![LeadingAge Ohio logo]

Providing Responsive Care through Telehealth Strategies
to Reduce Hospital Admissions and Enhance Quality of Life

Submitted to CMS April 5, 2017
Revised May 9, 2017

1. Purpose and Summary

This pilot project is a collaboration between LeadingAge Ohio, Green Hills Community, Ohio Eastern Star Home, and the Optimized Care Network (OCN) to bring telemedicine into the skilled nursing facilities at two communities located in rural settings in Ohio. The goal is to demonstrate how increased, responsive access to care enhances care coordination for both primary and specialty care and increases quality of life for complex nursing home residents.

Access to care in rural settings: Both Green Hills Community and the Ohio Eastern Star Home are located in counties that are largely rural in nature. Green Hills Community is located in Logan County (57% rural), which is designated as a Health Professional Shortage Area by the U.S. Department of Health and Human Services (See: https://bhw.hrsa.gov/shortage-designation). The Ohio Eastern Star Home is located in Knox County, which is 56% rural. These geographic locations, combined with the health complexities of nursing home residents at both communities, make consistent access to primary care, medical specialists and mental health providers often challenging yet essential. The cost of transporting residents to emergency rooms and/or long distances for medical treatment brings a heavy financial burden for care providers, challenges care coordination goals and, even more importantly, has the potential of negatively impacting the emotional well-being, cognitive status and health status of the resident. Quick and appropriate response to complex resident/patient conditions is essential to the avoidance of hospital admissions and readmissions. Rural settings bring challenges on all healthcare fronts.

Next Generation Care: The decreasing number of physicians trained to care for the aging population, the health care complexities seen in the geriatric population, and the number of chronic conditions present in nursing homes and other care environments require enhanced care coordination to ensure continuity of care across delivery sites. Alternate approaches to care will be in increasing demand over the coming years. The convergence of technology, health care, and person-centered care goals offer an opportunity to change the paradigm of care.

Technology brings the opportunity for telehealth services, which are constantly evolving. On the forefront of the digital health explosion is telemedicine, or providing clinical services to patients from remote locations. Telemedicine can be delivered through a variety of mediums such as videoconferencing, web portals, and mobile devices such as tablets to help produce positive healthcare outcomes, reduce spending and increase efficiency. Considering that on average the typical emergency department visit, including round trip ambulance services, costs $2,500, telehealth

solutions offer an economic opportunity in conjunction with supporting quality of life goals for the older adult.

In one study funded by the Commonwealth Fund, published in 2014 (http://www.commonwealthfund.org/publications/in-the-literature/2014/feb/use-of-telemedicine), researchers assessed the potential of telemedicine to lower rates of hospitalization and achieve savings in skilled nursing facilities. The study found there was a significant decline in hospitalization rates at facilities that were deemed "more engaged" with the telemedicine service; hospitalization rates for this group declined 11.3 percent. Based on the reduced hospitalization rates of the more-engaged facilities in the study, Medicare could expect an average of about $151,000 in savings per nursing home per year *(less the cost of the telemedicine service).* Additional studies are emerging that show similar outcomes. Recently, Dr. Majd Alwan, LeadingAge's Senior Vice President for Technology and Executive Director of the Center for Aging Services Technologies, stated that "Telehealth is one of the fastest evolving health care technologies that has the potential to greatly improve organizations' efficiency and quality of care." (See: http://www.leadingage.org/cast/cast-updates-its-telehealth-selection-portfolio)

Further, the *Report to Congress: E-health and Telemedicine* of August 12, 2016, by the U.S. Department of Health and Human Services, states that telehealth appears to hold particular promise for chronic disease management. Almost 50 percent of all adults in the United States have at least one chronic illness. Chronic disease accounts for approximately 75 percent of all health care expenditures and contributes to about 70 percent of all deaths in this country. Many persons with chronic conditions are elderly, and therefore have mobility limitations. Moreover, people with multiple chronic conditions typically require frequent visits to clinicians. Ensuring ready access to care for such individuals may help avert costly emergency room visits or hospital stays…… Prepared by Office of Health Policy, Office of the Assistant Secretary for Planning and Evaluation (ASPE) https://aspe.hhs.gov/sites/default/files/pdf/206751/TelemedicineE-HealthReport.pdf

The telemedicine pilot project described in this proposal will build upon a growing body of evidence-based studies to provide a unique opportunity to "meet patients where they are" and provide responsive, affordable and readily accessible personalized care, care coordination, and chronic disease management focused on reducing the need for higher levels of care.

