

Using Telemedicine Interventions During COVID-19 to Expand Care Post COVID-19

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Before COVID-19 besieged the US health care system, rheumatology services were scarce in some regions, while demand for those services increased.¹ Now, as COVID-19 leaves an indelible mark on the US economy and society, the traditional approaches to care delivery are facing unprecedented challenges. In addition to addressing the burden imposed by COVID-19, travel restrictions and limited patient mobility encumber patient-provider interaction and further complicate attempts to maintain rigorous standards of care. These challenges are significant in rheumatology, which necessitates ongoing, routine follow-up and care, catalyzing more widespread adoption of telemedicine.²⁻⁴

Telemedicine refers to the entire spectrum of activities used to deliver care at a distance, without direct physical contact with the patient.² Telemedicine is composed of both provider-to-patient and provider-to-provider communications, which can take place synchronously, asynchronously, and via virtual agents/artificial intelligence and wearable devices.² Before the emergence of COVID-19, the reported benefits of telehealth centered primarily on cost, choice and convenience.⁵ Since the start of the pandemic, the explosion in telemedicine utilization has been nothing short of remarkable, escalating in the United States from well under 100 million visits annually in the 6 years before COVID-19 to almost 1 billion visits in the year 2020 (Figure^{6,7}).

Rheumatology is an example of a medical specialty poised for widespread telemedicine adoption. Overall, the evidence base for telehealth is robust for the remote management of chronic health conditions.⁸ In rheumatology, the necessity has long existed for a novel means by which to expand access to care, owing in part to a growing deficit of providers in tandem with rural and elderly populations of patients, many of whom have limited mobility.¹ The feasibility of telemedicine in this specialty practice has likewise been confirmed, as some rheumatology follow-up visits do not require a physical exam.⁹ Furthermore, in one systematic review of 20 independent studies, telerheumatology was determined to be effective even in the diagnosis of autoimmune/inflammatory rheumatic disease.¹⁰ Additional studies have shown high levels of patient satisfaction concerning remote interventions.^{10,11} In fact,

ABSTRACT

Despite available technology and supportive evidence in the literature, the integration of telemedicine interventions in the US health care system has remained sluggish for decades. The COVID-19 pandemic catalyzed widespread utilization of virtual visits and remote monitoring in urgent, primary, and specialist care settings out of sheer necessity. Specifically, in the rheumatology subspecialty, a lack of available providers and a patient community hindered by mobility and access issues have underscored the value of telemedicine. For these reasons, a solutions-focused, multistakeholder virtual roundtable meeting convened by the Frances Hamburger Institute for Community Rheumatology (FHI) identified telemedicine as a critical area for intervention to improve the quality and cost-effectiveness of patient-centered care. Building upon stakeholder experience and published findings, the Patient-Centered Rheumatology Collaborative identified the continued deregulation of policy barriers and the facilitation of sustainable coverage and reimbursement as critical steps toward establishing a robust infrastructure for telemedicine post pandemic. FHI roundtable attendees acknowledged several remaining telemedicine access barriers concerning traditionally underserved patient populations that will need to be addressed to realize the full potential of telemedicine. These recommendations are in concordance with those of other recent consensus groups, and they legitimize the formation of collaborative frameworks among payers, providers, and other key stakeholders to advance care in rheumatology.

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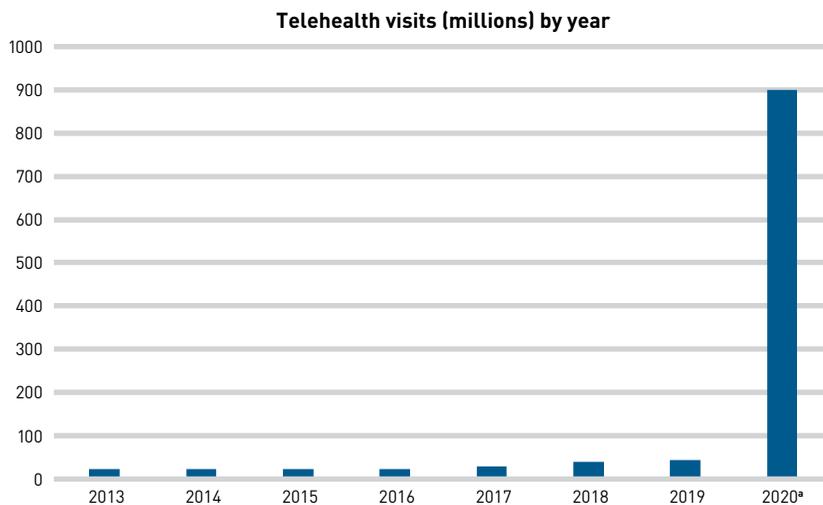
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TAKEAWAY POINTS

The Patient-Centered Rheumatology Collaborative identified several critical areas for further intervention to improve the delivery of high-quality, patient-centered care during the COVID-19 pandemic and beyond.

