Final Evaluation Report

Ohio Department of Medicaid CMP Grant Agreement G-1819-04-0150

Between the

Ohio Department of Medicaid and LeadingAge Ohio

Providing Responsive Care Through Telehealth

Strategies to Reduce Hospital Admissions and Enhance Quality of Life

August 1, 2017 – June 30, 2019

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Executive Summary

LeadingAge Ohio's mission is to advance "solutions for exceptional care and successful living" with a vision to lead in quality, innovation and value. This project, which fit squarely within the LeadingAge Ohio mission and vision, proposed to install leased telehealth technology in two rural nursing facilities and track the benefits of increased care coordination strategies through telehealth to reduce emergency room visits, hospital admissions and readmissions.

Nursing facilities at the Ohio Eastern Star Home (OESH) in Mt. Vernon, Ohio, and Green Hills Community in West Liberty, Ohio were chosen for participation in this pilot study. These organizations are both continuing care retirement communities located in rural areas in Knox and Logan Counties with health professional shortage designations (HPSA).

Per grant requirements, only nursing facility residents were eligible for telehealth care during the grant period. Therefore, a leased mobile telemedicine cart was deployed in the nursing facility at OESH, likewise, a CareSpace (dedicated telehealth clinic room) was installed and deployed at the Green Hills nursing facility with nursing staff training for delivery of telehealth beginning November 1, 2017. However, the delivery of telehealth evolved with very different outcomes for each of the organizations, which allowed the team to consider the differences between intention and implementation as related to changes in practice.

As the grant period progressed, the Ohio Eastern Star Home discontinued involvement in the grant project as discussed later in this report. As a result, funding was reallocated within the grant budget resulting in telehealth being extended by two months at Green Hills Community.

Historical data for the period March 2016 through October 2017 were gathered from the Advancing Excellence Campaign/INTERACT (Intervention to Reduce Acute Care Transfers) Safely Reduce Hospitalizations tracking tool as submitted by Green Hills Community. When considering the whole population of the nursing home the 30-day

readmission rate for the historical period was 10.2%, compared to the 30-day readmission rate for the timeframe in which the telehealth intervention was present on the campus of 13.5% (Table 1, Page 13). Although this is an increase in the rate for the facility overall, it is important to note this is the rate for all residents, not specifically for the residents for whom telehealth was employed in their care. The intention per the original grant application was to reduce re-admission and emergency room only visits for 50 residents identified to use telehealth by 10% and, even with the reality of a small amount of missing data, it is reasonable to believe that the telehealth care implementation during the 20-month intervention period is at least partly responsible for the significate decrease in ER only visits for the overall population, a 42.5% change from the pre-intervention period (Table 2. Page 15).

During the telehealth period, 47 residents were seen via telehealth in 58 unique encounters. Of those encounters, four resulted in an emergency room visit. This means that less than 7% of the telehealth encounters led to in a clinical decision that resulted in a hospital transfer. A broad variety of incidents prompted the use of telehealth. The most common primary diagnoses in the telehealth group included:

- stroke,
- cancer,
- pneumonia,
- dementia,
- fall-related conditions/diagnosis.

The most common secondary diagnoses included:

- Type 2 diabetes,
- atrial fibrillation,
- hypertension,
- chronic obstructive pulmonary disease,
- dementia.

As discussed later in this report, there were 54 telehealth encounters whose end-result, or immediate clinical decision, did not include a transport of any type, whether to a community partner, physician's office, or hospital. These telehealth visits resulted in numerous revisions to care, including, but not limited to:

- adding or making changes to medications (including antidepressants);
- ordering additional labs/diagnostic tests;
- administering Debrox drops in the ear;
- administering antibiotic eye drops;
- plans for specific continuous monitoring.

Furthermore, three individuals were able to be discharged to home sooner than expected and did not have to wait for the physician to physically come to the facility for the final exam pre-discharge.

Fourteen individuals had an EKG via the telehealth technology; in the past, these 14 individuals would have been transported in order to receive this testing. Of the 14, it

was determined that 12 did not need to be transported and were saved from an ER visit. Based on the EKG results, 2 required a hospital visit. These visits included useful information to speed up diagnosis and treatment given that telehealth allowed for the EKG testing while still at the facility. One of these individuals was found to have a total blockage. Other potential transport diversions included the use of the otoscope/camera in the CareSpace. Nurses were able to show the physician, in real-time, a high-resolution video stream and/or image to allow for accurate and timely diagnosis of the current situation affecting the ear or a wound, often resulting in action that helped alleviate pain or other discomfort.

Although some of the goals originally envisioned for this pilot project were not able to be achieved, such as assessing communication trends between patient-physician, specialists and the interprofessional care team, overall the uses of telehealth provided nurses and physicians with the important diagnostic information they needed to take swift action when necessary, without interrupting the residents' routine in most cases, and to continue to monitor residents when warranted. In several of these instances, nurses indicated they would have previously had to request a transport, planned or otherwise, in order to gather that type of information.

Additionally, although telehealth is recognized as being useful in connecting family care providers with their loved ones when miles separate them, the pilot demonstrated that most families live within close proximity of this rural nursing home and most visit regularly, eliminating the opportunity to enhance their involvement through the use of telehealth.

Non-profit long-term care providers are committed to serving those whose resources are depleted and, as a result, their margins are committed to serving their missions. The CMP funds provided the opportunity to leverage this commitment in a way that enhanced their abilities to determine whether the telehealth technology enhanced the outcomes they could achieve for their nursing home residents.

Further, during this grant period the Ohio Department of Medicaid began to work (in early 2018) with various stakeholders to amend the existing Ohio Telemedicine Rule 5160-1-18. Due to the visibility and working relationship as part of this telehealth grant, LeadingAge Ohio was given an opportunity to weigh in on this statewide policy change. The revised Administrative Rule 5160-1-18, Telehealth, became effective July 4, 2019. The LeadingAge Ohio proposal for the patient's home being included as the originating site (now identified as patient site) was adopted. Also adopted was the LeadingAge Ohio recommendation for the addition of the following practitioners—Physician Assistant, Clinical Nurse Specialists, Certified Nurse-Midwifes, Certified Nurse Practitioners and Licensed Independent Social Workers. More detail can be found in a "Further Discussion" section at the end of this report.

Lessons Learned

Along with the experiences and outcomes described for this telehealth project earlier in the Executive Summary, there were a number of lessons learned that helped shape the day-to-day realities of the program evaluation. Following are highlights of those discoveries.

Implementation

"Build it and they will come" did not hold true at one of the organizations originally participating in this grant project. In spite of an enthusiastic attitude toward the opportunity to be part of this innovation, enthusiasm didn't translate into successful implementation when it came time to incorporate technology into their already high-quality standards of practice. In retrospect, a readiness assessment may have been a valuable first step toward ensuring success with the telehealth implementation. The Health Resources and Services Administration (HRSA) describes a readiness assessment as a *systematic analysis of an organization's ability to undertake a transformational process or change…by identifying the potential challenges that might arise when implementing new procedures, structures, and processes within a current organizational context. Through the identification of the gaps within the existing organization, the readiness assessment affords the opportunity to remedy these gaps either before, or as part of, the implementation plan.* Further, a number of studies have reported that an evidence-based practice can take an average of 17 years to become a fully incorporated general practice in a health care setting (Balas & Boren, 2000; Grant, Green, & Mason, 2003; Morris, Wooding, & Grant, 2011) and that does not include the time it is being tested as an innovation.

