MARYLAND HEALTH CARE COMMISSION

Long Term Care and Hospital Telehealth Project Grants

Brief and Final Reports

April 2016

Participating Grantees:

Atlantic General Hospital Corporation with Berlin Nursing and Rehabilitation Center

Dimensions Healthcare System with Sanctuary of Holy Cross and Patuxent River Health and Rehabilitation Center

University of Maryland Upper Chesapeake Health with Lorien Health Systems

Craig P. Tanio, M.D., Chair **Ben Steffen, Executive Director**

University of Maryland Upper Chesapeake Health

in partnership with Lorien Health

Long Term Care/ Hospital Telehealth Project

Final Report

Prepared for: Maryland Health Care Commission

October 2015

Introduction

Improving coordination among care givers via telehealth programs can lead to increased quality and lower healthcare costs for patients in Continuing Care Facilities (CCFs). An unique partnership among Lorien Health Systems (Lorien), University of Maryland Upper Chesapeake Health (UMUCH), Maryland Emergency Medicine Network (MEMN) and LifeBot helped eliminate unnecessary trips to the hospital by remotely connecting patients with emergency medicine expertise using telehealth tools.

The Lorien Bel Air location includes 69 skilled nursing beds and 56 assisted living apartments located approximately three miles from Upper Chesapeake Medical Center. The skilled beds are nearly always filled to capacity and primarily occupied by residents aged 80 or greater (61% of the total population) with 90% of all patients having either Medicare or Medicaid insurance. Upper Chesapeake Medical Center (UCMC) is part of the University of Maryland Medical System serving the Harford and Cecil county communities. Each year the UCMC ED treats more than 60,000 patients with greater than 19,000 admissions to the hospital. During the baseline period, 509 patients discharged from UCMC to a CCF were readmitted within 30 days. While there is no formal relationship between the two organizations, they have collaborated on many initiatives both prior to and during this pilot program.

This partnership aimed to enable onsite assessment and treatment options for patients at Lorien Bel Air that would allow the clinical team to practice within the full scope of their license without requiring a transport to the hospital. In addition to telehealth technology the partners recognized the need for clinical testing equipment plus enhanced medications and IV fluids. Workflow processes that enabled the CCF to contact ED providers were established with the caveat the providers at either location could contact EMS for transport if either party was concerned about the condition of the patient. The resulting package of interventions, decision tools and clinical workflows should reduce the number of patient transfers from Lorien Bel Air to UCMC.

An overview of the pilot program can be viewed via the following link:
UMUCH - Lorien Telehealth Project Demonstration Video

Technology Infrastructure

To best support the clinical goals of the pilot, telehealth technology and supporting clinical testing tools were deployed in a new examination room at Lorien and the Emergency Department at Upper Chesapeake Medical Center. The partnership selected the LifeBot Dreams system for the telehealth component, after considering other options. The Dreams System offered clinicians the ability to gather vital signs, including EKGs, coupled with multiple camera angle video conferencing capabilities. This allowed the MEMN team in the ED to blend clinical data with a visual assessment of the patient to aid in clinical decision-making. The system uses touchscreens and a keyboard for nursing documentation at Lorien, while the ED physician manipulates the cameras remotely.

The LifeBot platform offered other advantages for this pilot program including its portability that allows the Lorien team to bring the system to patient rooms in the event of a decompensating health. Further, all clinical data entered into the system during the telehealth encounter is saved and made available to providers at both organizations. During the Pilot, the Dreams software was

upgraded to include Ultra Sound capabilities and the new release of the platform will include a remote stethoscope and two-way video conferencing.

In addition to the LifeBot technology, Lorien also implemented iStat Point of Care testing in the new exam room. The availability of lab values was essential for establishing a baseline condition and determining if new treatments were effective during follow-up calls to the ED. The Lorien exam room also included a medication cart that was matched to include most of the medications and IV fluids that are at the ED physician's disposal at UMUCH. The combination of these IT and clinical testing components gave ED physicians both objective and subjective information to determine if the patient could continue at Lorien with a new treatment approach or needed to be transferred to UMUCH for an acute evaluation.