2. Expected Outcomes

By establishing an on-site telemedicine clinic (CareSpace) at Green Hills Community and introducing a "telemedicine mobile cart" at the Ohio Eastern Star Home, we will track the care coordination efforts for at least 50 skilled nursing facility residents at each community who are experiencing congestive heart failure, COPD, pneumonia or stroke to demonstrate the benefits of increased care coordination strategies through telehealth. Care coordination efforts will focus on increased patient-physician communications, enhanced communication between the primary care and specialty care providers, and increased involvement of the inter-professional care team, to promote recovery and long-term

functional status.

To achieve these outcomes, the Optimized Care Network (See: http://www.optimizedcare.net) will deploy videoconferencing technologies and specialized digital medical instruments (through monthly lease as identified in budget) that provide the remote medical director/physician for each of these communities, as well as specialists involved with ongoing and/or follow-up patient care, the opportunity to examine the patient at Green Hills Community and the Ohio Eastern Star Home-- connecting with the patient in a life-like manner at any hour of day or night. The healthcare provider can see, diagnose, treat and interact with the patient even when the doctor and patient are miles apart through the use of a HIPAA compliant audio/video platform that includes diagnostic tools such as a stethoscope and high resolution cameras that allow real-time assessment of the medical situation and interaction between the patient and provider to obtain a reliable diagnosis of the problem at hand. All telemedicine encounters are captured and automatically stored in a cloud-based electronic health record (EHR) to further insure successful care coordination.

The video/audio technology will allow providers to form relationships with their patients from a distance. The videoconference may include, via split screen technology and as appropriate for each situation, a medical specialist, family member(s), and/or supporting members of the health care team such as care coordinators, social services providers, pharmacists, dietitians, diabetic educators, and so on, enhancing care coordination and collaborative decision-making that will influence admission and readmission outcomes.

The telehealth equipment at both Green Hills Community and the Ohio Eastern Star Home will only be used for nursing facility residents at those facilities during the project period.

Sustainability: Through this project Green Hills Community and Ohio Eastern Star Home will be able to see first-hand the benefits of providing telehealth care to their skilled nursing facility residents and analyze costs, reimbursements and staffing involved at the facility level. As a result, based on real experiences, they will be able to budget for needed technology equipment as well as negotiate possible cost sharing arrangements with health care providers involved in care provision. Further, this project will inform the discussion regarding facility fees applicable in long-term care settings to facilitate the provision of on-site telehealth care.

3. Results Measurement

This project proposes to:
1) Compile historical data by reviewing 50 skilled nursing facility resident/patient records at Green Hills Community and Ohio Eastern Star Home who received care for congestive heart failure, COPD, pneumonia or stroke in the 18-month period prior to the implementation of this project, specifically recording the number of patient-physician contacts, contacts between primary and specialty physicians, contacts/involvement by other members of the care team, emergency room visits, hospital admissions and readmissions, and length of stay data.

2) Compile 50 skilled nursing facility resident/patient electronic medical records at Green Hills Community and Ohio Eastern Star Home who received care for congestive heart failure, COPD, pneumonia or stroke in the 18-month period following the implementation of this project, specifically recording the number of patient-physician contacts, contacts between primary and specialty physicians, contacts/involvement by other members of the care team, emergency room visits, hospital admissions and readmissions, and length of stay data. **For the 50 residents identified in each of the two participating nursing facilities, this project proposes to reduce emergency room visits by 10%, and to reduce hospital admissions and readmissions by 10%.**

3) Analyze historical and pilot data outlined in #1 and #2 to discover outcomes related to the delivery of care through telehealth strategies vs. traditional care delivery and their influences on length of stay, emergency room visits, hospital admissions and readmissions, and quality of life for residents/patients in two rural nursing home facilities in Ohio.

4) Administer an evaluation of 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 in #2 above. (See Attachment A: Draft Care Provider Evaluation)

5) Additionally, we will strive to understand resident/patient experiences and acceptance of telehealth care through a short interview to help illustrate the effectiveness of telehealth care strategies in the skilled nursing setting from the consumer's perspective. (See Attachment B: Draft Telehealth Care Consumer Interview Questionnaire)

Reporting: The project team will provide quarterly reports (every 3 months) throughout the term of the project that reflect progress made toward expected outcomes and other important milestones which may have occurred at the time of the report. A final report at the conclusion of the project period will include lessons learned; overall project results and data analysis; and resident, provider and community experiences.