> Lesson Learned: Time spent in advance considering the complexities of implementation is time well spent. Incorporating a readiness assessment into the overall plan will likely reap many benefits for the success of the overall project.

Technology

All technology periodically requires software updates and/or reprogramming, along with appropriate internet connectivity to guarantee full functionality and dependability. This project experienced some technology challenges due to the workflow demands within the long-term care environment and reprogramming needed to meet those needs, as well as the bandwidth and internet speed experienced in a rural environment. These challenges, coupled with the introduction of new technology into the often-demanding front line delivery of care for frail older adults, caused repeated brainstorming of solutions. Any telehealth tool must be operationally intuitive and therefore easy for those who may only use it once or twice a week. In other words, telehealth solutions must not be intimidating to those who spend their days caring for people one-to-one; navigating technology is not always a companion skill for individuals gifted as caregivers. After a period of time, it became beneficial to this pilot project to have one

(or two) nursing staff members provide the telehealth care for residents, thereby capitalizing on their knowledge and comfort with the technology.

> Lesson Learned: Having a "super user" on-site who is part of the organization and vested in the success of the project will enhance the staff's comfort level with the technology and therefore acceptance of practice change by the front-line staff.

Training

As with driving our car, repetition ensures we are well trained and comfortable with its operation; the driving process becomes second nature. Although training and re-training both were provided for the use of the telehealth system, over time the project team found that unless the nursing staff used the technology on a regular basis, retention of the training was diminished, creating a barrier to its use as a "go to" when providing care.

> Lesson Learned: As mentioned above, identifying one or two nursing staff members who were interested in and comfortable with technology in general, and having them responsible for most of the telehealth encounters proved to be beneficial in the consistent delivery of telehealth care.

Diagnoses

This project envisioned comparisons of the 18 months prior to the implementation of telehealth with the 18 months of telehealth intervention based on four diagnoses -- congestive heart failure, COPD, pneumonia and stroke—as reported in Progress Reports 2 (bullet 8), Report 3 (Item 7) and Report 4 (Item 10). However, it was discovered that the number of residents with these four diagnoses in the 18 months prior to the project was rather small and would be a limiting factor in analyzing telehealth outcomes as the project progressed. This was something that could not have been realized prior to implementation of the actual project. Given the challenge with data noted below, and the inconsistency with recording primary and secondary diagnoses, the nursing facilities were encouraged to address a resident's health need through telehealth when appropriate. In other words, there were residents with a wide variety of diagnoses who could potentially benefit from the quick intervention that telehealth could offer them, thereby influencing decisions to transport residents to the emergency room, readmissions, and so on. Use of telehealth only by those with one of the four pre-identified diagnoses would have led to only sporadic telehealth encounters.

> Lesson Learned: The complexities of comorbidities in nursing home residents make diagnosis-specific evaluation particularly challenging. Should studies seek to explore diagnosis-specific interventions, training of staff to consistently assign diagnoses is urged. Having clear definitions of each variable in advance of data collection will ensure all parties were on the same page.

Data

As the project team began to delve into the data analysis, three major challenges presented themselves:

1. The first challenge was the inconsistencies in the way diagnosis was interpreted for residents, with the recording of diagnosis for any given resident being subjective depending on the circumstances of the moment and the nursing staff perspectives regarding the primary and secondary diagnoses. This influenced the project team's ability to consistently define primary and secondary diagnoses for analysis purposes. The issue was first highlighted when the project team heard the two organizations describe how they would have charted a fall differently. Specifically, the challenge can be described through an illustration of Resident A:
    a. On April 9: Primary = cellulitis; Secondary = LLE
    b. On July 16: Primary = AFib; Secondary = Weakness
    c. On August 31: Primary = Fall; Secondary = Pneumonia
    d. On October 19: Primary = Dyspnea; Secondary = CAD

2. Additionally, the historical data were gathered and recorded during the 18 months prior to the beginning of this grant funded project, at a time when the staff entering the data could not have been aware it would be used for program evaluation at a later date. Therefore, protocols could not have been put into place to standardize the recording of diagnoses, admission and re-admission details, and other coding aspects that would have been helpful in future program evaluation tasks.

3. Further, there were challenges with the existing data collection tools such as the INTERACT Safely Reduce Hospitalizations tracking tool. This tool is highly detailed and includes a wide variety of information, but when data are missing, it can be difficult to go back to find that information. Also, the software presented considerable challenges for removing identifying information so the report would be HIPAA compliant and appropriate for use in this program evaluation. The downloading of these data appears to have caused irreconcilable data differences. For example, similar to the above case, another individual was attributed to have 4 different birth dates and 8 unique diagnoses for four different records.

    Lesson Learned: Sometimes barriers are elusive and cannot be avoided. The project team has not been able to identify how they could have discovered the data challenges in advance. It would have been impossible for a team not fully embedded in the facility to ask all the right questions about the integrity or accessibility of the data until it was time to utilize the data in the ways necessary for this program evaluation. In other

words, the program evaluation team “doesn’t know what they don’t know” until the very specific tasks are attempted, and the unexpected barriers present themselves. Reliability of data may be compromised when de-identifying data, but at that point, there is no good way to go back to clarify or verify data.

4. Long-term care providers typically use clinical software packages that are built for the clinical needs of providers, with standard reports needed for daily operations built through the software; these are known as transactional systems. The packages typically offer users the ability to create customized reports to meet unique needs of their organizations. The underlying data, however, are not available in a form that allows statistical analysis and data analytics to be performed. In Health Catalyst the author Drew Cardon (2018) writes in a comparative review that “…a transactional database doesn’t lend itself to analytics. To effectively perform analytics, you need a data warehouse.” Each of the providers in this pilot had significant challenges extracting meaningful data for the evaluators.

   Lesson Learned: The long-term care settings will benefit from encouraging key software solutions vendors and developers to incorporate data warehousing abilities so that the storehouse of data created in care settings is useable by providers, evaluators, statisticians, and researchers alike to drive better quality care at a lower cost. Providers need to be able to pull their own data out of the systems where they input it and take control of their information in order to address quality improvement in a meaningful way. They need to fully retain ownership of the data and should demand this of EMR/EHR and other software developers and companies.

With this said, the project team believes the most important lessons learned are from those 58 encounters where telehealth care allowed the nursing staff and physician to address medical situations more quickly, without resident transport, allowing more responsive changes in medications, enhanced knowledge from EKGs, administration of eye and ear medications, regular observations and follow-up, and seeing residents more quickly before discharge to their home. These are all important examples of how telehealth can bring healthcare closer to the patient, demonstrating the positive outcomes of this person-centered approach to care.

Brief Project Overview

LeadingAge Ohio's Mission is to advance "solutions for exceptional care and successful living" with a vision to lead in quality, innovation and value. This project, which fit squarely within the LeadingAge Ohio mission and vision, proposed to install leased telehealth technology in two rural nursing facilities and track the care coordination efforts for at least 50 residents at each facility who are experiencing congestive heart failure, chronic obstructive pulmonary disease (COPD), pneumonia, or stroke to demonstrate the benefits of increased care coordination strategies through telehealth to reduce emergency room visits, hospital admissions and readmissions. Specifically, at Green Hills Community in West Liberty, Ohio, a telehealth clinic room (CareSpace) was established in the nursing facility area of this continuing care retirement community, and at the Ohio Eastern Star Home in Mt. Vernon, Ohio, a mobile Clinical Exam Station was provided to deliver telehealth care to residents in the nursing facility on the OESH continuing care campus.

