17,18] Further, telehealth may not be appropriate in certain scenarios, such as when a hands-on physical examination would yield crucial data and when clinical outcomes cannot be met.[19]

Access to Broadband and Telemedicine

Telemedicine technology often requires broadband internet access. Patients lacking access to broadband often stand to benefit the most from telemedicine. For example, 33% of Missourians live in rural areas, where access to both physicians and broadband are more limited than in urban areas.[6] Across the U.S., rural counties with low broadband access had 34% fewer telemedicine visits than those with high broadband access.[7] Even in urban areas, the elderly, underinsured, and minoritized patients are often less likely to live in areas with high internet connectivity.[8] One study found that people living in neighborhoods with broadband access were more likely to use a patient portal, allowing them to view test results, seek medical advice, and

read messages from the healthcare providers.[8] A study conducted during the COVID-19 pandemic suggests that disparities exists in patients completing telehealth appointments and in their ability to use video or phone only.[9]

Data from the National Health and Aging Study indicate that, of the 59% of seniors aged 65 and older who were internet users, roughly 35% engage in telehealth services. Telehealth use was largely dependent on internet access, education, income, and overall age.[10] These findings were mirrored during the advent of the COVID-19 pandemic in 2020, with roughly 1-in-4 Medicare beneficiaries attending a telehealth visit that year, including checkups, psychotherapy, and preventive health screenings, among other services. Importantly, the majority of visits were accessed using a telephone only; many elderly individuals (especially Black and Latino) report not owning a computer.[11]

Several recent efforts in Missouri have been proposed to expand broadband access. For more information, please see our following Science Notes: Broadband Deployment; Broadband Availability Mapping; Granular Broadband Mapping; Broadband Development Task Forces; Vertical Asset Management, Public-Private Partnerships, and Funding Benchmarks for Broadband Development.

Building Telehealth Infrastructure

The American Rescue Plan of 2021 gave states the opportunity to receive a 10% increase for Medicaid federal matching of funds through March 31, 2022 for one-time spending for support of telehealth service and delivery, data and infrastructure building, and technology-based innovations. As of November 2021, 14 states (including KY) and D.C. have put forward plans for telehealth spending, 34 states (including AR, KY, TN, OK, NE, and MO) have put forward plans for technological investments, and 24 states (including IA, KY, OK, and MO) have put forward plans for data infrastructure and management systems for healthcare distribution.[12]

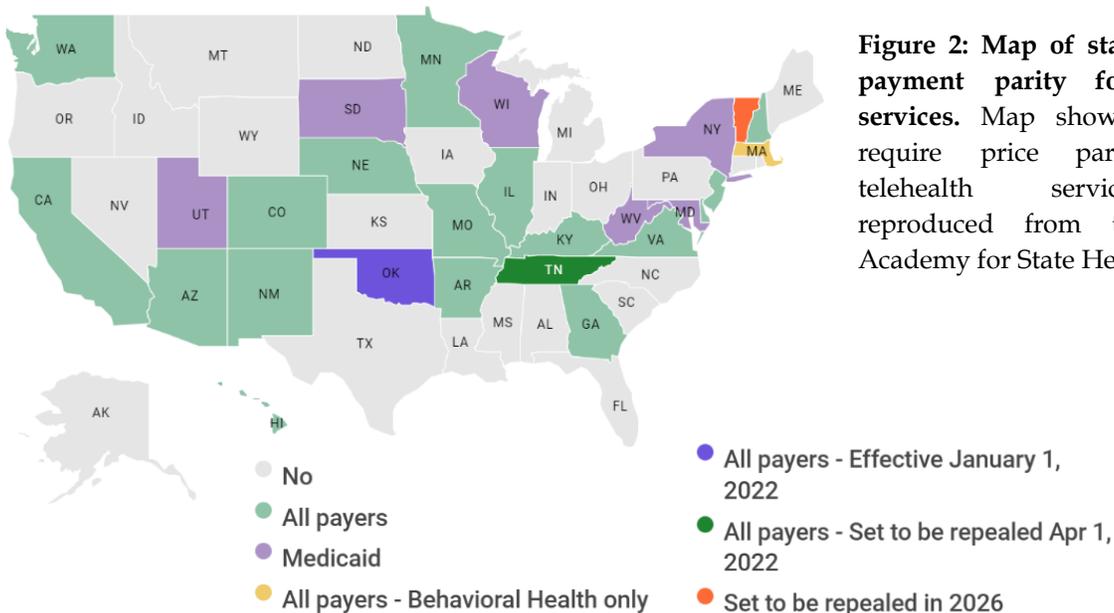**Parity in Telehealth Services and Payments**
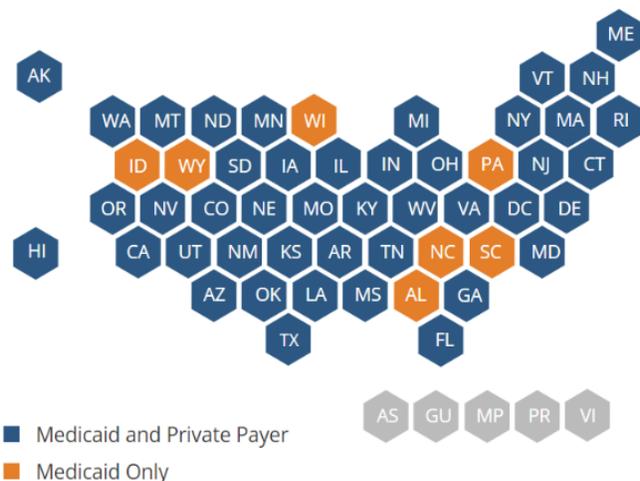
Given the reduction of in-person activities due to COVID-19, many states instituted coverage and payment parity policies that required insurances to cover telehealth visits at the same reimbursement rates they would for in-person activities. All states since 2020 have required coverage of telehealth services for either Medicaid or private payer systems. (Figure 1).[20]

