RTRC Rural Telehealth RESEARCH CENTER

RTRC Partners:
University of Iowa
University of North Carolina
University of Southern Maine
rtrc-inquiry@uiowa.edu/www.ruraltelehealth.org
December 2024

Research & Policy Brief

The Role of Relaxed Telehealth Policy on Health Equity in Telehealth Utilization and Outcomes During the COVID-19 Public Health Emergency: A Living Systematic Review

Nicholas M. Mohr, MD, MS;[1-3] J. Priyanka Vakkalanka, PhD;[1,3] Lauren Lavin, BS;[4] Sara Ternes, MPH;[3] Heather S. Healy, MA, MLS;[5] Kimberly A. S. Merchant, MA;[4] Khyathi Gadag, BDS, MHA;[4] Marcia M Ward, PhD[4]

[1] *Department of Emergency Medicine, University of Iowa Carver College of Medicine, Iowa City, IA, USA, 52242*
[2] *Department of Anesthesia Critical Care, University of Iowa Carver College of Medicine, Iowa City, IA, USA, 52242*
[3] *Department of Epidemiology, University of Iowa College of Public Health, Iowa City, IA, 52242*
[4] *Department of Health Management and Policy, University of Iowa College of Public Health, Iowa City, IA, USA, 52242*
[5] *Hardin Library for the Health Sciences, University of Iowa, Iowa City, IA, USA, 52242*

Introduction and Purpose

The COVID-19 public health emergency (PHE) led to some of the most sweeping changes in telehealth policy, use, and research in recent history.[1,2] These changes provided natural experiments that enabled research groups to study the implications of telehealth use on access to care, patient experiences, provider experiences, clinical outcomes, and cost, specifically during the PHE. Some of these studies included analyses or sub-aims focused on health equity. While other systematic reviews focusing on telehealth related to policy changes during the PHE have been conducted, most of those systematic reviews have not focused on the ways in which telehealth ameliorated health disparities.

In 2022, the Health Resources and Services Administration (HRSA) Office for the Advancement of Telehealth funded a project to conduct living systematic reviews (LSRs) to describe the current evidence measuring the association between telehealth use during the COVID-19 PHE and health equity. LSRs were used frequently during the COVID-19 PHE to provide best-available evidence for clinical care, and increasingly, policymakers and telehealth researchers seek similar evidence on policy-relevant telehealth research from the COVID-19 PHE.[3] The purpose of this brief is to outline the findings from these LSRs and to describe the process for selecting specific content priorities.

Key Findings

- Most health equity studies of telehealth use during the COVID-19 public health emergency (PHE) focused on access and use of telehealth.
- Living systematic reviews with searches separated by six months during 2022-2023 revealed similar conclusions, suggesting that new studies were similar to older studies.
- The search strategies for three high-yield COVID-19 health equity systematic reviews have been publicly released for searches to be repeated later in the PHE.

Methods

To conduct LSRs focused on health equity, we convened an Expert Panel to select the specific questions that we would include in our formal systematic review searches. We conducted three systematic reviews, and we planned both a primary search and a secondary ("living") follow-up search. The Panel was composed of three university-based telehealth experts and two government-based telehealth experts in the HRSA Office for the Advancement of

Telehealth, and the Panel used the National Quality Forum (NQF) Framework to organize priorities.[4] The Panel conducted preliminary scoping review searches to explore available evidence before selecting top LSR priorities. Panelists were instructed to consider questions that met the following criteria: (1) policy relevant, (2) adequate literature to summarize, (3) likely to have further research published over the 2022-2023 academic year, and (4) research that could inform future research. The Expert Panel conducted an iterative process to identify research priorities in September 2022.

After LSR research priorities were identified, a health sciences librarian developed and refined formal search strategies for each of the research questions. We used standard systematic review methodology to conduct electronic searches based on review by two independent research assistants, and we summarized the results of each systematic review in a manuscript.