Ohio Eastern Star Home
Clinical Exam Station

CareSpace at Green Hills Community

Detailed Project Components

A frail elder is nearly NEVER best served by transitioning between care settings. They are best served by providing the right care at the right time in the right place – and hopefully this is most often accomplished by serving them within their current care setting. This is particularly true for those struggling with issues of dementia. The use of telehealth to serve these residents without disruptive changes in settings was an opportunity to be seized! Additionally, LeadingAge Ohio sees the challenging disparities between rural long-term care resources and those in the urban settings. Telehealth seemed an opportunity to equalize the settings, taking advantage of technology to bring needed expertise to the rural setting.

Therefore, nursing facilities at the Ohio Eastern Star Home (OESH) in Mt. Vernon, Ohio, and Green Hills Community in West Liberty, Ohio were chosen for participation in this pilot study. Green Hills Community has 83 beds of rehabilitation and skilled nursing care and OESH offers nursing units caring for 86 residents. These organizations are both continuing care retirement communities located in rural areas in Knox and Logan Counties with health professional shortage designations (HPSA).

When the CEO of Green Hills Community was asked why he wanted his organization to become involved in this pilot project he indicated that “Green Hills Community has a long history of serving the aging population in progressive and innovative ways. We eagerly agreed to participate in the study because of the solutions that telehealth can offer to the unique issues that a rural environment presents. In our area, our limited number of physicians are trying to meet the needs of many who are no longer able to drive, or should not be driving; we have limited transportation options that are strained to maximum levels; and families, who no longer live in the area, who wish to be present when their loved one needs medical attention. Telehealth alleviates these issues by allowing all parties to work together in a comfortable environment.”

Per grant requirements, only nursing facility residents were eligible for telehealth care during the grant period. Therefore, a leased mobile telemedicine cart was deployed in the nursing facility at OESH during August and September 2017 with initial nursing staff training up to the deployment date of November 1, 2017. Likewise, a CareSpace (dedicated telehealth clinic room) was installed and deployed at the Green Hills nursing facility during September and October 2017 with nursing staff training for delivery of telehealth beginning November 1. At both locations a train-the-trainer approach was used, and support was provided for on-site training and re-training of additional nursing staff members along with the ability to train new nursing staff as turnover occurred throughout the grant period.

The overall goals of the project focused on tracking the care coordination efforts for at least 50 nursing facility residents at each community who were experiencing congestive heart failure, COPD, pneumonia or stroke to demonstrate the benefits of increased care coordination strategies through telehealth to reduce emergency room visits by 10% and hospital admissions and readmissions by 10%.

Lead by faculty from The Ohio State University Office of Geriatrics and Interprofessional Aging Studies, the intention was for analysis to compare emergency room visits, hospital admissions and readmissions data at each facility during the administration of telehealth care (November 1, 2017 through April 30, 2019) to the same measures occurring during the 18-month period prior to implementation of this project (May 1, 2016 through October 31, 2017). During the project an extension of telehealth delivery was granted for Green Hills Community, changing the telehealth delivery dates to November 1, 2017 through June 30, 2019; therefore, the look-back period for historical data was adjusted to March 1, 2016 through October 31, 2017. This revision to the original plan is explained in the next section of this report. Further, an evaluation would be administered to care providers to understand the acceptance and effectiveness perceptions of telehealth delivery by the involved care providers – physicians, specialists, nurses, and other long-term care staff involved with the residents/patients.

It was envisioned that the telehealth project would allow LeadingAge Ohio rural members to enhance their responsiveness to families and other caregivers and, importantly, to provide their staff the opportunity to demonstrate innovation in their care setting. The staff at these organizations displayed pride in their ability to serve their residents with cutting-edge technology and care. This would enhance their capacity to eliminate unnecessary hospitalizations and re-hospitalizations --- an opportunity they didn't have prior to implementing this technology. The ability to provide these types of opportunities to staff at LeadingAge Ohio member facilities is precisely where the organization sees the value of its association work.

Key Challenges of Implementation

Implementation of telehealth interventions began on November 1, 2017 at both locations, with each demonstrating different approaches to the launch of a new program. Both OESH and Green Hills have leadership that exemplifies the LeadingAge Ohio membership --- they are anxious to explore opportunities to serve their residents in ways that fulfill their non-profit missions and visions; however, the delivery of telehealth evolved with very different outcomes for each of the organizations as the grant period progressed.

<u>Ohio Eastern Star Home</u>

Telehealth training for Ohio Eastern Star Home nursing staff was held on September 26 and 28, 2017, with Medical Director telehealth training taking place on October 17, at which time nursing staff was invited for another training opportunity. Additional training was provided for OESH nursing staff in November 2017 and May 2018. This was coupled with readily available phone support for clinical use of the telehealth equipment. Where Green Hills Community was integrating telehealth into their daily practices, OESH was struggling with the implementation of telehealth six months after the grant launch.

On April 26, 2018 a site visit was held at the Ohio Eastern Star Home. During this visit the project leadership team gained a better understanding of the challenges being encountered with the implementation of telehealth at OESH; which included:

1. Struggles by leadership to implement the grant requirements and incorporate telehealth for both short- and long-term stay residents.
2. Difficulties with the day-to-day clinical users of the technology incorporating telehealth into their daily routines of care. This was attributed at least in part to the maturity of the nursing staff and their innate discomfort with technology.
3. Staff turnover which challenged clinical staff training for telehealth administration.
4. An unexpected FMLA by the DON and subsequent departure which contributed to the absence of front-line leadership in implementing and supporting training and consistent integration of telehealth into care delivery.
5. A change in Medical Director shortly after the beginning of the grant period derailed previous protocols in place for utilization of the technology. The Medical Director and his NPs were in the building four days a week which, by report of the Medical Director, meant they "had most residents in good shape by the end of the day," which he believed diminished the number of off-hours interventions needed for the residents, and therefore diminished the need for telehealth care.
6. Additionally, the rotating on-call responsibilities within the Medical Director's practice meant other physicians who might have been called during the night weren't aware of or equipped to provide care through telehealth and they would likely send the resident to the hospital as a matter of practice.

Corrective measures were put in place, which included:

1. Connecting OESH staff with Green Hills staff to share and understand uses, strategies and successes for telehealth.
2. Providing up to two additional training sessions before June 1 at OESH to cover as many nursing staff members as possible,
3. Having LeadingAge Ohio and Optimized Care Network leadership on site as part of training sessions if possible.
4. Using (and building upon) talking points originally provided in August 2017 as introduction to grant and telehealth in general. This would be opening of each training session to stir excitement.
5. With clinical leadership staff as super users, identify protocols to ensure routine knowledge sharing across staff.
6. Encourage leadership at OESH to position cart in visible location so it more readily becomes part of workflow.
7. Encourage staff to turn on cart as part of daily procedure at beginning of each shift.
8. Encourage staff to have practice sessions with Medical Director on regular basis
9. Create schedule for regular check-in between OESH, Leading Age Ohio and the Optimized Care network.

Even though the Administrator had taken on daily leadership of the on-site integration of telehealth care, and corrective measures had been implemented, all of the challenges stated above combined to foster an environment of resistance to the changes needed to effectively incorporate telehealth into patient care. As of early August 2018, it was determined that the Ohio Eastern Star Home was not going to be successful in reaching the goals envisioned and the telehealth equipment was subsequently removed from this site.