Figure 1. Map of states requiring insurance coverage for telehealth services. Map shows states that require either all insurance payers or just Medicaid to cover all telehealth services. Map reproduced from the National Conference of State Legislatures.[20]

Further, more than half of states have instituted payment parity laws for telehealth for all insurers or just for Medicaid providers (Figure 2). Several states (including OR, ID, MT, ND, SC, NC, PA, RI, ME) have since let parity rules expire with the end of their statewide public health emergencies.[21]

Figure 2: Map of states requiring payment parity for telehealth services. Map shows states that require price parity for all telehealth services. Map reproduced from the National Academy for State Health Policy.[21]

Legend:
- No
- All payers
- Medicaid
- All payers - Behavioral Health only
- All payers - Effective January 1, 2022
- All payers - Set to be repealed Apr 1, 2022
- Set to be repealed in 2026

Telepsychiatry

A central Illinois study found that while rural residents had less access to telepsychiatry and mental health counseling services, they were interested in telepsychiatry. Further, overall insurance coverage for mental health counseling was a main predictor of interest for telepsychiatry. These trends were strongest among younger adults.[22] A July 2021 brief also determined that all states (minus NM and MN) covered both mental health and substance use disorder telehealth visits for Medicaid beneficiaries under standard fee-for-service providers.[23]

For more information about Mental Health during the COVID-19 pandemic, see our Science Note: COVID-19, Mental Health, and Substance Abuse.

Telemedicine in Missouri

Telehealth technology has been used in Missouri for 25 years, with dramatic increases in recent years. Some form of telehealth is available through almost all Missouri's major health systems.[23] RSMo 208.670 requires telehealth providers to ensure the same standard of care as what patients would receive in person. Due to the COVID-19 pandemic, the Centers for Medicare and Medicaid Services and Office of Civil Rights relaxed restrictions to allow reimbursement for more telehealth services, allowed out-of-state physicians to offer telehealth services, and waived potential patient privacy protection penalties for providers using telehealth to communicate with patients, which has expanded telehealth options.[24]

Cross-Border Licensure

Given that healthcare providers most often need to be registered in the state they provide services, the U.S. Centers for Medicare & Medicaid Services (CMS) have supported hospital systems and states streamlining administrative barriers toward recognition of credentials. Larger telemedicine services have consolidated efforts to handle administrative documentation, and several states have sought to further reduce regulatory barriers by reciprocal licensure recognitions for psychologists, (advance practice) registered nurses, physical therapists, and other specialists.[1] For more information on licensure reciprocity, see the Science Note: Interstate Medical Licensure Compact.

State-Level Legislation

Several bills have been introduced in the 2022 Missouri legislative session that seek to reduce regulatory burden by allowing practitioners licensed in another state to provide telehealth services (HB 2510) as well as employ the use of an adaptive questionnaire (which specializes e-visit questions for the patient) to aid in providing an informed diagnosis for prescribing a treatment (HB 2165, SB 829).