The initial systematic review manuscripts were submitted for publication, and a second review was conducted at least six months after the first. For these searches, a single reviewer synthesized the results of included studies found by repeating the search. The conclusion was summarized in an *RTRC Research & Policy Brief*.

Findings

Based on our criteria, our Expert Panel identified and ranked nine research questions (**Table 1**). After reviewing preliminary search results for Priority #1, we decided that insufficient data were available and therefore removed the health equity aspect so that the systematic review was more broadly focused on telehealth cost studies during the COVID-19 PHE. After reviewing preliminary search results for Priority #3, we decided that insufficient data were available for a systematic review. Thus, we conducted three systematic reviews based on priority ranking 1, 2, and 4 with the following three questions:

NQF Telehealth Domain	Potential Questions and Priority Rank
Access to Care and Technology	***(Priority Rank 2)*** How did telehealth utilization during COVID-19 compare in rural vs. urban and in other underserved communities (racial/ethnic, socioeconomic status, etc.)?
Costs, Business Models, and Logistics	***(Priority Rank 1)*** How did telehealth costs to health systems and insurers during COVID-19 compare in rural vs. urban and in other underserved communities (racial/ethnic, socioeconomic status, etc.)? ***(Priority Rank 3)*** How was telehealth use associated with workforce issues during COVID-19 compare in rural vs. urban and in other underserved communities (racial/ethnic, socioeconomic status, etc.)?
Effectiveness	How did telehealth clinical or operational effectiveness during COVID-19 compare in rural vs. urban and in other underserved communities (racial/ethnic, socioeconomic status, etc.) in the following specific clinical domains: ***(Priority Rank 4)*** Behavioral health and substance use; ***(Priority Rank 5)*** Maternal health; ***(Priority Rank 6)*** Chronic disease management, including pharmacy care; ***(Priority Rank 7)*** Geriatric care, including long-term care facilities and home-based aging care; ***(Priority Rank 8)*** Primary care; ***(Priority Rank 9)*** Emergency or unscheduled care, including emergency department, urgent care, and direct-to-consumer care; and ***(Priority Rank 10)*** Cancer care, including screening/diagnosis and cancer treatment
Experience	No questions were prioritized in this domain.

Table 1. Research questions selected and prioritized by the Expert Panel.

1. How did telehealth clinical and operational effectiveness during the COVID-19 PHE compare in rural vs. urban areas and in other underserved communities (racial/ethnic, socioeconomic status, etc.) among patients with behavioral health and substance use disorder needs (**LSR 1**)?
2. How did telehealth access or utilization during the COVID-19 PHE compare in rural vs. urban areas and in other underserved communities (racial/ethnic, socioeconomic status, etc.) (**LSR 2**)?
3. How did telehealth costs to health systems and insurers during the COVID-19 PHE compare in rural vs. urban areas and in other underserved communities (racial/ethnic, socioeconomic status, etc.) (**LSR 3**)?

Formal search strategies were developed for each of the three questions. We searched PubMed, Embase, Cochrane CENTRAL, and CINAHL, Telehealth.HHS.gov, and the Rural Health Research Gateway.[5,6] We publicly released our search strategies on searchRxiv, and we summarize our findings in **Table 2**.[7] Please refer to the full publications for details about the methods and findings of each systematic review.

Question	Primary Search Conclusion	Secondary Search Conclusion
Mental Health/Substance Use Disorder (LSR 1)	Telehealth use for these conditions increased, but existing evidence showed widening disparities in use, primarily for Black, rural, and older patients. No studies examined clinical effectiveness (search November 2022).[8]	Telehealth use was consistent with prior search. Increasingly analyses have clinical effectiveness outcomes with inconsistent results (secondary search June 2023).[9]
Access to Care (LSR 2)	Telehealth use was not associated with reduced disparities in accessing care by socially vulnerable populations (search December 2022).[10]	Telehealth use was consistent with prior search (secondary search July 2023).[11]
Cost (LSR 3)	Telehealth was associated with patient cost savings, but payor cost studies were mixed. Most studies of payor cost showed an increase in telehealth costs and no change in total payor costs. There were no studies on health equity focused on cost (search June 2023).[12]	Telehealth cost was consistent with prior search (secondary search November 2023).[13]

Table 2. Summary of conclusions from Living Systematic Review (LSR) publications on the role of relaxed telehealth policy on health equity.