In the absence of another suitable location to replace the involvement of Ohio Eastern Star Home in this grant project, LeadingAge Ohio requested permission to extend the timeframe of telehealth care at Green Hills Community through June 2019 (originally scheduled to end April 30, 2019). The Ohio Department of Medicaid granted approval to redirect funds from within the current budget year to the extension of telehealth at Green Hills. The focus of the extension at Green Hills would provide: a) the ability to see more patients via telehealth; b) a longer time to accomplish remote family involvement in telehealth encounters; c) a potential opportunity to launch a new software platform in the CareSpace to assess the benefits/challenges in a long-term care environment versus the software platform that currently existed at the site.

Despite the enthusiasm mentioned above, we learned that simply training (and re-training) staff may not be enough to effect practice change in an organization. A 'readiness assessment' is likely an important aspect of any facility's approach to launching new technology and care approaches. Such an assessment would include a holistic look at the organization from leadership to frontline staff, to infrastructure and organizational policies.

The best plans are only as useful as an organization's ability to implement them. Intention and implementation are not always congruent, as anyone who has participated in a pilot project is aware, therefore gaining an understanding of the implementation process is important. Implementation Science is "the scientific study of methods to promote the systematic uptake of research findings and other EBPs into routine practice, and hence, to improve the quality and effectiveness of health services" (Bauer et al., 2015, p. 1). Although telehealth is not yet an evidence-based practice, there is much to learn from considering implementation science principles in this pilot project. This directs us to focus not only on the health outcomes, but on the processes as well. A number of studies have reported that an evidence-based practice can take an average of 17 years to become a fully incorporated general practice in a health care setting (Balas & Bore, 2000; Grant, Green, & Mason, 2003; Morris, Wooding, & Grant, 2011) and that does not include the time it is being tested as an innovation. We know there are a number of contextual factors and factors related to the actors involved in the adoption of innovation (Wejnert, 2002). Many contextual factors such as high turnover and high workloads, attitudes, insufficient support from leadership and senior staff, communication and cooperation have been identified as challenges to implementation of innovation and to change within a nursing facility (as cited in Low et al., 2015).

Having opinion leaders within the organization who are advocating for adoption and implementation, who are championing the change are known to make a difference (Dearing et al., 2017). In addition, having infrastructure challenges, such as technological difficulties; opposing priorities; having a more traditional, versus innovative, culture; having time-related challenges; and misalignment with other workplace guidelines, policies, and frameworks, could impact implementation (as cited in Low et al., 2015; Tworek, 2019). Some of these challenges will be discussed further in this report.

Green Hills Community

Telehealth training for Green Hills Community nursing staff was held on October 10 and 20, 2017, with Medical Director telehealth training taking place on November 2 and, like OESH, nursing staff was invited for another training opportunity. Along with the nursing staff, the Director of Nursing, Administrator, and Assistant Administrator received training so they were fully informed on how to use the equipment and could support nursing staff whenever needed.

Additionally, Green Hills planned three Open Houses to coincide with the launch in November 2017, along with newspaper and radio interviews as well. There were separate Open Houses for the local hospital leadership; one for residents, families and friends of residents in all housing/care levels on the Green Hills campus; and one for the wider West Liberty community of businesses and health care providers to announce this new innovative opportunity for nursing facility residents at Green Hills Community. During each of the open houses, participants were able to observe demonstrations of the technology and often have first-hand experience as the “patient” receiving telehealth care. Consistently, participants indicated their amazement at how “real” the doctor/patient interaction was while indicating they would “get their health care in this way” if the opportunity presented itself.

All Open Houses were well attended, resulting in a community-wide buzz and ongoing conversations about telehealth at Green Hills.

Green Hills Community also involved all levels of their internal management in the announcement and missions of the telehealth project on their campus, which added to the enthusiasm and recognition of the project across the organization.

Technology

The technology used in the CareSpace at Green Hills Community and the Clinical Exam Station at the Ohio Eastern Star Home allows medical providers to digitally connect with patients in a life-like (real time) manner. The CareSpace examination room and Clinical Exam Station combine the latest 3D imaging technology with state-of-the-art medical devices and cameras. Using their enabled laptop and Bluetooth stethoscope, providers can see, diagnose, treat and interact with patients, even though they are miles apart. The provider is fully engaged with the patient while the nurse at the patient's side handles all documentation and paperwork. Information can be automatically stored in a cloud-based electronic health record. This telehealth solution integrates medical devices, video conferencing and software to capture, store-and-forward and view live images. Where the CareSpace clinic room requires the patient to come to one location for care, the Clinical Exam Station can be taken to the patient/resident anywhere in the facility where Wi-Fi connectivity is available.

However, no technology is without its challenges. One significant challenge encountered in this project was the stability of rural internet connections and bandwidth between the provider's office or home and the nursing facility. These factors sometimes caused broken transmission and interrupted the life-like flow of the interaction. However, one of the reasons these facilities were chosen for the pilot project was because of the CMS requirement that the originating site must be outside a Metropolitan Statistical Area (MSA) or in a rural Health Professional Shortage Area (HPSA). Therefore, careful assessment of connectivity in the rural areas where telehealth is to be used, with consideration of proactive technology upgrades and work-arounds, is one of the lessons learned during this pilot project.

Additionally, the workflow programmed in the software that supported the telehealth encounters had to be reprogrammed to support the typical workflow seen in the long-term care environment vs the workflow that occurs in the hospital setting. It sounds simple—all that needed to be done was to reprogram the software so the nurse at the facility invited the physician into the telehealth encounter rather than the physician inviting the nurse or another care provider into the encounter as is typically done when telehealth is used in the hospital setting. This reprogramming turned out to be considerably more time-consuming and cumbersome than anticipated.

Findings and Discussion

As outlined above, analysis of the historical data for hospital admissions and readmissions as compared with the same data during the intervention period, staff interviews were used to describe the effectiveness of the telehealth intervention on reducing hospital admissions and readmissions. Specifically, the following describes the outcomes for each segment of project evaluation. Data included in this report are for descriptive purposes only.

Historical data for the period March 2016 through October 2017 was gathered from the Advancing Excellence Campaign/INTERACT (Intervention to Reduce Acute Care Transfers) Safely Reduce Hospitalizations tracking tool as submitted by Green Hills Community. When considering the whole population of the nursing home the 30-day readmission rate for the historical period was 10.2%. The 30-day readmission rate for the timeframe in which the telehealth intervention was present on the campus was 13.5%. Although this is an increase in the rate for the facility overall, it is important to note *this is the rate for all residents*, not specifically for the residents for whom telehealth care was employed.

Table 1. Full Facility 30-day Readmission Rates, Pre-Intervention and With-Intervention Periods

	Pre-Intervention (3/2016 - 10/2017)	With-Intervention (11/2017 - 06/2019)
Post-Acute Care Readmissions	10.6%	14.8%
Chronic Long-Term Care (non-Medicare) Readmissions	4.2%	6.4%
All Residents Readmissions	10.2%	13.5%

During the telehealth period, 47 residents were seen via telehealth in 58 unique encounters; of those encounters, the resulting clinical decision from the telehealth encounter resulted in an emergency room visit on four occasions. This means that less than 7% of the telehealth encounters resulted in a hospital transfer. A broad variety of incidents prompted the use of telehealth. These included, but are not limited to, abnormal heart rate discovered during regular rounding, resident voiced depression, resident voiced and/or exhibited anxiety, the need for pre-operative consults, hearing issues/ear pain, change in condition/status, and so on. Most common primary diagnoses in this group included stoke, cancer, pneumonia, dementia, and fall-related conditions/diagnosis. Most common secondary diagnosis included Type 2 diabetes, atrial fibrillation, hypertension, chronic obstructive pulmonary disease, and dementia.