4. Benefits to NH Residents

Empowerment and greater involvement in their healthcare experiences are known to be beneficial to anyone receiving care from the healthcare or long-term care systems. This is especially important for frail older adults and their families. Chronic disease management for those with multiple complex disease situations is challenging for all involved. Telehealth strategies support better communications and timely responses by care providers, leading to higher levels of function and increased quality of life.

An article entitled, "Telemedicine Interventions for Chronic Disease Management" published in the September 2014 issue of _Telemedicine and e-Health_ stated "Several CHF studies reported noticeable health outcome improvements among patients participating in telemedicine compared with patients receiving usual care. Results from several studies indicated "fewer episodes of health worsening" and "general improvement in clinical, functional and quality of life status" among patients receiving

telemedicine care. Among CHF patients, the authors found telemedicine was associated with significant reductions in mortality (15% to 56%) compared with patients who underwent usual care. "The majority of the studies reported that telemedicine reduced hospital admissions, re-admissions, length of stay, and emergency department (ED) visits…Telemedicine has the potential to become an effective tool to improve health outcomes, improve access to health care services, and reduce health care costs for chronic conditions." https://www.cdc.gov/dhdsp/pubs/docs/sib_oct2014.pdf

5. *Non-Supplanting*
This project will in no way supplant existing responsibilities of the participating nursing facilities to meet existing Medicare/Medicaid requirements or other statutory and regulatory requirements.

6. *Consumer and Other Stakeholder Involvement*
  a. With successful deployment of telehealth care strategies as designed in this pilot project, the community hospitals in each of these rural communities (Mary Rutan Hospital and Knox County Community Hospital) should expect to see decreased admissions, readmissions and emergency room visits.
  b. Families of residents will have an opportunity to be more involved in their loved one's care due to the ability to connect family members (with the resident's consent) through a HIPAA compliant link for various encounters between the resident and health care providers. These opportunities should not only provide families and residents with another level of confidence in the quality of care being received, but should also enhance care coordination efforts in general.
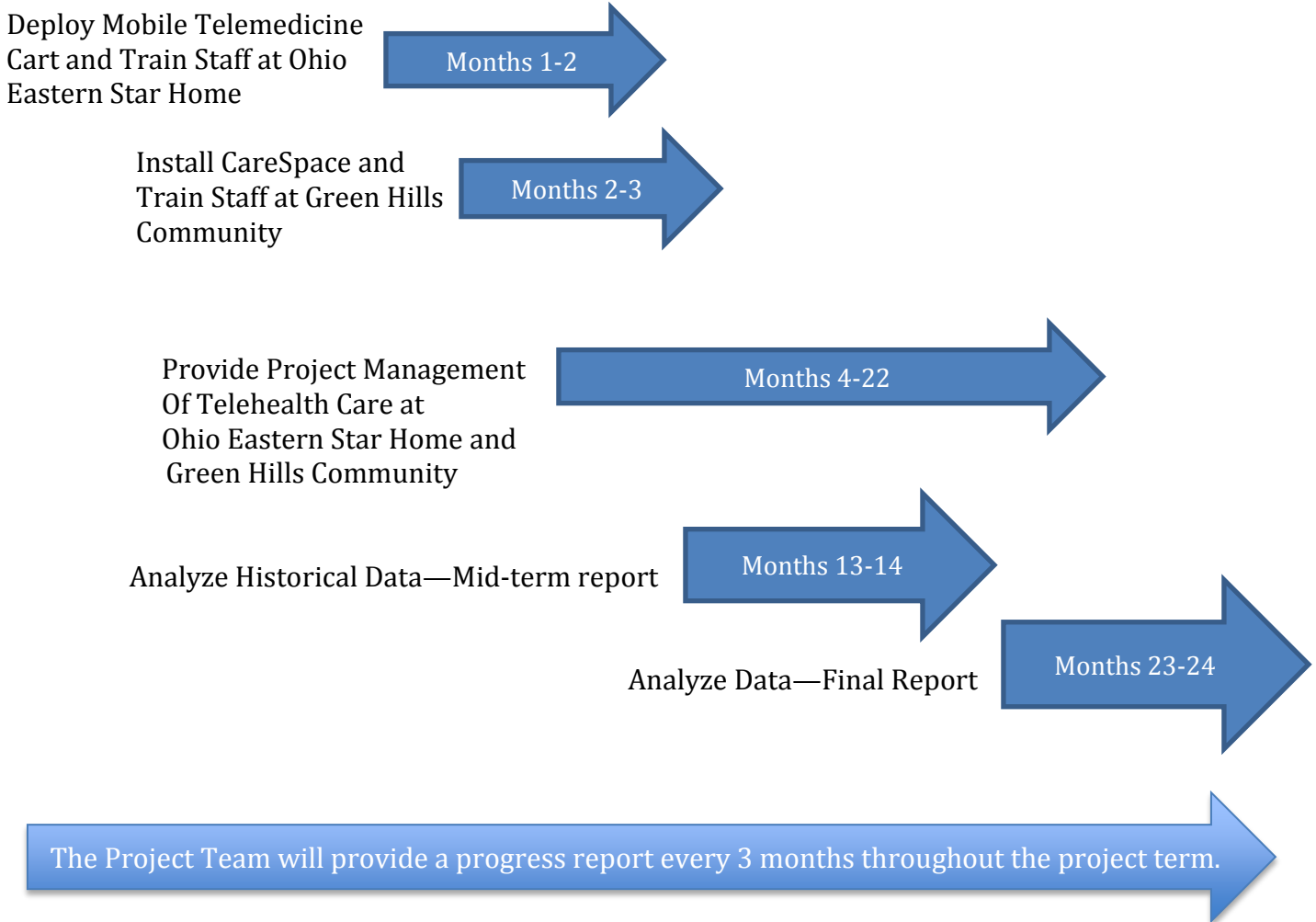
7. *Funding*