The final search documentation is available publicly for future search updates, based on the Digital Object Identifiers (DOI) in **Table 3**.

Question	Search Strategy Digital Item Identifier (DOI)
Mental Health/Substance Use Disorder (LSR 1)	https://doi.org/10.1079/searchRxiv.2023.00412 https://doi.org/10.1079/searchRxiv.2023.00407 https://doi.org/10.1079/searchRxiv.2023.00405 https://doi.org/10.1079/searchRxiv.2023.00406
Access to Care (LSR 2)	https://doi.org/10.1079/searchRxiv.2023.00402 https://doi.org/10.1079/searchRxiv.2023.00403 https://doi.org/10.1079/searchRxiv.2023.00401 https://doi.org/10.1079/searchRxiv.2023.00404
Cost (LSR 3)	https://doi.org/10.1079/searchRxiv.2023.00411 https://doi.org/10.1079/searchRxiv.2023.00410 https://doi.org/10.1079/searchRxiv.2023.00409 https://doi.org/10.1079/searchRxiv.2023.00408

Table 3. Digital Object Identifiers (DOI) for search strategy available at searchRxiv.

Discussion

In the COVID-19 Telehealth LSR project, we conducted three systematic reviews to summarize the best-quality evidence surrounding three high-priority policy-relevant questions on which data had been generated during the COVID-19 PHE. We found that most of the available data on health equity focused on access and use of telehealth and that few papers on health equity summarized the clinical effectiveness of telehealth as a care modality. We found that as the pandemic progressed, more studies focused on clinical effectiveness. We also found that cost studies did not focus on health equity, but these studies concluded that during the COVID-19 PHE, patient costs associated with telehealth were largely reduced. Payor telehealth costs increased, but overall health care costs were largely unchanged.

Conducting robust systematic reviews during public health crises is an important strategy to incorporate the best available knowledge into clinical and public health practice. During the COVID-19 PHE, there were several barriers to more rapid conclusions about the effects of telehealth expansion on policy-relevant clinical effects. First, many of the administrative claims-based data sets upon which telehealth research is often based have delayed release. Because of that, even early analyses using these data sets could not be completed until 18 to 24 months after the start of the COVID-19 PHE. Second, telehealth policy change happened at the same time as significant other changes in the health system, which limited the ability to conduct studies of causal inference using observational data from this period. Third, many of the studies were early demonstration projects conducted outside the context of mature networks. These types of studies often have small samples and may observe more beneficial effects, both because of increased resources available for telehealth implementation and because of publication bias. Fourth, the peer review and publication process significantly delayed the release of research findings in peer-reviewed journals. Finally, we observed that health equity was not a focus for many of the studies included in our systematic reviews; while many studies evaluated telehealth utilization or other outcomes, data were sparse on social determinants of health and

health equity. This observation highlights a limitation in the body of evidence, and it suggests that studies of health equity be prioritized.

In conclusion, we conducted three systematic reviews with primary and secondary searches, and we identified the peer-reviewed publications that were able to best inform our understanding of the role of relaxed telehealth policy on health equity. Given that the overall findings of the reviews did not substantively change over a six-month period in 2023, we do not plan to continue iterative review of papers answering these three questions, but we have published our search strategy publicly so that other groups may continue surveillance of the biomedical literature in this policy-relevant area.

Notes

1. Doraiswamy S, Abraham A, Mamtani R, et al. Use of Telehealth During the COVID-19 Pandemic: Scoping Review. J Med Internet Res 2020; 22: e24087. DOI: 10.2196/24087.