As mentioned, there were 54 telehealth encounters whose resulting clinical decision from the telehealth encounter did not include a transport of any type, whether to a

community partner, physician's office, or hospital. These telehealth visits resulted in numerous revisions to clinical care, including:

- adding or making changes to medications, including antidepressants;
- ordering additional labs/diagnostic tests;
- administering Debrox drops;
- administering antibiotic eye drops; and
- plans for specific continuous monitoring.

Furthermore, three individuals were able to be discharged to home sooner than expected and did not have to wait for the physician to physically come to the facility for the final exam pre-discharge.

Fourteen individuals had an EKG via the telehealth technology; in the past, these 14 individuals would have been transported in order to receive this testing.

- Of the 14, it was determined that 12 did not need to be transported and were potentially saved from an ER visit.
- Two required a hospital visit.
- These visits included useful information to speed up diagnosis and treatment given that telehealth allowed for the EKG testing while still at the facility.
- One of these individuals was found to have a total blockage.

Other potential transport diversions included the use of the otoscope/camera in the CareSpace. Nurses were able to show the physician, in real-time, a high-resolution video stream and/or image to allow for accurate and timely diagnosis, often resulting in action that helped alleviate pain or other discomfort.

These uses of telehealth provided nurses and physicians with the information they needed to take swift action, when necessary, and to continue to monitor residents when warranted. In several of these instances, nurses indicated they would have previously had to request a transport, planned or otherwise, in order to gather that type of information.

We were also able to examine numbers of individual transfers that resulted in an ER only visit; admission, inpatient; or admission, observation only – despite a small amount of missing data. Table 2 below shows this raw data and includes the percent change from the pre-intervention period to the intervention period. Because some data indicating the outcome of the transfer were missing, these numbers may be slightly more positive than reality. In other words, the total number of transfers for the facility was slightly higher than presented here.

Even with the small amount of missing data, it is reasonable to believe that the telehealth care implementation during the 20-month intervention period is at least partly responsible for the significate decrease in ER only visits, a 42.5% change from the pre-intervention period. During these two time periods, the total census was similar: an

average of 89 per month during the pre-intervention period, and an average of 87 per month during the intervention period. There was a slightly higher number of transfers that resulted in inpatient admission, 7 more individuals during the intervention period, or 9.7% increase; and one less observation admission, a decrease of 33.3% as the numbers are so small.

Table 2. Total Number of Transfers during Time Period by Outcome for Full Facility

	Pre-intervention	With-Intervention	% change
ER Only Visit	47	27	-42.5%
Admitted, Inpatient	72	79	9.7%
Admitted, Observation	3	2	-33.30%

Key Challenges for Evaluation

As with many pilot projects, much of the learning of this project was related to data collection. While the intention was to examine number of contacts with primary care physicians, specialists, and other health care professionals, a decision was made to re-focus on the individuals who took part in the telehealth intervention. The team focused on describing this group in terms of their diagnoses/conditions, understanding what prompted the use of the telehealth, and also looking specifically at the outcomes they experienced, particularly whether or not the resulting clinical decision required transport after the telehealth encounter and what the plan of action was as a result of the telehealth encounter.

Given that this was a pilot project, collection of data as it relates to telehealth was not possible in the existing electronic medical record. This additional step to collect program evaluation-related data posed a challenge for staff; it is difficult for nurses, who are already busy on the floor with duties as usual, to stop to add information to an additional form/data collection instrument, and it can be hard to remember details after the fact. Because of this, there was some missing data that could not be generated/recalled with full confidence. Furthermore, there were challenges with the existing data collection tools such as the INTERACT Safely Reduce Hospitalizations tracking tool. This tool is highly detailed and includes a wide variety of information, but when data is missing, it can be difficult to go back to find that information.

There were some challenges related to qualitative data collection as well. The intention was to collect survey data from staff and residents and/or families after each telehealth encounter. This was made difficult, again by time constraints on nurses, and also as a result of the short stays for some residents. In some cases, there was little opportunity for a non-involved staff person, volunteer, or member of the evaluation team to contact the resident or family to get feedback about the experience. Ideally, there would have been an evaluation of each telehealth encounter by the staff and participant, but this was not possible. In some cases, the opposite was true and too much time had passed

and the telehealth care experience was no longer fresh in the resident's memory. This is not surprising given that a common diagnosis of those who participated in telehealth was dementia.

Green Hills Community Clinical Staff Evaluation

Clinical nursing staff were asked to complete an evaluation survey after participating in telehealth care. Seven staff completed the surveys. The summary of the findings is below.

The majority of clinical staff agreed that the technology succeeded in meeting this intended objective:

1. Creating value for short-term and long-term residents.

A small majority of clinical staff agreed that the technology succeeded in meeting these intended objectives:

1. Providing standard of care consistent with traditional healthcare encounters.
2. Creating nurse-patient relationships similar to traditional encounters.

A notable number of clinical staff were undecided about having achieved these intended objectives:

1. Providing patient education.
2. Improve use of clinical time.
3. Value for long-term residents.
4. Involvement of family members.

Concerns included:

- Reliability of the technology. (given broadband internet issues)
- The challenges in setting up and using the technology were time consuming.

Table 3 below includes all items from the survey, while the graph below shows responses by each item. Red and blue indicate the most positive responses. For example, with item 1, five individuals responded in "agreement" that "providing care through the telehealth platform to be consistent with the standard of care I provide during traditional face-to-face healthcare encounters with residents," while one respondent was undecided (green).

Table 3. Clinical Staff Evaluation Survey Items

ITEM	CONTENT
1	I found providing care through the telehealth platform to be consistent with the standard of care I provide during traditional face-to-face healthcare encounters with residents.
2	I was able to create a similar nurse-patient relationship through the telehealth platform as I am able to provide in traditional face-to-face healthcare encounters with residents.
3	I was able to provide patient education through telehealth encounters.
4	I found that providing care through the telehealth platform allowed me to make better use of my clinical time.
5	I was able to have patients seen by the medical director more frequently due to the use of the telehealth platform.
6	I appreciated the ability to involve family members through the telehealth platform.
7	I see the value of using telehealth care for short-term residents in nursing facilities.
8	I see the value of using telehealth care for long-term residents in nursing facilities.