Budget

Task	Description	Cost Detail	Grant Request
Deploy Mobile Telemedicine Cart at Ohio Eastern Star Home			
	Telehealth cart equipped with specialized diagnostic tools, training, maintenance and support provided by OCN	$2,580 lease cost/month X 18 months	$ 46,440.00
	2 Provider enabled laptops for 24/7 medical director access provided by OCN	$585 lease cost /month X 18 months	$ 10,530.00
	Installation, tech enable, provider training by OCN		$ 3,500.00
	Telehealth training for 2 Ohio Eastern Star Home nurses @ $30.00/hour (16 hours each) provided by OCN	32 hours X $30.00/hr.	$ 960.00
	Ohio Eastern Star Home Subtotal		**$ 61,430.00**
Deploy on-site clinic (CareSpace at Green Hills Community			
	Equip clinic space provided by Green Hills Community with identified diagnostic tools, PresenceCare video technology, on-site staff training, and maintenance and support provided by OCN	$4,351 lease cost/month X 18 months	$ 78,318.00
	1 Provider PC-24 Broadcast Station with enabled laptop and stethoscope by OCN	$1,900 lease cost/month X 18 months	$ 34,200.00
	1 Provider enabled laptop and stethoscope by OCN	$292 lease cost/month X 18 months	$ 5,256.00
	Installation, clinic devices, tech enable, provider training by OCN		$ 14,418.00

	Telehealth training for 3 Green Hills Community nurses @ $38.50/hour (16 hours each) provided by OCN	48 hours X $38.50/hr.	$	1,848.00
	Green Hills Community Subtotal		**$**	**134,040.00**
Project Management				
	OCN Project coordination and data analysis leadership	1 staff X 100 hours @ $60.00/hr.	$	6,000.00
	LeadingAge Ohio project coordination and data analysis oversight	1 staff x 40 hours @ $50.00/hr.	$	2,000.00
	OCN clinical oversight	1 staff X 100 hours @ $65.00/hour	$	6,500.00
	Project Management Subtotal		**$**	**14,500.00**
Data Analysis and Mid-term Report				
	OSU Graduate Student analysis of historical patient data as described in Section 3.1	1 graduate student X 40 hours @ $25.00/hr	$	1,000.00
	OSU Graduate Student compilation of historical data with preliminary mid-term report of historical data	1 graduate student X 30 hours X $25.00/hr	$	750.00
	OSU Faculty Oversight	20 hours X $75.00/hr.	$	1,500.00
	Mid-Term Report Subtotal		**$**	**3,250.00**
Data Analysis and Final Report				
	OSU Graduate Student analysis of historical and pilot data and final data analysis incorporated into overall project final report	1 graduate student X 60 hours @ $25.00/hr.	$	1,500.00
	OSU Faculty Oversight	20 hours X $75.00/hr	$	1,500.00
	Final Report Subtotal		**$**	**3,000.00**
Total CMP Funds Requested			**$**	**216,220.00**

Project Timeline
(24 months)

Deploy Mobile Telemedicine
Cart and Train Staff at Ohio
Eastern Star Home

Months 1-2

Install CareSpace and
Train Staff at Green Hills
Community

Months 2-3

Provide Project Management
Of Telehealth Care at
Ohio Eastern Star Home and
Green Hills Community

Months 4-22

Analyze Historical Data—Mid-term report

Months 13-14

Analyze Data—Final Report

Months 23-24

The Project Team will provide a progress report every 3 months throughout the project term.