- ▶ Telemedicine stood out as an underutilized intervention in the US health care system, with the capacity to facilitate access to care, potentiate the delivery of mental health services, and mitigate costs for all stakeholders.
- ▶ The COVID-19 pandemic revealed a myriad of specific competencies and inefficiencies in delivering health care within the United States, and attendees of the roundtable noted that telemedicine could address many of the latter.
- ▶ The value derived from telemedicine during the height of the pandemic placed precedence on seeking means by which to cement its place in the provision of care in the future.

FIGURE. Annual US Telemedicine Visits, 2013-2020^{6,7}



*Estimated.

the effectiveness of telemedicine has been established to be at least comparable with standard face-to-face approaches across several controlled trials, exemplifying the utility of digital health initiatives for delivering consultation and treatment and for monitoring disease activity in rheumatology.¹² The American College of Rheumatology (ACR) issued a position statement in support of expanding telemedicine adoption and has coordinated guidance on the implementation, in remote settings, of measures of rheumatoid arthritis disease activity and of functional status assessment.^{13,14} A subsequent expert panel convened by ACR determined that these measures can be adequately adapted for use in telerheumatology to support high-quality clinical care.¹²

Challenges exist in ensuring equitable access to digital health, particularly in underserved populations in which internet connectivity, devices, and technology literacy may be limited. These influences and desired outcomes were addressed in a solutions-focused

roundtable convened by the Frances Hamburger Institute for Community Rheumatology (FHI) in June 2020. The FHI is dedicated to carrying out initiatives that provide insights and raise awareness about improvements needed in payment and formulary policies, outcomes research, and treatment for individuals with rheumatologic and related diseases. Attending advisors included key opinion leaders within the rheumatology discipline and the greater health care community; they encompassed experts in biomedical innovation, data science, diagnostics, government policy, and mental health patient advocacy, as well as payers, physicians, allied health care providers, and researchers. The pertinent findings of FHI's Patient-Centered Rheumatology Collaborative on telemedicine are presented herein.

Findings

FHI's Patient-Centered Rheumatology Collaborative identified telemedicine as an underutilized intervention in the US health care system, with the capacity to facilitate access to care, potentiate the delivery of mental health services, and mitigate costs for all stakeholders. The COVID-19 pandemic revealed a myriad of specific competencies and inefficiencies in delivering health care within the United States, and the FHI roundtable noted that telemedicine could address many of these. Before the arrival of SARS-CoV-2, acceptance and adoption of telemedicine had been historically limited; however, FHI roundtable attendees noted the value derived from telemedicine during the height of the pandemic and placed precedence

on seeking means by which to cement its place in the provision of care in the future. Deregulating policy barriers to the uptake of telemedicine and facilitating sustainable coverage and reimbursement for telemedicine represent critical steps identified toward that end. The FHI advisory board collectively acknowledged these and other proactive considerations as crucial to establishing a robust infrastructure for telemedicine in the future of rheumatology and health care in general.

Telemedicine Adoption Post Pandemic

After social distancing and stay-at-home orders were enacted across the United States in March 2020, telemedicine provided an immediate opportunity to maintain access and continuity of care while reducing the potential for community and nosocomial viral spread.² Telemedicine is ideally suited to meet the demands of patient care while at the same time reducing virus transmission,

stretching human and technical resources and protecting patients and health care practitioners (HCPs) alike.² Recognizing an immediate need and a readily available solution, the health care community, including rheumatology professionals, quickly mobilized resources. As evidence of this nearly instantaneous uptake of telemedicine, advisors in attendance at the FHI roundtable noted a transition from minimal adoption before the pandemic to schedules populated almost entirely with virtual visits, a change that happened practically overnight.

