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Research Letters

Recommendations to Enhance Telemedicine in Nursing Homes in the Age of COVID-19

Nursing homes (NHs) have been at the frontline of the COVID-19 pandemic.[1,2] Despite representing <1% of the US population, NH residents account for nearly 33% of all COVID-19 deaths.[3] The Centers for Medicare & Medicaid Services implemented sweeping telemedicine regulatory relief in an effort to reduce COVID-19 spread in NHs. Telemedicine activity in US NHs has expanded dramatically[4] but has not been without its challenges. Herein, we report 12 recommendations to enhance and sustain telemedicine (Table 1) from a telemedicine adoption study, certified as quality improvement by the UW-Madison Health Sciences IRB.

A convenience sample of NHs (n = 9) in south-central Wisconsin were recruited based on geography (rural vs urban), ownership, and profit status. Each NH had newly adopted or significantly expanded telemedicine during the COVID-19 pandemic. Key informants (n = 27) involved in the structure and conduct of telemedicine encounters were interviewed or surveyed including NH staff, long-term care advanced practice providers, and regional health care subspecialist providers.

Study participants identified 5 technology enhancement needs, including (1) improvements to connectivity and bandwidth; (2) an increased supply of telemedicine devices; (3) availability of sound amplification devices; (4) availability of telehealth-ready stethoscopes, and (5) enhancements to video quality. During the QI project, Internet connectivity and bandwidth as well as TM device availability improved in all participating NHs, although technology bottlenecks remained a problem in several facilities after the project. The volume capabilities of the telemedicine devices employed in NHs was often inadequate, and participants identified secondary sound amplification devices as a critical need for encounters with hearing-impaired residents. Although many telemedicine encounters did not require a heart or lung examination, advanced practice provider participants noted that having a telehealth-ready stethoscope available would further alleviate the need for face-to-face encounters when encountered with a scheduling conflict or a facility outbreak. Some respondents noted the video quality on existing telemedicine devices was inadequate for performing skin and wound assessments and expressed a desire for high-resolution camera/video devices in residents with these issues.

Study participants identified 3 scheduling enhancement needs, including (1) availability of a common scheduling system, (2) centralization of NH scheduling responsibilities, and (3) development of blocked telemedicine scheduling. Successfully scheduling a telemedicine encounter requires coordinating the provider, NH staff, and resident schedules and ensuring availability of telemedicine equipment. A common scheduling system that was used and viewable by all the participants could potentially reduce the frequency of calls and rescheduled appointments. In lieu of a technology fix, participants noted that significant scheduling efficiencies could be achieved by centralizing scheduling-related tasks to a limited number of trained individuals, who were given sufficient time to complete this work. Participants also noted that scheduling activities was improved by developing fixed times during which providers were allowed to conduct their telemedicine encounters. Although this enhancement has the potential to conflict with provider schedules, blocked scheduling greatly reduces NH workflow disruptions, and most facilities were able to negotiate blocks of time that were mutually acceptable to their providers.

Deficiencies in information exchange was identified as a common problem area by study participants and has been reported by others.[5] Giving providers and their clinic staff remote access to NH electronic health record would facilitate telemedicine encounter preparation and precharting activities. Establishing standard procedures for information exchange that include the type and quality of information that should be collected, how it is shared, and who is responsible for these tasks was also identified as a critical need by study participants.

The individual facilitating the telemedicine encounter was another problem area identified by study participants. Although nonclinical staff were capable of participating in scheduling and setup of equipment, telemedicine encounters facilitated by these individuals were limited by poorer information exchange and reduced capacity to conduct key aspects of the physical examination. Centralizing telemedicine encounter facilitation to a limited number of trained clinical staff enhanced interprofessional rapport and improved the overall quality and efficiency of these encounters.