8. Involved Organizations

- **LeadingAge Ohio** (Role: Assist with project coordination and data analysis). See: http://www.leadingageohio.org LeadingAge Ohio staff leadership will include:

    o Anne Shelley, MBA, BSN, RN Director of Professional Development and Regulatory Relations. Anne specializes in home health and hospice and has been a nurse educator for over 20 years. She is responsible for the educational events offered by LeadingAge

Ohio as well as regulatory and technical assistance for LeadingAge Ohio members. Anne received her MBA from Tiffin University and her BSN from Bowling Green State University.

- **The Optimized Care Network** (OCN) (Role: Project coordination and provider of telehealth platform): See: http://www.optimizedcare.net
  The Optimized Care Network, a leading provider of digital healthcare that merges high tech with high touch, will provide the technology platform for this project as described above. Members of the leadership team will guide the installation, training and monitoring of the telehealth care delivered throughout this project.
  - o Erin McCaffrey Crespo, MSN, FNP-BC, AAHIVS, Lead Clinician **--** Erin is licensed as a Family Nurse Practitioner with additional certification as an HIV Specialist through the American Academy of HIV Medicine. She earned a BSN and an MSN from Georgetown University. Erin has experience providing healthcare to patients across the lifespan in a variety of settings. She has special interest in and extensive experience providing care to vulnerable populations.
  - o Linda Mauger, Community Health and Aging Executive -- At OCN, Linda focuses on the integration of telemedicine across the long-term care network, leading efforts to change the paradigm of care and enhance quality of life for older adults. In her previous position as Director of the Ohio State University Office of Geriatrics and Gerontology, Linda created and directed innovative health care and social services education, training and outreach programs to respond to today's complex needs of older adults, caregivers, and aging services providers across the continuum of care.

- **Green Hills Community** (Role: Site of telehealth care clinic) See:
  http://greenhillscommunity.org/ -- Green Hills Community, located in West Liberty, Ohio, specializes in lifestyle design that enhances the physical, mental, social, emotional and spiritual aspects of residents' lives while respecting the need for independence, privacy and self-esteem. Green Hills Community offers 83 beds of rehabilitation and skilled nursing care.
  - o At least one nurse on each shift will be trained to administer care through the telehealth platform. The Optimized Care Network will provide this training as well as ongoing support and maintenance of the telehealth technology.
  - o Dr. Roger Kauffman, MD, Medical Director, Green Hills Community, is board-certified in Family Medicine with added qualifications in Geriatrics. He has received honors for Family Physician of the Year from the Ohio Academy of Family Physicians, Mary Rutan Hospital Physician of the Year, and as a fellow with the American Academy of Family Physicians. He has participated in medical missions in Honduras and Haiti for several years, as well as providing preceptorships for medical students and residents. Dr. Kauffman graduated from Eastern Mennonite College and received his medical degree from Medical College of Virginia. His family practice residency was completed at the University of South Alabama. His professional memberships include the American

Academy of Family Physicians, the Mennonite Medical Association, the Ohio Academy of Family Physicians and the Ohio State Medical Association.

- **Ohio Eastern Star Home** (Role: Location of mobile telemedicine cart) See: http://www.oeshome.org/ – The Ohio Eastern Star Home is an independent, non-profit retirement community. It is the only Eastern Star home in the state of Ohio, and one of only 10 Eastern Star homes in the United States. This continuing care retirement community includes skilled nursing units providing care for 86 residents.
    - o At least one nurse on each shift will be trained to administer care through the telehealth platform. The Optimized Care Network will provide this training as well as ongoing support and maintenance of the telehealth technology.
    - o Dr. Mark A. Buddie, MD, Medical Director, Ohio Eastern Star Home, is board-certified in Family Medicine as well as Hospice and Palliative Medicine. He specializes in geriatrics and long-term care. Dr. Buddie graduated from Duke University and received his medical degree from The Ohio State University. His family practice residency was completed at Grant Medical Center in Columbus, where he remains in private practice. He is a certified medical director (CMD) and serves as the medical director for several skilled nursing facilities and for Odyssey Hospice. His special areas of interest include dementia/Alzheimer's disease and palliative care.