The initial surge in outpatient visits represented the first phase (phase 1) of telemedicine utilization during the pandemic (**eAppendix Figure** [available at ajmc.com]). A recent survey of HCPs and accountable care organization and health system representatives supported this model, with telemedicine being cited as the leading strategy for managing both well visits and increased overall visits during COVID-19.¹⁵ The importance of telemedicine to the rheumatology community during phase 1 was evident, with a surge in inpatient telemedicine utilization representing phase 2. However, the crucial juncture for telemedicine in rheumatology is in our current phase, phase 3—meaning postpandemic recovery—and beyond.²

FHI roundtable attendees noted widespread adherence to telemedicine visits among the most at-risk patients, which is in keeping with findings from the literature showing that patient satisfaction is associated with both increased physical distance from the provider and disease severity.⁹⁻¹¹ Furthermore, the patient-centered manner (focusing on the patient and their individual health care needs) in which telemedicine is currently being deployed emphasizes human interaction in a system where HCPs are more accessible to their patients via nearly immediate, on-demand care. Recent reports of electronic health record–based screening with COVID-19–specific tools to support outbreak management, including scripted triaging, electronic check-in, standard ordering and documentation, secure messaging, real-time data analytics, and telemedicine capabilities, are encouraging and have demonstrated how patient-facing technology can optimize care.¹⁶

Deregulating Policy Barriers to Telemedicine

Telemedicine has existed in various forms for several decades, with increased attention accompanying the evolution of technology and the rise of comprehensive care. However, its adoption has been beset by resistance in a system founded on face-to-face contact and in which patient-provider rapport is deemed important. Moreover, with limited interest on the part of providers, minimal effort has been expended on addressing the policy and administrative barriers that have entangled and hindered the uptake of telemedicine.

Before pandemic-driven mobilization, policy barriers to telemedicine existed at several levels, the most basic being licensure and credentialing. Licensing is under the purview of states to regulate and, in most states, the HCP providing care must be licensed in the state where the patient is physically located.¹⁷ At the same time, physicians often must also be credentialed at the hospital where the patient's care originates. Although CMS and the Joint Commission

have created guidelines that allow clinics to credential telemedicine entities by proxy, adherence to these guidelines is optional, and a hospital may require full credentialing.¹⁸

Another policy safeguard that remains a stumbling block for telemedicine is the Health Insurance Portability and Accountability Act (HIPAA). Although HIPAA does not have specific requirements for telemedicine, vendors of these services may need to implement additional precautionary protocols to protect health information. Furthermore, states often have additional privacy and security laws specific to them. Data security appears to be increasingly imperiled in the COVID-19 pandemic era, with providers seeing patients via a variety of devices in a broader array of locations.¹⁹ Because health care data breaches have been growing steadily since 2010, cybersecurity and the protection of information are issues that will need to be addressed to bolster the sustainability of telemedicine interventions.²⁰

Facilitating Sustainable Coverage and Reimbursement for Telemedicine

The foundational elements for the reimbursement of telemedicine have existed for several years—including a “-TH” suffix for *International Classification of Diseases, Tenth Revision* reimbursement codes that involve telehealth—but the intricacies of telemedicine reimbursement were fraught with barriers prior to this pandemic. Coverage of telemedicine services conducted at locations other than typical care sites presents challenges. Federal and state regulators have contended with reimbursement for services delivered to patients in their homes from providers who are in their own homes, with CMS spearheading the effort for coverage of home health care in April 2020.²¹ Temporary regulatory waivers and new rules are allowing providers to bill for telehealth visits at the same rate as in-person visits among new and established patients receiving care remotely in their homes.²² The agency also finalized telehealth expansion for rural areas in Medicare Advantage by relaxing requirements for how many patients must live within a specific geographic range to qualify for the Medicare Advantage plan.²³

Addressing these challenges remains primarily dependent on state and federal regulations that set coverage requirements. Because CMS has already demonstrated a willingness to make many of the COVID-19–era telemedicine flexibilities permanent, the onus will be on private payers to progress their telehealth strategies in step with federal policy makers. Member cost sharing for telemedicine interventions will be another factor for payers to consider, with patient out-of-pocket contribution set at a manageable level commensurate with the services received. Finally, although health plans appear largely supportive of recent increases in telemedicine utilization, payer leadership in attendance at the FHI roundtable pointed out that quality of care is critical in its future widespread adoption.