Graph 1. Clinical Staff Evaluation, Individual Item Responses

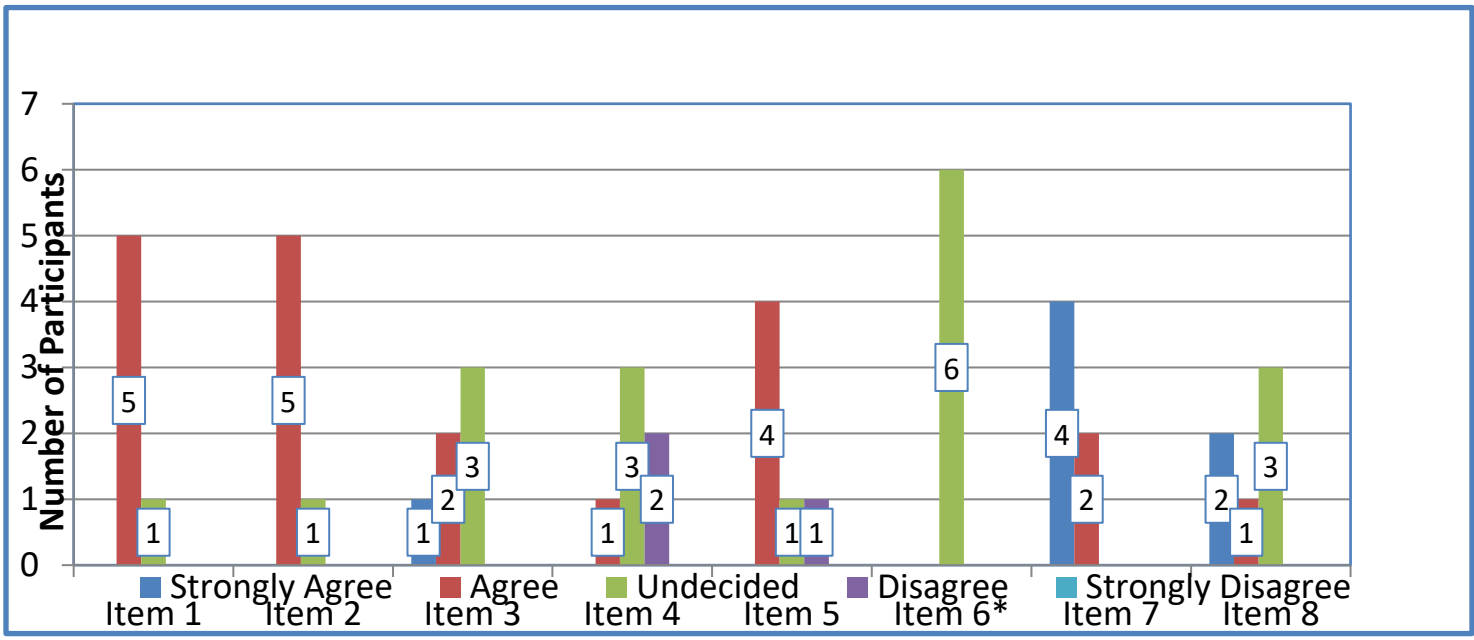

Table 4. Clinical Staff Evaluation, Qualitative Comments by Item

tem Number	Comments
1	• Only used camera feature.
2	
3	• Many residents couldn't hear him or understand.
4	• Took a long time to set up. • Time consuming when I was responsible for setting it up/getting it ready. • Takes time to go to room and get it ready. • I did enjoy the ability to have the doctor assess the patient without sending the patient to the ER. • Time consuming to start.
5	
6	• Did not use this part. • Most families here frequently. • Didn't use this function. • I didn't have family involvement.
7	• Very helpful to use on short-term residents that are usually acute and condition changes rapidly. But also very useful to long-term residents that has an acute issue start.
8	• Long-term residents often have chronic health issues that make transport difficult which makes telehealth convenient. • Not easy to drag them to telehealth room. Portable would be better.
10	• A portable unit would have been useful as it has underutilized for LTC,

Green Hills Community Administrative Staff Evaluation

Administrative staff were asked to complete an evaluation survey near the end of the intervention time period. Eight staff completed the surveys; summary presented below.

The majority of administrators agreed that the technology succeeded in meeting the intended objectives. These included:

1. Providing standard of care consistent with traditional healthcare encounters.
2. Creating nurse-patient relationships equivalent to traditional encounters.

3. Providing patient education.
4. Increase the frequency of access to medical director.
5. Creating value for short-term and long-term residents.

A small number of administrators were undecided about having achieved these intended objectives:

5. Improved use of clinical time.
6. Value for long-term residents.

Common concerns included:

1. Reliability of the technology.
2. The challenges in setting up and using the technology were time consuming.

Table 5. Administrative Staff Evaluation Survey Items

ITEM	CONTENT
1	I believe our staff provided care through the telehealth platform consistent with the standard of care they provide during traditional face-to-face healthcare encounters with residents.
2	I believe our staff were able to create a similar nurse-patient relationship through the telehealth platform as they are able to provide in traditional face-to-face healthcare encounters with residents.
3	I believe our staff were able to provide patient education through telehealth encounters.
4	I believe our staff found that providing care through the telehealth platform allowed them to make better use of their clinical time.
5	I believe our staff was able to have patients seen by the medical director more frequently due to the use of the telehealth platform.
6	I believe our staff appreciated the ability to involve family members through the telehealth platform.
7	I believe our staff sees the value of using telehealth care for short-term residents in nursing facilities.
8	I believe our staff sees the value of using telehealth care for long-term residents in nursing facilities.

Graph 2. Administrative Staff Evaluation, Individual Item Responses

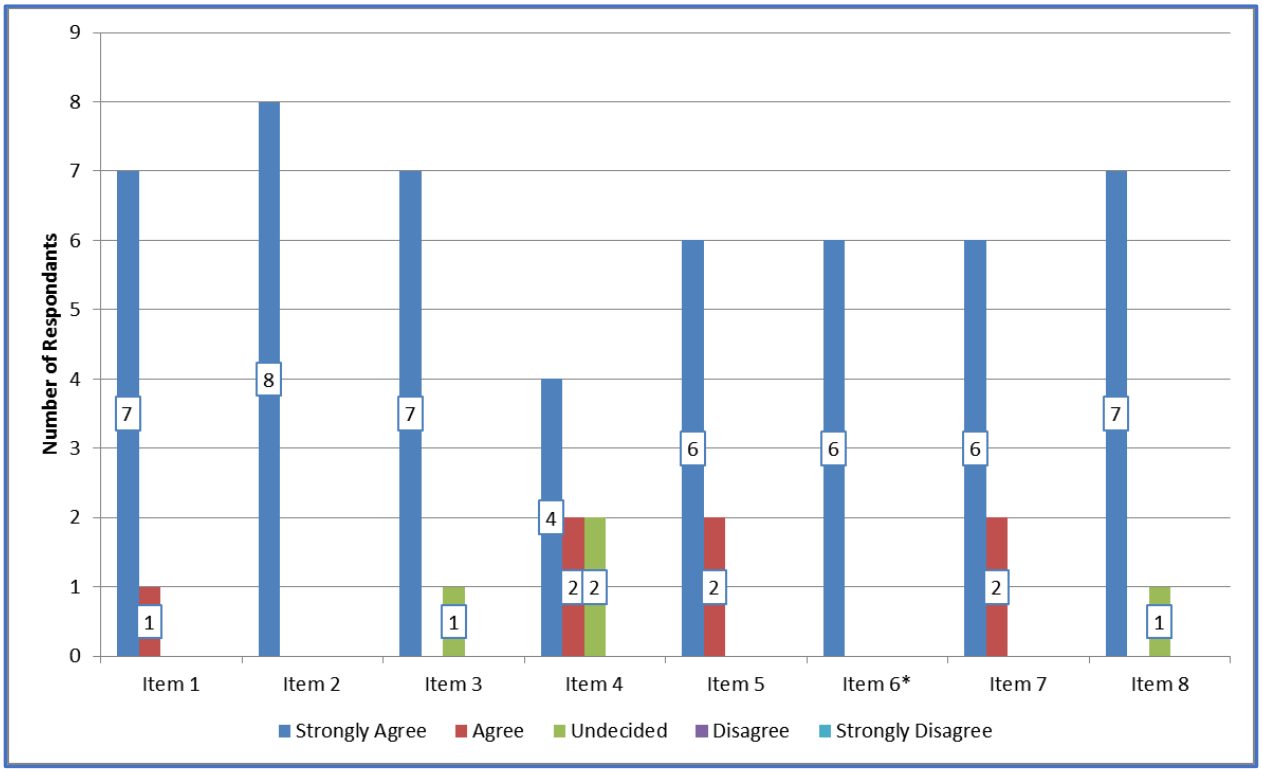

Table 5 above includes all items from the survey, while Graph 2 above shows responses by each item. Again, red and blue indicate the most positive responses. Responses from administration were somewhat more positive than those from clinical nursing staff. Below, in Table 6, the qualitative comments by item are presented.