References

1. Waller, M. & Stotler, C. (2018). Telemedicine: a Primer. *Current Allergy and Asthma Reports* **18**, doi:10.1007/s11882-018-0808-4 .
2. Brustrom, J. E. & Hunter, D. C. (2001). Going the distance: how far will women travel to undergo free mammography? *Military medicine* **166**, 347-349.
3. Dullet, N. W. *et al.* (2017). Impact of a university-based outpatient telemedicine program on time savings, travel costs, and environmental pollutants. *Value in Health* **20**, 542-546.
4. Nord, G., Rising, K. L., Band, R. A., Carr, B. G. & Hollander, J. E. (2019). On-demand synchronous audio video telemedicine visits are cost effective. *The American journal of emergency medicine* **37**, 890-894 .
5. Michaud, T. L., Zhou, J., McCarthy, M. A., Siahpush, M. & Su, D. (2018). Costs of home-based telemedicine programs: a systematic review. *International journal of technology assessment in health care* **34**, 410-418.
6. *Health in Rural Missouri, Biennial Report 2018-2019*, <https://health.mo.gov/living/families/ruralhealth/pdf/biennial2019.pdf>
7. Wilcock, A. D. *et al.* (2019). Association between broadband internet availability and telemedicine use. *JAMA Internal Medicine* **179**, 1580-1582.
8. Perzynski, A. T. *et al.* (2017). Patient portals and broadband internet inequality. *Journal of the American Medical Informatics Association* **24**, 927-932.
9. Eberly, L. A. *et al.* (2020). Patient characteristics associated with telemedicine access for primary and specialty ambulatory care during the COVID-19 pandemic. *JAMA network open* **3**, e2031640-e2031640.
10. Okoye, S. M., Mulcahy, J. F., Fabius, C. D., Burgdorf, J. G. & Wolff, J. L. (2021). Neighborhood Broadband and Use of Telehealth Among Older Adults: Cross-sectional Study of National Survey Data Linked With Census Data. *J Med Internet Res* **23**, e26242, doi:10.2196/26242.
11. Koma, W., Cubanski, J., Neuman, T. (2021). *Medicare and Telehealth: Coverage and Use During the COVID-19 Pandemic and Options for the Future*, <https://www.kff.org/medicare/issue-brief/medicare-and-telehealth-coverage-and-use-during-the-covid-19-pandemic-and-options-for-the-future/>.
12. Mette, E. (2021). *How States Use ARPA Funds to Support Telehealth, Technology and Data Infrastructure*,

<https://www.nashp.org/how-states-use-arpa-funds-to-support-telehealth-technology-and-data-infrastructure/>.

13. Portnoy, J. M., Waller, M., De Lurgio, S. & Dinakar, C. (2016). Telemedicine is as effective as in-person visits for patients with asthma. *Annals of Allergy, Asthma & Immunology* **117**, 241-245.

14. Weintraub, E., Greenblatt, A. D., Chang, J., Himelhoch, S. & Welsh, C. (2018). Expanding access to buprenorphine treatment in rural areas with the use of telemedicine. *The American journal on addictions* **27**, 612-617 .

15. Lin, M.-h. *et al.* (2017). Clinical effectiveness of telemedicine for chronic heart failure: a systematic review and meta-analysis. *Journal of Investigative Medicine* **65**, 899-911.

16. Becevic, M. *et al.* (2020). Assessing impact of show-me echo on the health of missourians: two examples. *Missouri Medicine* **117**, 245 .

17. Uscher-Pines, L. *et al.* (2016). Access and quality of care in direct-to-consumer telemedicine. *Telemedicine and e-Health* **22**, 282-287 .

18. Ray, K. N. *et al.* (2019). Antibiotic prescribing during pediatric direct-to-consumer telemedicine visits. *Pediatrics* **143**.

19. Chaet, D. *et al.* Ethical practice in Telehealth and Telemedicine. *J Gen Intern Med* **32**, 1136-1140, doi:10.1007/s11606-017-4082-2 (2017).

20. *State Telehealth Policies*, <https://www.ncsl.org/research/health/state-coverage-for-telehealth-services.aspx>

21. *States Provide Payment Parity for Telehealth and In-Person Care*, (2021). <https://www.nashp.org/states-provide-payment-parity-for-telehealth-and-in-person-care/> .

22. Weinzimmer, L. G., Dalstrom, M. D., Klein, C. J., Foulger, R. & de Ramirez, S. S. (2021). The relationship between access to mental health counseling and interest in rural telehealth. *Journal of Rural Mental Health* **45**, 219-228, doi:10.1037/rmh0000179 .

23. Guth, M. *State Policies Expanding Access to Behavioral Health Care in Medicaid*, (2021). <https://www.kff.org/medicaid/issue-brief/state-policies-expanding-access-to-behavioral-health-care-in-medicaid/> .

24. Becevic, M. *et al.* (2020). Telehealth and telemedicine in Missouri. *Missouri Medicine* **117**, 228 .

25. Quinn, K., Eldridge Houser, J. L. & Kapp, J. M. (2020). Missouri Rapid Rural Population Health Response to the COVID-19 Pandemic. *Missouri medicine* **117**, 177-179.