Telemedicine Infrastructure for the Future

Payers, providers, and other health care stakeholders agree that the role of telemedicine will continue to grow, even as the United

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States continues to emerge from the COVID-19 pandemic.²⁴ However, changes to pre-pandemic care delivery infrastructure are required for an efficient transition from temporary policies and procedures to a new era of digital health.² These changes are advantageous and necessary given the stressors that will likely affect health care going forward. The aforementioned deferral of care amid the pandemic crisis may result in downstream consequences during the post-pandemic recovery phase.² It is imperative for health care stakeholders to create a robust infrastructure to facilitate more efficient use of both technology and personnel. New technology will require expanding skill sets in practices, necessitating training and education to provide continuity. Whereas providers in larger health systems and academic settings may have access to institutional support in these endeavors, community practice-based solutions may need to be developed to supplement the efforts of smaller practices.

The present is the most suitable time to establish supportable, secure systems that properly preserve data security and offer sustained technical support for post-pandemic care. Advisors in attendance at the Patient-Centered Rheumatology Collaborative roundtable noted that providers who already had a structure or plan before the pandemic were able to transition smoothly to telemedicine adoption during the pandemic. Payers and health systems are positioned to survey providers and assess readiness for future telemedicine incorporation, with support available for those who lack adequate capabilities. Furthermore, during the pandemic, payers were able to partner with clinical systems to identify at-risk populations with chronic diseases that could exacerbate COVID-19–related outcomes, as well as underserved groups according to social determinants of health measures such as the area deprivation index.^{25,26} Such collaborative efforts will need to continue to encourage the vigorous deployment of telemedicine to patients requiring specialized attention, including the elderly and other populations in whom isolation and its consequences can adversely affect mental health.²⁷ The resources and reach of payers and health system partners are likewise crucial for addressing barriers related to patient internet connectivity and the interoperability of telemedicine technologies.⁵

From a comprehensive perspective, the most logical approach to establishing a robust infrastructure for telemedicine in the future is to extend and operationalize the changes made during the pandemic that broadly and rapidly mobilize its adoption.² As previously noted by FHI roundtable attendees, regulatory policies and reimbursement models must be reevaluated from multiple stakeholder perspectives. From a more fundamental standpoint, payers and HCPs alike need to revisit historical norms to determine the required level of in-person patient interactions and embrace the digital health environment.

Conclusions

Overall, FHI's Patient-Centered Rheumatology Collaborative reported a high level of patient satisfaction with telemedicine interventions

but indicated that utilization has waned as practices opened and patient fears subsided. Still, FHI roundtable attendees largely maintained that telemedicine is here to stay and anticipated its continued role in patient care in some capacity going forward. The COVID-19 pandemic has revealed efficiencies and limitations in the application of telerheumatology that can be used to accelerate its effective and efficient utilization. Now that the convention of hands-on care has been challenged by real-world evidence of digital medicine successes, health care leadership must move forward in a concerted effort to address remaining barriers and bolster the safe, effective, and equitable integration of telemedicine in the United States. ■