Table 6. Administrative Staff Evaluation, Qualitative Comments by Item

Item Number	Comments
1	• The nurses were well trained with using the equipment. • I think our staff is doing well with using the equipment consistently when it works properly.
2	• The communication was actually better between the MD and the nurse than over the phone. Partly due to what is being observed.
3	• Our staff consistently needs reminded to educate resident. We are learning new equipment ourselves. I think we get so focused on our learning at times that we lack with educating the resident.

4	• Setting everything up and contacting physician can be time consuming. • I haven't spoken with them about this.
5	• When it works properly.
6	• *Currently not working • The technology was sometimes a challenge. • *Have not accomplished this goal as of yet.
7	• I believe most managers would strongly agree. I believe (…) staff would be less enthusiastic.
8	• It would reduce the need to be transparent.
9	• The technology has been a challenge especially the software to add families to the encounter. • Thank you for a fabulous opportunity to pilot this technology. • This is a wonderful program that will be exceptional when the equipment is working properly all the time. • Thru time and training and patience I do believe this will be beneficial in reducing residents going back to the hospital. • I was always in awe of the times we were able to keep the residents on campus because they could "see' the doctor at odd hours.

As mentioned previously, there was little need to involve family member via telehealth, as they were often physically present and/or otherwise engaged in the care of their loved one. This was reflected in the comments and responses of both the clinical and administrative staff.

Implementation Science guidelines had the evaluation team consider process challenges that may have been at play during this pilot project. Conversations with administrators and clinical staff time highlighted the needs for repeated training, but the difficultly to find availability for nurses to 'get off the floor' to complete the trainings. Others expressed some concern that they were not accomplished users of technology and therefore had a very high learning curve. Encouragement from leaders was also a factor we heard discussed, as was confidence. This was needed before nurses felt comfortable bringing residents to the CareSpace or bringing the mobile cart to their rooms. It could be gained by practice and/or by receiving affirmation from a supervisor or leader. This is also a piece of process implementation that can be difficult to measure and easy to dismiss when implementing new technology that also requires behavior change. Staff turnover and the education and training associated with that also had an impact on implementation and was somewhat reflected in our conversation and evaluation as well. In regard to the technology, one additional point that came up in discussion with clinical and administrative staff was the desire to have flexible options in order to better meet the needs of the patients and staff. Specifically, the OESH staff

would have liked to have access to a more permanent CareSpace while the team at Green Hills said it would have been useful to be able to bring the portable cart into the rooms of certain residents for whom getting to the CareSpace was difficult. In some cases, bringing a resident who needed to stay in bed into the CareSpace may have required more than one staff person assist, making it a challenge during busy times. The more flexible the technology, the greater the access to care.

Appendix A is a compilation of telehealth scenarios at Green Hills Community to illustrate the breadth of applications for telehealth interventions in the long-term care setting.

Conclusions and Future Recommendations

LeadingAge Ohio represents aging services providers that serve elders across a variety of settings, from community housing to home- and community-based services to facility settings. In every setting and without exception, accessing safe, reliable transportation for frail elders is a challenge.

Common challenges for non-emergency medical transportation include determining what type of vehicle is needed for the individual, identifying transportation providers willing to offer services, and if the individual is unable to navigate the health care center independently, providing a staff member to accompany the individual. Challenges experienced during unplanned, emergency transportation include all of the dangers inherent in care transitions, including disrupted medication schedules and missed doses, increased confusion for individuals with cognitive impairment, and communication errors between healthcare providers and caregivers, among others. Rural environments can present even more challenges through lack of transportation infrastructure, scarcity of primary healthcare providers and distance from medical specialists. Ohio's Medicaid reimbursement policy fails to recognize these challenges: reimbursement for medical transportation is too low to retain a pool of providers, and telehealth reimbursement is significantly limited (although improved somewhat through the recent revisions of the Administrative Rule governing telehealth).

This project again demonstrates that telehealth services have the ability to offset some of these challenges. New research has validated the many ways in which telehealth might mitigate the need for transportation and eliminate many of these challenges. A recent report out of the University of Chicago, titled "The Forgotten Middle: Many Middle Income Seniors will have Insufficient Resources for Housing and Healthcare"** (Pearson et al., 2019), suggests that the problem will likely grow in the future, as a burgeoning middle class may be ill-prepared for the costs of long-term care. Viable solutions are critical not only for those served but also to mitigate existing and forecasted workforce shortages. The percentage of those available to care for aging Americans is expected to decline; in fact, an AARP-PPI study suggests there will be half as many caregivers per individual in the future (4.1:1 in 2030, 2.9:1 in 2050) than there

is today (7.2:1). Transportation providers and a host of other supportive services will also suffer workforce shortages. ** April 2019, 2019 Project HOPE—The People-to-People Health Foundation, Inc. The National Investment Center for Seniors Housing & Care (NIC) provided a grant to NORC at the University of Chicago to fund this research.

It is our hope that this research will pave the way for creating informed health policy that recognizes the opportunities telehealth offers.

LeadingAge Ohio and its collaborating partners (the Optimized Care Network and the Ohio State University Office of Geriatrics and Interprofessional Aging Studies), are grateful for the opportunity to conduct this exciting pilot project. Civil Monetary Penalty Funds made this work possible. We thank the Ohio Department of Medicaid and the Centers for Medicare and Medicaid Services for the grant funding. We are excited to have demonstrated through this pilot project that telehealth care offers significant benefits for residents and staff in the long-term care setting, influencing quality of life for the older adults who are most in need of responsive care.

Submitted by:

Kathryn Brod, MBA, President/CEO, LeadingAge Ohio, 614-545-9014, kbrod@leadingageohio.org

Prepared by:

Linda Mauger, Community Health and Aging Advisory, OCN ConnectedCare™

Cynthia Dougherty, PhD, Director, Office of Geriatrics and Interprofessional Aging Studies, Ohio State University College of Medicine

Kathryn Brod, MBA, President/CEO, LeadingAge Ohio

Further Discussion

During this grant period the Ohio Department of Medicaid began to work (in early 2018) with various stakeholders to amend the existing Ohio Telemedicine Rule 5160-1-18. As a result of the feedback received, ODM proposed to rescind the existing rule and to replace it with a new rule of the same number and revised title of “Telehealth.” ODM requested comments from the public on the new policy before it was proposed through the formal rule making processing. Due to the visibility and working relationship as part of this telehealth grant, LeadingAge Ohio was given an opportunity to weigh in on this statewide policy change.

LeadingAge Ohio proposed revisions to Administrative Code 5160-1-18 (B) (2) for expansion of the rendering practitioners at the distant site to include Nurse Practitioners, Physician Assistants, Nurse-Midwives, Clinical Nurse Specialists, Certified Registered Nurse Anesthetists, Clinical Psychologists, Clinical Social Works and Pharmacists, to more closely align with CMS Telehealth policy.

It was recommended that Administrative Code 5160-1-18 (A) (3) be revised to include "home" as an originating site along with any location where an individual licensed by the state and approved as a distant site provider is present with the patient and connected to a distant site provider be considered an approved originating site (examples would be a public health nurse with mobile telehealth equipment by the side of a homebound patient in their congregate housing apartment, or a home health care agency nurse with the patient in a senior center clinic equipped with telehealth capabilities).