9. *Contacts*

Linda Mauger
Community Health and Aging Executive
Optimized Care Network
614-486-7072
l.mauger@optimizedcare.net

Anne Shelley MBA, BSN, RN
Director of Professional Development
LeadingAge Ohio
614-545-9030
ashelley@leadingageohio.org

Attachment A
Draft Care Provider Evaluation

As someone who has been involved in providing telehealth care in the skilled nursing facility at
_____, your perspectives regarding this approach to care are valued. The following
evaluation strives to understand your perspectives and should take approximately five (5) minutes to complete.
Thank you in advance.

Please rate each of the following questions on the scale of 1-5, by circling the choice that best represents your
perspective and providing additional comments when appropriate.

1. I found providing care through the telehealth platform to be consistent with the level of care I provide
    during face-to-face encounters with patients.

1 = Strongly Agree	2 = Agree	3 = Undecided	4 = Disagree	5 = Strongly Disagree

Comments:

2. I was able to create a similar provider-patient relationship through the telehealth platform as I am able
    to provide in traditional face-to-face encounters with patients.

1 = Strongly Agree	2 = Agree	3 = Undecided	4 = Disagree	5 = Strongly Disagree

Comments:

3. I was able to coordinate care with other members of the care team through the telehealth platform
    (specialists, nurses, social workers, and so on).

1 = Strongly Agree	2 = Agree	3 = Undecided	4 = Disagree	5 = Strongly Disagree

Comments:

4. I was able to provide patient education through telehealth encounters.

1 = Strongly Agree	2 = Agree	3 = Undecided	4 = Disagree	5 = Strongly Disagree

Comments:

5. I found that providing care through the telehealth platform allowed me to make better use of my clinical time.

1 = Strongly Agree	2 = Agree	3 = Undecided	4 = Disagree	5 = Strongly Disagree

Comments:

6. I was able to interact with patients more frequently due to the use of the telehealth platform.

1 = Strongly Agree	2 = Agree	3 = Undecided	4 = Disagree	5 = Strongly Disagree

Comments:

7. I appreciated the ability to easily involve family members through the telehealth platform.

1 = Strongly Agree	2 = Agree	3 = Undecided	4 = Disagree	5 = Strongly Disagree

Comments:

8. I found the electronic health record easy to use.

1 = Strongly Agree	2 = Agree	3 = Undecided	4 = Disagree	5 = Strongly Disagree

Comments:

[ ]

Attachment B
Draft Telehealth Care Consumer Interview Questionnaire

As someone who has been involved in receiving telehealth care in the skilled nursing facility at
_____, your perspectives regarding this approach to care are valued. The following
evaluation strives to understand your perspectives and should take approximately five (5) minutes to complete.
Thank you in advance.

Please rate each of the following questions on the scale of 1-5, by circling the choice that best represents your
perspective and providing additional comments when appropriate.

1. I found the care I received through the telehealth platform to be similar to the level of care provided
    during face-to-face encounters with healthcare providers.

1 = Strongly Agree	2 = Agree	3 = Undecided	4 = Disagree	5 = Strongly Disagree

Comments:

2. I appreciated being able to be seen by a physician without having to travel to the hospital or doctor's
    office.

1 = Strongly Agree	2 = Agree	3 = Undecided	4 = Disagree	5 = Strongly Disagree

Comments:

3. I appreciated the ability to involve my family members in my care through use of the telehealth platform.

1 = Strongly Agree	2 = Agree	3 = Undecided	4 = Disagree	5 = Strongly Disagree	Does Not Apply

Comments:

4. Receiving care through the telehealth platform gave me confidence that my care team was working
    together on my behalf (doctor, specialist, nurses, social worker, and so on).

1 = Strongly Agree	2 = Agree	3 = Undecided	4 = Disagree	5 = Strongly Disagree

Comments:

5. After this telehealth care experience, I would be accepting of future telehealth care (in nursing home, hospital, doctor's office).

1 = Strongly Agree	2 = Agree	3 = Undecided	4 = Disagree	5 = Strongly Disagree

Comments: