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Perspective

Telehealth in response to the COVID-19 pandemic: Implications for rural health disparities

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ABSTRACT

Telehealth programs have long held promise for addressing rural health disparities perpetuated by inadequate healthcare access. The COVID-19 (coronavirus disease 2019) pandemic and accompanying social distancing measures have hastened the implementation of telehealth programs in hospital systems around the globe. Here, we provide specific examples of telehealth efforts that have been implemented in a large rural healthcare system in response to the pandemic, and further describe how the massive shift to telehealth and reliance on virtual connections in these times of social isolation may impact rural health disparities for those without access to necessary broadband to deploy digital technologies. Finally, we provide recommendations for researchers and policymakers to ensure that telehealth initiatives do not amplify existing health disparities experienced by those living in rural communities.

Key words: COVID-19, telehealth, telemedicine, broadband, rural

INTRODUCTION

Inequities in education, poverty, unemployment, economic opportunities, and other social determinants contribute to persistent health disparities between those living in America's rural and urban regions.[1] Indeed, differences in life expectancy between rural and urban Americans has been widening over the past several decades, with rural Americans dying on average 2 years earlier than their urban counterparts.[1] Rural communities face lower access to healthcare, health services, and health insurance compared with urban settings.[2,3] Moreover, America's rural hospitals have less capacity in terms of intensive care unit beds and infrastructure, which is compounded by recent rural hospital closures and continued vulnerability to closure among remaining rural hospitals.[4]

These characteristics and circumstances present unique challenges for rural communities in response to the coronavirus disease 2019 (COVID-19) pandemic. Rural hospital systems are managing chronic disease burden in an aging population with already limited access to healthcare providers, which is even more pronounced with current social distancing measures. Overall, rural populations are older and sicker relative to their urban counterparts, and experience higher rates of cigarette smoking, obesity, diabetes, and hypertension.[5] These preexisting health conditions, coupled with lower access to health care and higher poverty rates,[5] place rural communities at particularly high risk for experiencing complications from COVID-19.[6] Despite these vulnerabilities, testing for COVID-19 has been far lower in rural regions; thus, disproportionately fewer rural cases are being detected.[7] Furthermore, while the death

toll of COVID-19 in rural areas has not been as pronounced as that in more densely populated urban settings,[8] given the aforementioned inequalities, the impact of the disease could ultimately be more harmful. These consequences extend beyond the direct impact of COVID-19 and encompass the broader societal implications in rural areas, where poverty and loneliness have already led to devastating outcomes.[9–11] As such, those hit hardest by implications of the pandemic are likely to be those already experiencing economic instability and other ills that disproportionately affect marginalized communities.[12]

Despite these challenges, rural health systems and providers have responded to a rapidly evolving crisis. Telehealth is one strategy that has been quickly deployed in response to the pandemic, yet may also have far reaching benefits for rural health.

TELEHEALTH INITIATIVES

Telehealth programs have long held promise for addressing health disparities perpetuated by inadequate healthcare access; although the uptake of telehealth programs in practice has been quite limited until recently.[13] Indeed, the COVID-19 pandemic and accompanying social distancing measures have hastened the implementation of telehealth programs in hospital systems around the globe. This rapid transition to telehealth has been bolstered by the revisions to the Centers for Medicare and Medicaid Services waiver structure,[14] which have expanded reimbursements for telehealth services in response to COVID-19. With these changes, many of the previous obstacles to telehealth implementation (eg, limited reimbursement and privacy concerns), which restricted full penetrance of these technologies into practice,[15] have been temporarily loosened in an effort to prevent the transmission of COVID-19. Telehealth programs are now being utilized to provide continued access to care, and to manage the potential surge in visits from virus-related concerns, and the closure of outpatient offices.[16]

In response to the current COVID-19 pandemic, Munson Healthcare (MHC), a rural hospital system in northern Michigan, like many others around the country, has urgently worked to expand telehealth services. As such, because the Michigan stay-at-home order was issued on March 23, 2020, MHC has reduced in-person visits and has implemented multiple telehealth programs to address patients' needs and mitigate the adverse impact on the health of patients, providers, and staff. Specifically, 530 providers in 75 ambulatory practices in the MHC health system network are now offering virtual telemedicine visits to patients, via video or telephonic visits, a complete and unprecedented health system transformation when one considers the fact that almost none of these rural providers participated in telehealth prior to this pandemic. More than 14 000 visits have occurred via video platforms in the past 6 weeks, providing safe access to care while also protecting providers and care teams.

Having successfully implemented telehealth throughout ambulatory practices, MHC is now exploring how virtual services can be used to efficiently screen and triage patients before they arrive to the hospital: efforts that are both patient-centered and conducive to social distancing, and can serve to protect patients, clinicians, and the community from exposure.[17] Moreover, these digital screening platforms with expert system enhancement can facilitate syndromic surveillance efforts for epidemiologic investigations. Telehealth platforms are currently being used to screen patients presenting to the emergency department, in an effort to reduce contact with healthcare staff. As such, patients with nonurgent complaints are being asked to use their own smartphones or tablets to complete a video visit with an emergency department provider from their car outside of the hospital, limiting exposure for patients and providers, and reducing unnecessary personal protective equipment usage. Telehealth approaches are also being used within COVID-designated inpatient hospital rooms to facilitate communication with consulting providers, support services such as pharmacy and dietary, and the patient's family.

Telehealth programs are also serving to protect healthcare workers by allowing providers to work remotely, which limits exposure and lowers risk, especially for vulnerable workers. This approach is particularly beneficial, given that demand for N95 respirator masks and other personal protective equipment will likely continue to exceed supply.[18] We are also beginning to reintroduce healthcare students to our hospital settings and ambulatory practices; connecting students with patients remotely and allowing virtual rounding access to high-risk settings on COVID units without the need for personal protective equipment. In these ways, expanding telehealth will extend our supply of critical supplies and will help to ensure an adequate healthcare workforce. Finally, MHC is planning to implement telehealth solutions in its 4 long-term care sites, so those patients can connect with specialists via video visits. This reduces the need for patients to travel to provider practices for care and could reduce emergency room visits, and thus reduce potential COVID-19 exposure.

BROADBAND ACCESS CHALLENGES

Indeed, telehealth initiatives are proving essential in efforts to mitigate the spread of COVID-19 among patients and providers and will likely continue to be used to mitigate distance and access challenges in rural and remote settings long after the pandemic has abated. However, telehealth programs require adequate broadband access, which is often limited in rural and underserved settings. In fact, 33% of rural Americans lack access to high-speed broadband Internet to support video-based telehealth visits,[19] defined by the Federal Communications Commission as download speeds of at least 25 Mbps. In Michigan, nearly 40% of rural residents lack access to high-speed broadband Internet, compared with only 3% of those residing in Michigan's urban areas.[20] The massive shift to telehealth and reliance on virtual connections in these times of social isolation may have created an additional health disparity for the millions of rural Americans without access to necessary broadband to deploy digital technologies. America's digitally isolated regions with limited broadband access also have a higher prevalence of obesity, diabetes, and chronic diseases, suggesting a double burden where those with the lowest connectivity have the highest need.[21] Moreover, in a time of widespread social distancing, the lack of broadband access prevents individuals from connecting online with family and friends, and thus may contribute to other adverse health outcomes in rural regions. To overcome broadband access issues in our rural region, MHC is offering telephonic visits as a replacement for video visits. These efforts have been facilitated by similar reimbursement structure allowances. Additionally, options for patients to drive to a designated location to complete a video visit in their car or at a MHC clinic with reliable Internet are being explored.

CONCLUSION

The rapid implementation of telehealth programs in rural areas in response to the COVID-19 pandemic holds tremendous potential

for addressing rural health disparities. Overcoming issues in broadband access in rural settings, which limit the reach and effectiveness of telehealth initiatives, must be prioritized. Further, evaluation of clinical care outcomes and identification of barriers to telehealth implementation are essential to improve the utility of these programs going forward. Given the substantial investment in infrastructure and training, rural health systems should also consider a comprehensive strategy to ensure sustainability of telehealth programs following the COVID-19 pandemic, which needs to include lobbying for continuing third-party reimbursement for these services. Finally, research to investigate unintended consequences of telehealth initiatives in response to the COVID-19 pandemic are also needed to ensure that these initiatives do not amplify existing health disparities experienced by those living in rural communities.

Many lessons will inevitably be learned from the COVID-19 crisis. Already, the pandemic has exposed underlying health disparities while also fostering innovative solutions to address health needs in these trying times. Thus, it is our hope that through this crisis we may be able to envision and work toward a more equitable world.

AUTHOR CONTRIBUTIONS

All author contributed substantially to the conception, drafting and editing of the manuscript and approved the final version for submission.

CONFLICT OF INTEREST STATEMENT

None declared.

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