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Research Letter

Telemedicine for Older Adult Nursing Home Residents to Avoid Emergency Department Visits: The Experience of the NHTeleED Project in Maryland

Use of telehealth in skilled nursing facilities (SNFs) is increasing, and may be accelerated with experience gained during the Coronavirus disease 2w019 (COVID-19) pandemic.[1,2] Leaders in post-acute and long-term care, including the telemedicine working group of AMDA, are joining forces with acute care settings, emergency departments (EDs), and large health care organizations to develop guidelines[2] and improve quality of care for residents. Telemedicine services may be one solution to address need for rapid evaluation and treatment of resident acute conditions and access limitations during outbreaks of infections. Telemedicine has shown partnerships between SNFs and EDs reduce ED placement ranging from 9% to 38%,[2–5] although one Canadian study showed an increase.[6] Furthermore, the process of these implementation efforts has been varied.[5] This letter describes the implementation strategy and results of the Nursing Home Telemedicine-Emergency Department (NHTeleED) demonstration.

The University of Maryland (UM) School of Medicine (UMSOM) and Medical System (UMMS) designed, and pilot tested the implementation of the NHTeleED, June 2017 through August 2018. The objective was to determine if telemedicine services in 3 Baltimore SNFs could provide early detection and management of treatable problems in the SNF and prevent ED transfers.

UM scientists and clinicians worked with administrators and providers in 3 SNFs to (1) revise SNF admission policies so that incoming residents had to opt-out of potential telemedicine visits; (2) create SNF staff telemedicine scope of practice; (3) credential ED physicians to provide telemedicine consults; (4) integrate telemedicine service into SNF Standards of Care; (5) conduct training on telemedicine equipment; (6) create telemedicine visit forms; and (7) assist in acquiring telemedicine equipment. Training for SNF staff included weekly testing of telemedicine equipment. Individual SNFs identified a facility "champion" to identify technical needs, collect monthly data, and ensure the telemedicine service as part of standards of care for residents.

When a change in resident condition was identified by clinical staff, the resident was evaluated by staff on duty to determine whether the condition might warrant an ED visit, was potentially life-threatening, could be handled by internal nursing staff or delayed contact with a physician, or could be assessed by a telemedicine visit. Those determined to be life-threatening were sent immediately to the ED. If the condition was thought to be manageable within the facility or with a delayed contact with a physician without need for ED or telemedicine, residents were treated as needed by facility staff. Also, if the resident had an order refusing cardiopulmonary resuscitation and other life-sustaining treatments, no telemedicine visit or ED transfer was considered. Otherwise, a telemedicine visit was triggered and ED physicians, available 24/7, were contacted. A telemedicine cart was moved to the resident's room/bedside. The ED physician had access to the resident's SNF medical record during the telemedicine visit. Digital telescopes were available on the cart along with a computer screen for 2-way observation. Before initiating the telemedicine visits, residents were asked if they agreed to the visit.

Bi-weekly meetings of clinical and research teams included reporting potential and completed telemedicine visits. Data were reported monthly by each participating SNF from June 2017 to August 2018 (Table 1). A change in resident condition that warranted further evaluation was identified in 466 residents. Of those, 144 (31%) were identified for potential telemedicine visits. Of these 144, 61 (42%) had telemedicine visits and 83 (58%) did not for reasons related to staff inexperience or discomfort with using equipment, unavailability of telemedicine, or the availability of a nursing home onsite physician. The telemedicine visit allowed 68.9% (n = 42 of 61) of the evaluated residents to remain at the SNF for treatment.

Physicians' anecdotes (reported by the lead ED physician) suggested that when residents were transferred to the ED, physicians felt better prepared when they arrived because information had been provided from the telemedicine visit.

After each telemedicine visit, SNF nurses and ED physicians completed satisfaction measures through an online portal (n = 50 nurses and 45 physicians across the 61 telemedicine visits). Both groups agreed that patients were satisfied with the visit (6.0 on 7-point scale); overall satisfaction with the telemedicine visit was similar for nurses (5.8) and physicians (5.6).

This demonstration provides evidence that telemedicine visits can be implemented and benefited SNF residents by allowing them to remain in place for treatment, limiting exposure to transport, exposure to infectious agents, and additional tests in the ED. The service provided acute-level care, 24/7 physician access, reduced frequency of calls to physicians, and facilitated timely care coordination. Limitations included frequent changes in nursing staff trained on a telemedicine visit, equipment challenges at the time of a consultation, and data not available to indicate whether important conditions were missed. There was also one facility (Facility C) that had large times (more than 8 months of the 15-month

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Table 1
Telemedicine Visits and Transfers in the Maryland NHTeleED Demonstration, n = 466*

	Facility A	Facility B	Facility C	Total
Changes in resident condition, n	179	122	165	466
Potential telemedicine consult, n	63	71	10	144
Missed potential telemedicine consult, n (% of potential visits)	50 (79.3)	32 (45.1)	1 (1.0)	83 (57.6)
Completed telemedicine visits, n (% of potential visits)	13 (20.6)	39 (54.9)	9 (9.0)	61 (42.3)
Transferred to the ED, n (% of completed visits)	6 (46.1)	11 (28.2)	0 (0.0)	17 (27.9)
Remained in nursing home facility, n (% of completed visits)	6 (46.1)	28 (71.8)	8 (88.9)	42 (68.9)
Incomplete data	1	0	1	2

*Monthly data collected June 2017 to August 2018.

reporting period) when the telemedicine visit was not being used because of structural and staffing issues. It is important to note that 58% of potential visits did not result in a telemedicine consultation. With the post-pandemic changes in Medicare and Medicaid reimbursement for telemedicine SNF visits, telemedicine may improve access and quality of care for SNF residents.[7,8]

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