Implementing these 12 recommendations come with costs that must be offset if telemedicine is to be sustained. Gillespie et al[6] have previously argued that existing telemedicine regulatory waivers implemented in response to COVID-19 must be made permanent. Provider and NH reimbursement models will also need to be modified in order to correctly incentivize provider use of the telemedicine modality and provide facilities with the resources to purchase and maintain telemedicine equipment as well as hire and retain staff responsible for critical telemedicine tasks. Although navigating this path forward will not be

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Table 1
Enhancements Needed to Make Nursing Home Telemedicine Encounters Easier and More Effective

Equipment and Infrastructure
1. NHs should invest in the infrastructure necessary to support telemedicine encounters through improved connectivity and bandwidth
2. NHs should invest in dedicated and adequate as well as appropriate equipment to conduct telemedicine encounters (eg, laptop or tablet)
3. NHs should have ready access to secondary sound amplification devices to use during telemedicine encounters with hearing-impaired residents
4. NHs should have ready access to a telehealth-enabled stethoscope that allows providers to remotely perform a heart and/or lung examination when necessary
5. NHs should have access to high-resolution video or camera equipment that enhances remote assessment of skin and wound findings
Scheduling
1. NHs should develop or invest in a common platform that allows key individuals to schedule telemedicine encounters
2. NHs should centralize scheduling of telemedicine encounters to a core individual(s)
3. NHs should adopt telemedicine block schedules that factor in sufficient time before and after encounters for interprofessional information exchange and care-planning
Information Exchange
1. NHs should provide clinicians and their staff with remote access to NH electronic health records
2. NHs and providers that engage in telemedicine encounters should develop and implement procedures and staff training that standardize (1) the types of information shared between NH staff and providers, (2) how these types of information should be shared, and (3) who is responsible for these information sharing tasks
Telemedicine Encounter Facilitator
1. NHs should identify and dedicate staff to facilitate telemedicine encounters
2. The telemedicine encounter facilitator should be a clinician (I.e., RN or LPN)

easy, the potential benefits of sustaining the current telemedicine expansion[7,8] are too great to go back to the pre-COVID status quo.

References

1. Arons MM, Hatfield KM, Reddy SC, et al. Presymptomatic SARS-CoV-2 infections and transmission in a skilled nursing facility. N Engl J Med 2020;382:2081–2090.
2. McMichael TM, Clark S, Pogosjans S, et al. COVID-19 in a long-term care facility—King County, Washington, February 27–March 9, 2020. MMWR Morb Mortal Wkly Rep 2020;69:339–342.
3. Shen K, Loomer L, Abrams H, et al. Estimates of COVID-19 cases and deaths among nursing home residents not reported in federal data. JAMA Netw Open 2021;4:e2122885.
4. Alexander GL, Powell KR, Deroche CB. An evaluation of telehealth expansion in U.S. nursing homes. J Am Med Inform Assoc 2021;28:342–348.
5. Jen SP, Bui A, Leonard SD. Maximizing efficiency of telemedicine in the skilled nursing facility during the coronavirus disease 2019 pandemic. J Am Med Dir Assoc 2021;22:1146–1148.e2.
6. Gillespie SM, Handler SM, Bardakh A. Innovation through regulation: COVID-19 and the evolving utility of telemedicine. J Am Med Dir Assoc 2020;21:1007–1009.
7. Gillespie SM, Moser AL, Gokula M, et al. Standards for the use of telemedicine for evaluation and management of resident change of condition in the nursing home. J Am Med Dir Assoc 2019;20:115–122.
8. Groom LL, McCarthy MM, Stimpfel AW, Brody AA. Telemedicine and telehealth in nursing homes: An integrative review. J Am Med Dir Assoc 2021;22:1784–1801.e7.

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Antibody Responses 3-5 Months Post-Vaccination with mRNA-1273 or BNT163b2 in Nursing Home Residents

Nursing home residents in Ontario, Canada, were prioritized for vaccination with mRNA vaccines from Moderna (mRNA-1273) or Pfizer (BNT163b2) in December 2020-January 2021, which significantly reduced the high morbidity and mortality due to COVID-19.[1] Nursing home residents often fail to mount robust responses to vaccinations[2] and recent reports of breakthrough infections, particularly from variants of concern, raise questions about

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