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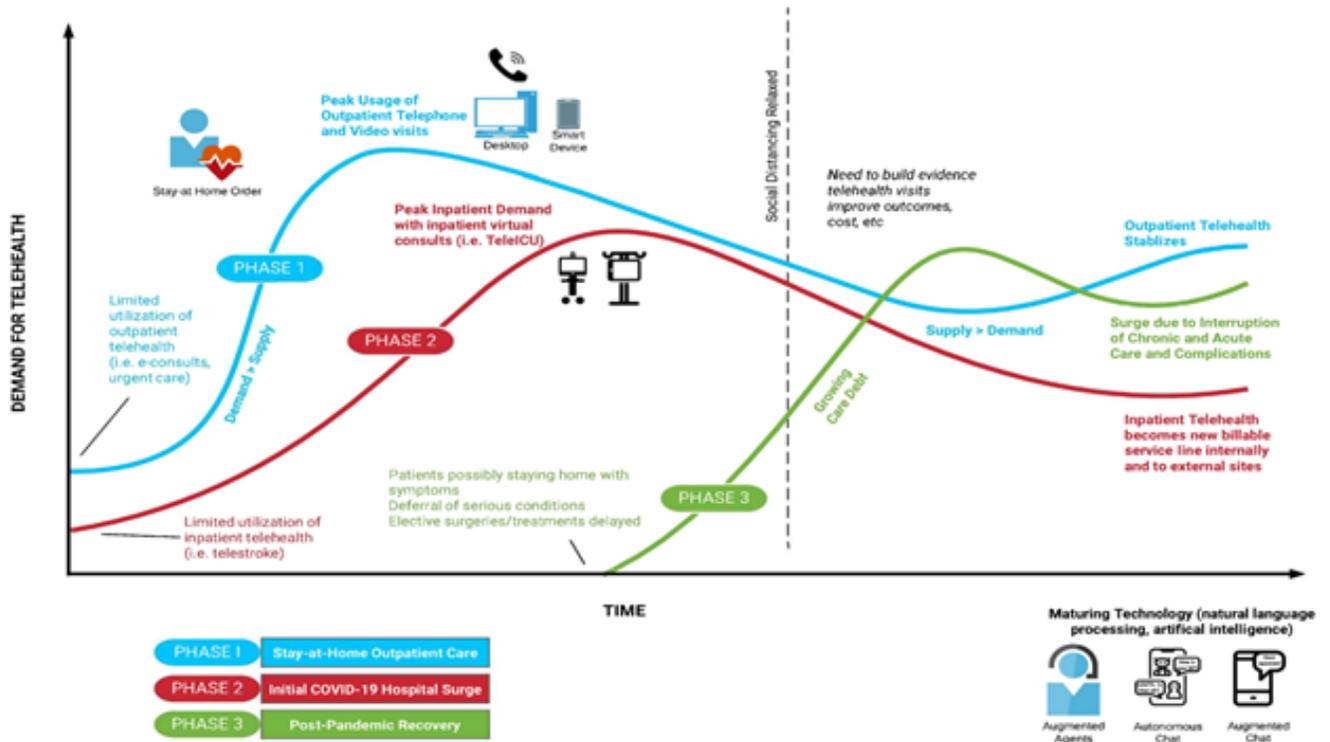
REFERENCES

1. Battafarano D, Monrad S, Fitzgerald J, et al. 2015 ACR/ARHP workforce study in the United States: adult rheumatologist supply and demand projections for 2015-2030. *Arthritis Rheumatol*. 2016;68(suppl 10):Abstract 93. Accessed February 12, 2022. <https://acrabstracts.org/abstract/2015-acrarhp-workforce-study-in-the-united-states-adult-rheumatologist-supply-and-demand-projections-for-2015-2030/>
2. Wosik J, Fudim M, Cameron B, et al. Telehealth transformation: COVID-19 and the rise of virtual care. *J Am Med Inform Assoc*. 2020;27(6):957-962. doi:10.1093/jamia/ocaa067
3. Augenstein J. Opportunities to expand telehealth use amid the coronavirus pandemic. *Health Affairs*. March 16, 2020. doi:10.1377/forefront.20200315.319008
4. Galewitz P. Telemedicine surges, fueled by coronavirus fears and shift in payment rules. Kaiser Health News. March 27, 2020. Accessed February 12, 2022 <https://khn.org/news/telemedicine-surges-fueled-by-coronavirus-fears-and-shift-in-payment-rules/>
5. Fisk M, Livingstone A, Pit SW. Telehealth in the context of COVID-19: changing perspectives in Australia, the United Kingdom, and the United States. *J Med Internet Res*. 2020;22(6):e19264. doi:10.2196/19264
6. Number of telehealth visits in the U.S. from 2013 to 2022. Statista. Accessed February 12, 2022. <https://www.statista.com/statistics/820756/number-of-telehealth-visits-in-us/>
7. Drees J. Led by COVID-19 surge, virtual visits will top 1B in 2020: report. Becker's Hospital Review. April 3, 2020. Accessed February 11, 2022. <https://www.beckershospitalreview.com/telehealth/led-by-covid-19-surge-virtual-visits-will-surpass-1b-in-2020-report.html>
8. McLean S, Sheikh A, Cresswell K, et al. The impact of telehealthcare on the quality and safety of care: a systematic overview. *PLoS One*. 2013;8(8):e71238. doi:10.1371/journal.pone.0071238

9. Bernstein S. Rheumatologists can now treat patients via telemedicine. *The Rheumatologist*. January 19, 2018. Accessed February 13, 2022. <https://www.the-rheumatologist.org/article/rheumatologists-can-now-treat-patients-via-telemedicine/>
10. McDougall JA, Ferucci ED, Glover J, Fraenkel L. Telerheumatology: a systematic review. *Arthritis Care Res (Hoboken)*. 2017;69(10):1546-1557. doi:10.1002/acr.23153
11. Wood PR, Caplan L. Outcomes, satisfaction, and costs of a rheumatology telemedicine program: a longitudinal evaluation. *J Clin Rheumatol*. 2019;25(1):41-44. doi:10.1097/RHU.0000000000000778
12. Piga M, Cangemi I, Mathieu A, Cauti A. Telemedicine for patients with rheumatic diseases: systematic review and proposal for research agenda. *Semin Arthritis Rheum*. 2017;47(1):121-128. doi:10.1016/j.semarthrit.2017.03.014
13. Position statement on telemedicine. American College of Rheumatology. Accessed February 19, 2022. <https://www.rheumatology.org/Portals/0/Files/Telemedicine-Position-Statement.pdf>
14. England BR, Barber CEH, Bergman M, Ranganath VK, Suter LG, Michaud K. Brief report: adaptation of American College of Rheumatology rheumatoid arthritis disease activity and functional status measures for telehealth visits. *Arthritis Care Res (Hoboken)*. 2021;73(12):1809-1814. doi:10.1002/acr.24429
15. Healthcare industry's response to COVID-19. Insights Xtelligent Healthcare Media. Accessed February 8, 2022. <https://www.xtelligentmedia.com/insights>
16. Reeves JJ, Hollandsworth HM, Torriani EJ, et al. Rapid response to COVID-19: health informatics support for outbreak management in an academic health system. *J Am Med Inform Assoc*. 2020;27(6):853-859. doi:10.1093/jamia/ocaa037
17. State telehealth laws and reimbursement policies report, fall 2022. Center for Connected Health Policy. October 2022. Accessed December 22, 2022. <https://www.cchpca.org/resources/state-telehealth-laws-and-reimbursement-policies-report-fall-2022/>
18. Telehealth. CMS. Updated December 1, 2021. Accessed February 3, 2022. <https://www.cms.gov/Medicare/Medicare-General-information/telehealth/>
19. Your patient is logging on now: the risks and benefits of telehealth in the future of healthcare. The Doctors Company. 2020. Accessed February 11, 2022. https://www.thedoctors.com/siteassets/pdfs/12482_telehealth_whitepaper_080420_f.pdf
20. 2019 healthcare data breach report. HIPAA Journal. February 13, 2020. Accessed February 3, 2022. <https://www.hipaajournal.com/2019-healthcare-data-breach-report/>
21. Trump administration makes sweeping regulatory changes to help U.S. healthcare system address COVID-19 patient surge. News release. CMS; March 30, 2020. Accessed February 12, 2022. <https://www.cms.gov/newsroom/press-releases/trump-administration-makes-sweeping-regulatory-changes-help-us-healthcare-system-address-covid-19>
22. New York Medicaid still holding onto pandemic-era telehealth expansions even after COVID-19 waivers disappear. *The National Law Review*. July 22, 2021. Accessed February 12, 2022. <https://www.natlawreview.com/article/new-york-medicaid-still-holding-pandemic-era-telehealth-expansions-even-after-covid>
23. CMS, HHS. Medicare program; contract year 2021 policy and technical changes to the Medicare Advantage program, Medicare prescription drug benefit program, and Medicare cost plan program. *Fed Regist*. 2020;85(106):33796-33911.
24. Sokol E. Telehealth will continue to grow after coronavirus pandemic. mHealth Intelligence. June 12, 2020. Accessed February 12, 2022. <https://mhealthintelligence.com/news/telehealth-will-continue-to-grow-after-coronavirus-pandemic>
25. Richardson S, Hirsch JS, Narasimhan M, et al. Presenting characteristics, comorbidities, and outcomes among 5700 patients hospitalized with COVID-19 in the New York City area. *JAMA*. 2020;323(20):2052-2059. doi:10.1001/jama.2020.6775
26. Khanna N, Klyshnenkova E. COVID 19 hotspots and vulnerable populations identified by area deprivation index mapping. University of Michigan Deep Blue Documents. May 11, 2020. Accessed February 25, 2022. <https://deepblue.lib.umich.edu/handle/2027.42/155341>
27. Torous J, Jän Myrick K, Raueo-Ricupero N, Firth J. Digital mental health and COVID-19: using technology today to accelerate the curve on access and quality tomorrow. *JMIR Ment Health*. 2020;7(3):e18848. doi:10.2196/18848

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eAppendix Figure. Three-Phase Model of Telemedicine Adoption Before, During, and After the COVID-19 Pandemic



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ICU, intensive care unit.