Also, LeadingAge Ohio proposed a change to Administrative Rule 5160-1-18 (A) (3) that would allow all skilled nursing facilities to charge an originating site facility fee. This would better align with CMS policy. It was not proposed that the healthcare professional with the patient could charge both a professional fee for services as well as the originating site fee. In other words, a nurse with the patient in the nursing facility would not charge a fee for his or her professional service; however, the nursing facility itself would qualify for the originating site facility fee. The distant provider would bill their fee according to distant site fee structure.

The revised Administrative Rule 5160-1-18, Telehealth, became effective July 4, 2019. The LeadingAge Ohio proposal for the patient's home being included as the originating site (now identified as patient site) was adopted. Also adopted was the recommendation for the addition of the following practitioners—Physician Assistant, Clinical Nurse Specialists, Certified Nurse-Midwifes, Certified Nurse Practitioners and Licensed Independent Social Workers.

Appendix A

Telehealth Examples at Green Hills Community and Ohio Eastern Star Home

Green Hills Community

Following surgery, a resident experienced some changes to her incision and reported stinging symptoms. From his remote location, the doctor was able to see the patient in the telehealth CareSpace at Green Hills. A high-resolution scope was used to allow the doctor to get a closer look at the area without actually being in the room. A nurse with the resident was able to determine that there was no warmth in the incision area. The doctor ordered a dressing change along with an antibiotic that resulted in a positive outcome to the incision site and avoided transfer to the hospital or doctor's office for care. In this case, the resident's family happened to be visiting and were able to be in the telehealth room with their mother while she spoke with the doctor about her symptom(s).

Resident complained about shortness of breath and feared that he might be having a heart problem. He denied any chest, jaw, or arm pain. The medical director was contacted. He ordered labs and EKG which was performed in-house with the telehealth equipment. The results were shared with the doctor and anti-anxiety medication was order for the resident, which provided more timely treatment without the need to transport to the hospital for care.

A short-term resident who was going to be discharged prior to the next scheduled doctor rounds was able to see the doctor through telehealth. The Director of Nursing stated that It was a very easy visit. The resident enjoyed the visit and thought the equipment was "pretty neat."

During weekly rounds by the doctor, the family of a resident was concerned that their mother's hearing was declining. They wanted to send her out to have her ears examined. The doctor was able to take her and the family to the telehealth room and examine her ears with the camera. He showed them that her ears looked normal and stated that he would continue to monitor for any new issues.

Resident was seen by the doctor on telehealth due to an acute illness that needed addressed. The nurse manager was able to utilize the stethoscope and the doctor was able to listen to resident's lungs and heart from his office. This resulted in the doctor starting the resident on an antibiotic quickly, avoiding further decline.

EKG was done on a resident and the cardiologist was very impressed at how fast the staff was able to have results back to the specialist. Nurse Manager was able to take the new RN into the telehealth room with her for training**.**

A resident's family had noticed that the resident's hearing had been worsening over the course of several months. The nurse manager was able to take the resident to the

telehealth care space and examine his ear with the doctor present. With the use of telehealth and the quality of the camera view, it was determined that the resident had an ear impaction of hardened wax. The doctor was able to order a treatment and kept the resident from having to go out of the facility to another provider.

A resident was seen in August due to an infected surgical wound that required antibiotics. The nurse was able to utilize the camera to give the physician a great view of the wound. This incident happened on the weekend which could have caused the resident to be sent to the local hospital for treatment. The doctor was able to assess the resident, order the needed medication, and refer the resident to the surgeon without leaving the facility.

Two residents required an EKG for pre-op testing. Telehealth made it possible to have the needed testing performed without the difficulty of transferring them out of the facility.

The telehealth camera was used to view a resident's ears after complaints of pain. She was found to have a large amount of wax that needed removed. This capability saved her from being referred to an outside audiologist to receive the orders for a simple debrox flush. The camera was used for a 2 other residents' ear examinations which avoided going out of the facility to an audiologist.

The telehealth camera was used to examine a laceration to the bottom of a resident's toe as she was demanding to be sent to the ER. After examining the wound and also allowing the resident to see the extent of the injury she agreed that it did not warrant a trip to the ER and the laceration was taken care of on site.

A resident was seen by the physician using telehealth after developing a non-productive cough. The doctor was able to assess the resident's lungs and heart. An antibiotic, blood work and chest x-ray were ordered to avoid a trip to the ER.

The physician saw a resident via telehealth who was acutely ill. The EKG was utilized for the resident. The EKG showed that the resident was in complete heart block and the doctor was able to see how the resident was breathing prior to deciding on a course of care.

Recently a resident was having tremors/shakiness that would have been appropriate for telehealth care; however, the resident requested to be left in bed. Since telehealth care requires a visit to the CareSpace (down the hall) it wasn't able to be used for this resident. Consequently, the resident was sent to the ER and then on to OSU Medical Center. Additionally, Green Hills residents have been experiencing seasonal upper respiratory infections for which telehealth assessment with the physician would be appropriate. However, it is sometimes too taxing for them to get out of bed and go to the CareSpace (while also possibly spreading the infection along the way). These are examples in which mobile telehealth equipment would be a useful/responsive fit in long-term care; however, each resident room would need to have Ethernet connection and that is not currently available at Green Hills.

A resident was seen via telehealth last week for excessive bruising in upper extremities along with being on multiple blood thinners. The physician was able to see the extent of the bruising and make the appropriate medication changes and lab orders.

A gentleman was admitted to Green Hills for altered mental status with a history of brain tumor. He began having a change in condition which did not improve. The doctor was able to see the resident using telehealth and decided that he did, in fact, need to be seen in the ER for a more thorough workup.

The doctor was also able to order an antidepressant for a short-term resident that was not handling his new situation quite as he felt he should. This was a very short visit and saved the facility time and money transporting him to another Dr or having him wait until the Dr was in on rounds the next week.

Resident was having increased levels of confusion and also redness to lower extremities. Telehealth made it possible for the Dr to exam the resident and make the appropriate order changes. The altered level of confusion could have very easily turned into an ER visit.

Resident was complaining of pain in her hip that she stated was not x-ray'd at the hospital after her fall that brought her to Green Hills. Dr was able to see the resident and order an x-ray without her needing to follow up with ortho until warranted. The x-ray was able to be obtained in house, as well.

The camera feature of telehealth was used to evaluate a herniated stoma over time. Using this feature, staff were able to see the difference in herniation from one day to the next. The video portion with the Dr was not used as this resident tended to paranoia; staff worried that the Dr being on the screen would cause confusion and agitation.

A resident presented with new onset of shaking/tremors and was seen by the Dr via telehealth. This interaction allowed the Dr to observe the shaking and also discuss options with the resident's husband. It was determined that labs were to be drawn and a trip to the ER was not warranted.

<u>The Ohio Eastern Star Home</u>

A patient had been experiencing chest pain. The provider (from his remote site) ordered a STAT EKG which the staff was able to obtain with the use of the Clinical Access Station in-house. This prevented the patient from having to be sent to the emergency department to have the test done. The results were immediate, and the provider was able to guide the next course of action which involved treating the patient at the nursing facility.

A patient had symptoms of fluid retention and possible pneumonia with mental status changes. The provider (from his remote site) saw the patient through the telehealth clinical access station, utilizing the blue tooth stethoscope and other diagnostic tools. This allowed the provider the ability to rule out suspected pneumonia by the lung

sounds he was able to hear, and therefore keep the patient in-house. Instead, a urinalysis was ordered for possible urinary tract infection due to the unexplained confusion. This was confirmed, and the patient was able to remain in-house and be treated accordingly.

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