2. Koonin LM, Hoots B, Tsang CA, et al. Trends in the Use of Telehealth During the Emergence of the COVID-19 Pandemic - United States, January-March 2020. MMWR Morb Mortal Wkly Rep 2020; 69: 1595-1599. 20201030. DOI: 10.15585/mmwr.mm6943a3.

3. Chen Z, Luo J, Li S, Xu P, Zeng L, Yu Q, Zhang L. Characteristics of Living Systematic Reviews for COVID-19. Clin Epidemiol 2022;14:925-35. DOI: 10.2147/CLEP.S367339.

4. Ward M, Melms W, Austin T, et al. Rural Telehealth and Healthcare System Readiness Measurement Framework. National Quality Forum 2021. Available at: https://rb.gy/nghjhd. Accessed 5 Dec 2023.

5. Telehealth Hub: Telehealth.hhs.gov. 2023. Available at https://telehealth.hhs.gov. Accessed 5 Dec 2023.

6. Rural Health Research Gateway. 2023. Available at https://www.ruralhealthresearch.org/. Accessed 5 Dec 2023.

7. SearchRviv. CABI Digital Library. 2023. Available at https://www.cabidigitallibrary.org/journal/searchrxiv. Accessed 5 Dec 2023.

8. Vakkalanka JP, Gadag K, Lavin L, et al. Telehealth Use and Health Equity for Mental Health and Substance Use Disorder during the COVID-19 Pandemic: A Systematic Review. Telemed J E Health 2024;30(5):1205-20.

9. Vakkalanka JP, Gadag K, Lavin L, et al. Telehealth Use and Health Equity for Mental Health and Substance Use Disorder during the COVID-19 Pandemic: An Updated Systematic Review. RTRC Research and Policy Brief. 2024 Apr. Available at https://ruraltelehealth.org/briefs/RTRC-Brief_LSR1-Brief_final_april-2024.pdf. Accessed 6 Dec 2024.

10. Ternes S, Lavin L, Vakkalanka JP, Health HS, Merchant KA, Ward MM, Mohr NM. The Role of Increasing Synchronous Telehealth Use during the COVID-19 Pandemic on Disparities in Access to Healthcare: A Systematic Review [Epub ahead of print]. J Telemed Telecare 2024:1357633X241245459.

11. Mohr NM, Ternes S, Lavin L, Healy HS, Merchant KAS, Ward MM, Vakkalanka JP. Increasing Telehealth use during the COVID-19 Public Health Emergency and Healthcare Disparities: An Updated Systematic Review. RTRC Research and Policy Brief. 2024 May. Available at https://ruraltelehealth.org/briefs/RTRC%20Brief_LSR2_2024%20May.final.pdf. Accessed 6 Dec 2024.

12. Lavin L, Gibbs H, Vakkalanka JP, Ternes S, Healy HS, Merchant KAS, Ward MM, Mohr NM. The Effect of Telehealth on Cost of Health Care During the COVID-19 Pandemic: A Systematic Review [Epub ahead of print]. Telemed J E Health 2024.

13. Lavin L, Gibbs H, Ternes, S, Healy HS, Vakkalanka JP, Merchant KAS, Ward MM, Mohr NM. The effect of Telehealth on Cost of Health Care during the COVID-19 Pandemic: An Updated Systematic Review. RTRC Research and Policy Brief. 2024 Nov. Available at https://ruraltelehealth.org/briefs/RTRC%20Brief_LSR3_Telehealth-Costs.pdf. Accessed 6 Dec 2024.

This study was supported by the Office for the Advancement of Telehealth (OAT), Health Resources and Services Administration (HRSA), U.S. Department of Health and Human Services (HHS) under Cooperative Agreement U3GRH40003. The information and conclusions in this brief are those of the authors and no inferred endorsement by OAT, HRSA, or HHS.