Project Implementation Process

After earning the grant from the Maryland Health Care Commission, the partners drafted a work plan to address the many components of the program. This included space planning, IT installation, workflow redesign, development of new protocols and a plan for training both the Lorien team and the UMUCH physicians. To achieve the aggressive timeline, a planning team consisting of key stakeholders from each organization met in-person and via phone at least weekly to determine the progress of each tactic. The team is described in the Table below:

Name	Title	Organization
Wayne Brannock	Chief Operating Officer	Lorien Health
Jim Hummer	Vice President	Lorien Health
Susan Carroll, R.N.	Vice President	Lorien Health
Cheryl Bayne, R.N.	Director of Nursing	Lorien Bel Air Location
Suresh Dhanjani, M.D.	Medical Director	Lorien Bel Air Location
Ed Walter	Administrator	Lorien Bel Air Location
Fermin Barrueto, M.D.	Chair- Emergency Medicine	UM UCH/ MEMN
Colin Ward	Vice President	UM UCH
Rick Casteel	Vice President	UM UCH
Kerry Fletcher	Chief Operating Officer	LifeBot

Section one of the project plan covered the Hardware Installation at both Lorien and UMUCH. A precursor to this work was the renovation of a former employee breakroom adjacent to a patient floor at the Lorien site. Once the room was outfitted with Lab space, a patient bed and ceiling mounted cameras, the LifeBot team delivered and installed the Dreams System. The self-contained unit is the size of carry-on luggage and mounted on a cart next to the patient bed. It was connected to the cameras and the internet then tested remotely by the Lifebot team. The dual-monitor work station in the Emergency Department was installed and the point-to-point connection between the sites was tested. Closer to the go-live date, it was determined that a portable option would be needed for the ED provider to allow for flexible assignment of the telehealth consultation role. The laptop enabled a single ED provider to be assigned to Telemedicine coverage even when not scheduled to work in the hospital that day. Tasks associated with the acquisition of both the laptop and a MiFi hotspot, required as a redundant internet connectivity mechanism were added to the plan. Mifi connectivity provided the flexibility for providers to connect when not at home or the

hospital and also served as a back-up in the event of an unforeseen internet outage at the provider's home.

The second section of the work plan pertained to the development of clinical work flows and protocols and was the most vital. The clinical representatives reviewed the medications available in the emergency department and created a cart at Lorien that included the same medications and IV fluids. This allowed the ED provider to order a course of treatment consistent with the capabilities at UMUCH. Further, a list of the point of care tests that would be available at the Lorien site was provided to the ED team. These tests provided critical information to physicians to aid in initial decision-making as well as follow-up comparisons to gauge the effectiveness of the treatment plan. Agreement on inclusion and exclusion criteria as well as the process for initiating use of the telehealth room and ED consult were also mutually agreed upon, as was a process by which EMS could still be contacted if the tele evaluation indicated a more serious issue.

Next the project plan addressed the process for training the clinicians at each site. The Lorien Nursing staff received an initial four hour training session with the Chief Operating Officer from LifeBot. The team was also trained on the use of the iStat lab system that was deployed within a dedicated space in the Lorien Exam room and instructed on the workflow for initiating a teleconsultation. The Dreams system is fairly intuitive and allowed the UMUCH physicians to be trained via two video demonstrations created by Dr. Barrueto and posted to YouTube. Initially nine ED providers were trained on the system and credentialed by Lorien to conduct a remote evaluation. The training videos can be viewed via the following links:

Sample Training Video Part I
Sample Training Video Part II

By credentialing ED providers at Lorien, the physician could order tests and treatments to be carried out and counter signed by the attending physicians at Lorien. Without these credentials, the ED provider would be limited to making *recommendations* to Lorien attendings who in turn would write the orders. The later would defeat the purpose and effectiveness of the ED provider availability.

Section four of the plan addressed the data gathering processes to support confirmation of baseline metrics and clinical goal setting. The improvement targets were mutually agreed upon and a process for reviewing the data twice per month was established. The final section of the project plan addressed ongoing administration of the program both immediately preceding the program launch and through the duration of the project. For example, the project team determined that an event summary of each case should be created to enable post case reviews. Changes to the manner in which patients and families were notified of the telehealth capabilities were also altered during the course of the pilot.

Assessment Approach

The partnership aimed to reduce the use of the emergency department and hospital for residents of Lorien- Bel Air. To that end, the leadership teams agreed to track three metrics: 30-day readmissions, total admissions and total ED visits for Lorien residents. Data was collected for the prior twelve month rolling period (October 1, 2013- September 30, 2014) to establish baselines and

allow for the development of improvement targets. The baseline performance was gathered via the INTERACT module of the Lorien Electronic Medical Record (EMR), Point Click Care. It reveal a 30-day readmission rate of 13.6%, a hospital admission rate of 4.2 and an ED visit rate of 6.8.

The project team agreed that significant improvement in these metrics was possible with better coordination among organizations. A 25% improvement in each measure was targeted and tracked each month. Beyond the clinical performance, the Lorien clinical team also reviewed cases of patients who by-passed the televisit program and were instead transported to the ED directly. The team sought to determine if there were candidate cases that were missed each month and the monthly dashboard reflected volumes of cases as well as the missed opportunities. The learning from this review was shared with the clinical team, including attending physicians, at Lorien each month.

During the Pilot, the Lorien team also developed and deployed patient and provider satisfaction surveys. This information was helpful in understanding ways to improve communication and set expectations about the new process.

Assessment Limitations

One major limitation with the assessment of the program is the understanding of volume equivalents from year to year. With the new program in place, it is possible that we now have a supply induced demand that would skew our performance relative to the volumes of transfers from previous years. In other words, a patient who may have previously never been sent to the hospital in previous years is now being evaluated via the telehealth program and that case included in the calculation of avoided utilization. However, it is difficult to know with certainty if every case seen via the new process would have been sent to the ED in prior years as there is not an easy way of determining patient acuity for each visit. As a result, the ROI must rely more on the clinical goal *rates* to determine volume reductions, as opposed to the counts of individual cases.

Results of Telehealth Intervention

The telehealth partnership tracked the clinical and volume metrics each month to gauge the success of the program. The 30-day readmission rate was targeted as the most critical measure as it can be the result of process issues at either the hospital or the CCF. The baseline 30-day readmission rate of 13.6% was established with a performance improvement target of 10.2%. During the 11 month pilot, there were six months in which the monthly performance exceeded the 25% reduction target. This will result in an annualized projection of 54 readmissions for the year, down from 83 in the baseline period. This equates to a reduction of approximately 33%, outpacing the goal established at the project outset.

Measure	Numerator/Denominator	Baseline Data 10/1/2013-9/30/2014	Goal	December	January	February	March	April	May	June	July	August	September	October		
Percent change in 30-day readmissions for all patients discharged from an ACH to Lorien Bel Air	Number of patients that were admitted from an ACH to Lorien Bel Air and were re-admitted to an ACH within 30 days of hospital discharge date	83		5	3	6	3	9	6	4	4	4			44	
	Number of patients that were admitted to Lorien Bel Air from an ACH	610		56	56	52	62	56	49	52	54	47	53		484	9.1%
	Percent	13.6%	10.2%	8.9%	5.4%	11.5%	4.8%	16.1%	12.2%	7.7%	7.4%	8.5%			%	

The second clinical measure was the total admission rate for Lorien residents defined as the count of admissions to any acute care hospital divided by the total number of resident days in the month. The rate at baseline was 4.2 with the established pilot target of 3.2. While the partnership did not meet this clinical goal overall, a rate of 2.4 was achieved in each of the final three months, good for a 43% reduction. Overall, the partnership recorded a performance of 3.6 or a 16% reduction.

Measure	Numerator/Denominator	Baseline Data 10/1/2013-9/30/2014	Goal	December	January	February	March	April	May	June	July	August	September	October		
Percent change in hospital admission rate for all conditions for residents admitted from Lorien Bel Air	Number of patients that were admitted to an ACH from Lorien Bel Air	105		10	11	8	7	7	7	11	5	5	5		76	
	Total number of resident days for the month at Lorien Bel Air	24,743		2,034	2,171	2,025	2,210	2,076	2,089	2,008	2,117	2,123	2,047		20,900	3.6
	Rate	4.2	3.2	4.9	5.1	4.0	3.2	3.4	3.4	5.5	2.4	2.4	2.4			

The final clinical measure was the ED visit rate calculated as the total count of patients transferred to an acute care hospital divided by the total resident days in that month. The partnership aimed to achieve a target of 5.1 from the baseline of 6.8. Like the second measure, the partnership demonstrated improvement but finished with an overall rate of 5.5. This resulted in an annualized reduction of ED visits of 42 cases or a reduction of 19%.

Measure	Numerator/Denominator	Baseline Data 10/1/2013-9/30/2014	Goal	December	January	February	March	April	May	June	July	August	September	October		
Percent change in ED Utilization from ambulance transfers from Lorien Bel Air to an ACH	Number of residents that were transferred via ambulance to an ACH	168		11	13	12	13	12	8	14	14	7	11		115	
	Total number of resident days for the month at Lorien Bel Air	24,743		2,034	2,171	2,025	2,210	2,076	2,089	2,008	2,117	2,123	2,047		20,900	5.5
	Rate	6.8	5.1	5.4	6.0	5.9	5.9	5.8	3.8	7.0	6.6	3.3	5.4			

In addition to the clinical metrics, the partnership recorded the number of successful uses of the new clinical process. This included room utilization where the remote ED consultation was not triggered but the patient monitoring and point of care testing were used by the Lorien Attending to assess and treat the patient. We found that only one in five uses of the room necessitated the ED consult because the change in patient condition occurred at a time when a CCF attending was present- frequently between 8 a.m. and 6 p.m. By installing the equipment and protocols, the CCF team is able to address many patient issues that formerly would have be sent to the hospital, even without connecting to the remotely available ED provider. This program has enabled Lorien Bel Air to "work at the top of license."

The partnership tracked the percentage of consultations, Lorien only vs. ED consults, as well as the number that required a transport to the hospital even after use of the exam room. The ED provider reviewed the case and requested that the patient be transferred over in 57% of the televisits compared to only 15% for the Lorien-only uses. This can be explained in part by the conditions that were being assessed by the different groups. The ED providers were 25% more likely to assess a cardiac issue where a conservative management approach is favored.

The Lorien team created and implemented a patient survey and a provider survey administered after each of the uses of the new exam room. The surveys asked residents to rate their experience in the program with regard to privacy, ease of communication, confidence in the process and overall experience. The survey indicated an overall satisfaction score of 3.5 on a 4.0 scale for the entire telemedicine process. Scores were also high for privacy, ease and confidence. Resident feedback included the request to be able to see the ED physician during the evaluation. This information lead to the development of a bi-directional video enhancement to the original program equipment. Additional comments included high satisfaction with convenience and avoiding a transport to acute care.

The physician survey assessed satisfaction with the diagnostic tools, confidence in using the system, and overall experience. The Lorien Attending's comfort with the system grew over the life of the pilot and overall satisfaction was high. Specifically, physicians scored the overall program at the rate of 3.75 on a scale of 4.0. Feedback included high satisfaction with the speed of laboratory results and well as avoiding transports to the ED where visits were managed remotely with the new process. A physician request for a stethoscope lead to the development and implementation of this peripheral by the LifeBot.

Project Implementation Challenges

The project team had to overcome some important challenges to successfully complete the pilot. Of most concern is the ability to compensate ED providers for the care that they provide during the virtual consult which is not typically reimbursable. The ED provider may feel the burden of new liability for these patients without receiving payment. For the first 90 days of the program, the Maryland Emergency Medicine Network physician group provided call coverage dollars to physicians assigned to the program each day even when not scheduled to work in the ED. This also allowed the ED team to prioritize "virtual" patients at Lorien in the same way that they would patients physically present at UMUCH because it gave the provider some reimbursement for cases that are not currently reimbursable. This removed a financial conflict for providers.

The MEMN call payments allowed the partnership to assign a single provider to the system each day such that physician coverage was always available. After the MEMN payment period ended, the ED schedule was more variable depending on when the nine trained physicians were present at UMUCH. This created some windows of time when the telehealth process could not be initiated since there were no trained providers on duty. As we move to expand the program, the partners have agreed to a payment methodology that creates patient parity and eliminates the need for physicians to choose if they can respond to a Lorien call. A contract amendment will be executed that pays the ED provider for each consultant undertaken by the ED provider and paid through the hospital operating funds. Agreement on the payment also allows the partnership to increase the physician coverage such that all ED physicians will be trained and available to respond to the consult request. This allows Lorien to once again have 24 hour coverage for these patients.

Another challenge for the Pilot program is a cultural challenge. In both locations, clinicians needed to gain comfort that the program did not delay or complicate care and that the patient was receiving a beneficial service not harm. This required training with the nursing team to recognize patient conditions that may now be suited for the telehealth process instead of requesting transport to the ED. A process change with the sequence of contacting the Lorien Attending was also important. If contacted prior to the activation of the Telehealth process, Attending and on-call providers were likely to recommend sending the resident to the hospital if he was not present to visualize the patient. Over time, the Attending providers were accepting of the new process as beneficial to patients and it became common that the Lorien physicians would avail themselves of the monitoring and testing capabilities of the exam room without ever triggering an ED telemedicine visit.

Another challenge for wider adoption of this telehealth program is the cost to renovate and equip the room with both the telehealth technology as well as the point of care testing system. As we look

to expand this package of interventions to other Lorien sites, we are facing implementation costs exceeding $80,000. The partnership views the combination of clinical information as important as the video calling capabilities when assessing the program success. For some organizations, this cost may present a barrier to entry.

Lessons Learned

The pilot program afforded the partnership the opportunity to conduct deeper analysis of CCF cases where the patient condition worsened. The clinical team at Lorien reviewed both telehealth cases and EMS transports that did not use the new system to help refine processes. This review included the Lorien Medical Director, COO and the Director of Nursing. The patient's condition was compared to the inclusion and exclusion criteria to conclude if the correct patients were sent to the new telehealth room. The results of these reviews were shared with the frontline nurses at Lorien as well as the physician at UMUCH to ensure that use of telehealth program was optimized.

Implementation of the new telemedicine protocol and tools resulted in increased physician involvement with the care delivery of the facility residents. Over the course of the 11 month program, the exam room was utilized 87 times. Each time the Attending Physician or ED physician was working with new information and tools in effort to aide clinical decision making.

In addition to the case reviews, a periodic analysis of the clinical conditions impacting the patients was also conducted. The data was divided into conditions treated exclusively at Lorien and those conditions that required the connection to the ED providers. The ED was contacted most frequently on Wednesday and all but one consultation occurred between 6 a.m. and 8 p.m. Cases addressed completely by the Lorien team were similarly dispersed during the day, but nearly 10 case occurred between 8 p.m. and 4 a.m. Clinically, the ED providers were contacted for Cardiac or Respiratory issues while Lorien was able to address issues relating to Neurologic and Genito Urinary issues.

One important operational lesson learned pertained to the patient and family expectation. Some family members initially resisted the notion of using telehealth to assess and treat their loved one. It is important to explain to patients what the process is and how the technology works prior to the stress of a worsening condition. As a result, Lorien included information about the program in the admission packet given to each patient and family.

Patient satisfaction with the system increased as the process gained traction. In one case, the patient was relived to avoid a trip to the emergency department on a day when UMUCH was experiencing capacity issues due to seasonal flu. The clinical team was able to adjust IV fluids and tract the patient's response hours later all while the patient remained at Lorien. Toward the end of the pilot, a Long Term Care resident experienced a worsening condition. The family requested that the telehealth process was implemented because they feared that the patient was near death already. In this case, the patient was able to remain at Lorien and passed peacefully in his residence surrounded by family members. This was a less stressful alternative to transferring the patient to the hospital where he might have passed without his family present.

Cost Effectiveness

In determining the return on investment for this program the partners consider several factors. The most important of which is the variable cost savings associated with avoided ED visits and inpatient or observation hospital stays. The finance team at UMUCH calculates that each avoided ED visit results in a cost savings of approximately $125, while an inpatient or observation day eschewed can save up to $450. Given the admission percentage and average length of stay, the savings to the hospital under the Global Budget Revenue payment methodology exceeds $70,000 annually. Including at-risk quality based incentives and penalties and each case may have a greater impact on the hospital finances that just the variable cost. Using conservative assumptions this program should meet the breakeven point near the end of the first year.

Another component of the cost effectiveness accrues to the payer. Each patient transport via private or EMS ambulance costs the Medicare between $600 -$750. By this measure, the Centers for Medicare and Medicaid saved approximately $25,000 as the result of reducing transports from Lorien to UMUCH.

Beyond the finances, this new process has reduced the amount of patients transferred to the hospital which can be beneficial to patients. Having the ability to monitor and alter treatment plans without a transfer alleviates the potential for repetitive tests, infection and other hospital complications. Further, patients with mental status issues or dementia can benefit from remaining in a single treatment environment. It is also perceived that the clinical teams at both institutions have elevated performance by having a better understanding of the continuum of care. The Lorien team has been eager to use this new clinical process and the ED providers have a greater understanding of the expectations when a patient is transferred to UMUCH.

Sustainability

Given the success of the pilot program the four participating organizations have agreed to expand this program to the remaining Lorien sites in Harford County, Lorien Havre de Grace and Lorien Riverside. Outfitting each room costs approximately $80,000 for the telehealth equipment, the point of care testing and routine exam room equipment such as the bed. The project is being jointly funded by Lorien and UMUCH recognizing that the program has a clinical impact on patients and helps reduce avoidable utilization from the hospital. The hospital will continue to compensate the provider group to provide the ED consultation which is not currently reimbursable through Medicare or Medicaid. UMUCH estimates that the cost of this investment will be covered through reduced volume and cost savings and break even no later than 18 months from implementation.

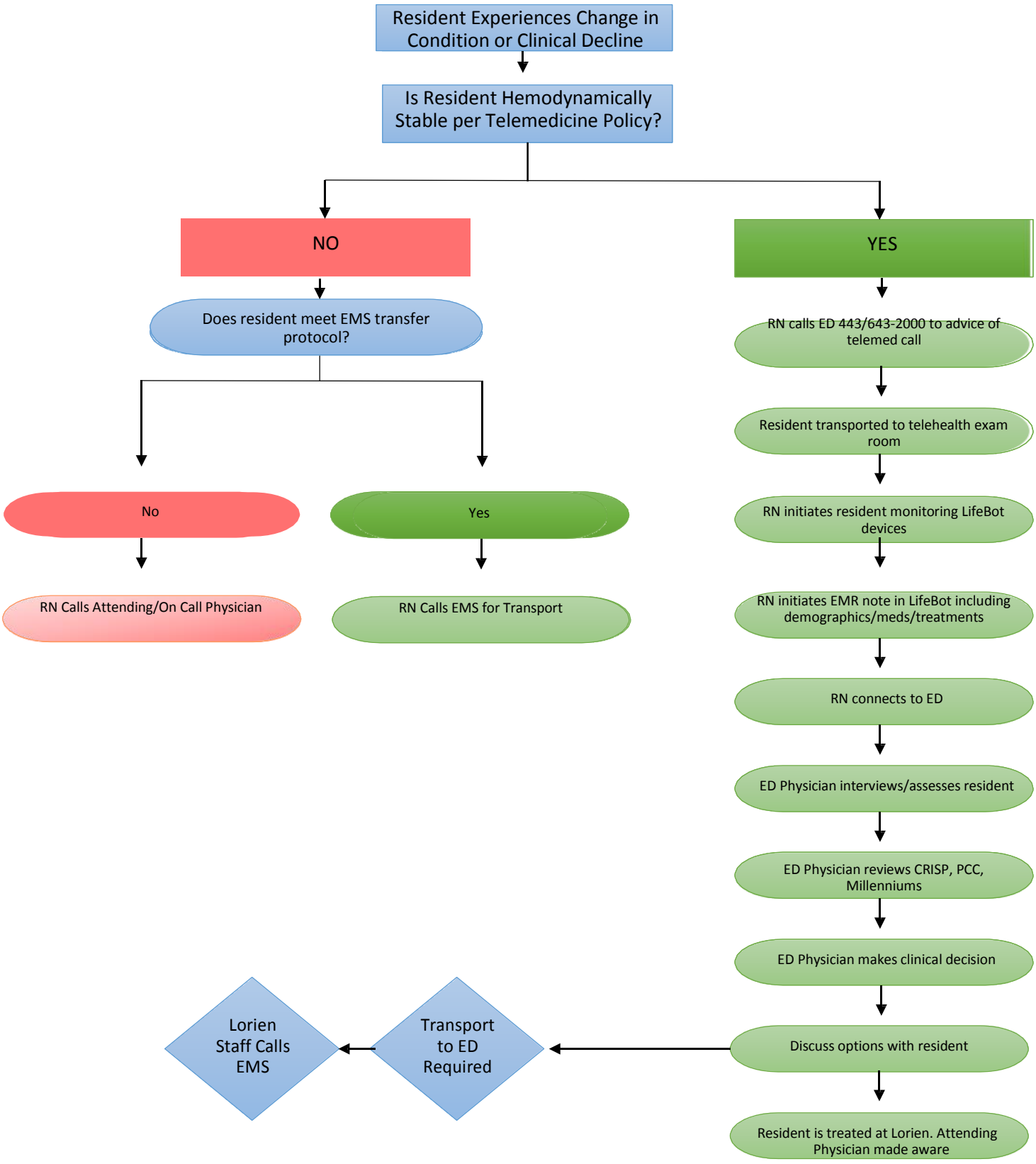
Lorien Health is also exploring additional applications of this telehealth system as part of their new Lorien at Home program. This program provides in home skilled nursing with dedicated nursing coverage connected to a provider via telehealth. Additional consideration is being given to a program developed in Assisted Living Facilities.

Closing

The successful telehealth program in Harford County required partnership that is atypical of healthcare providers. Alignment of interests is critical for any project, but this endeavor needed agreement on clinical workflows, service levels and the development of an alternate payment process for the emergency department physicians. A spirit of cooperation was evident from the first meeting and remained as the pilot progressed, allowing for a smooth refinement of process throughout. Organizations contemplating telehealth programs must be selective of the technology and your partners to ensure success.

Appendices
(on the subsequent pages)

Telehealth Workflow



New Lorien monitoring capabilities via LifeBot

- ePCR Electronic Patient Call Report
- ECG 12 Lead
- Peripheral Pulse
- Pulse Oximeter
- Respirations
- Two Temperatures
- NIBP and Mean Blood Pressure
- Heart Rate
- Ultra Sound

Medications common to both Lorien and UCMC

Cardiac Medications:

- Aspirin 81mg Chewable
- Heparin 10,0000 units/ml injection
- Atropine 1mg/ml injection
- Nitorquick (nitroglycerin)0.4mg tab

Metabolic Medications

- Dextrose 50% injection
- Intaglucose/ Glutose 15

Allergic Reaction

- Diphenhydramine 50mg/ml injection
- Epinephrine1:1000 (1mg/ml) injection
- Furosemide 10mg/ml 4ml injection

Antibiotics

- Vancomycin IV
- Ancef 1 gm
- Levaquin IV
- Rocephin IV
- Levaquin IV
- Zithromax IV
- Clindamycin IV
- Unasyn IV
- Zoysn

Asthma and Miscellaneous

- Decadron IV
- Albuterol

Exam Room Utilization Survey

Resident Name: _____

Date:

- Atrovent
- Haldol
- Vitamin K injection 10mg/ml
- Naloxone (narcan) 0.4mg/ml injection
- Ativan Injection

IV Fluids common to both Lorien and UCMC

- 0.9% Normal Saline 1000 ml
- 0.9% Normal Saline 250 ml
- 0.9% Normal Saline 50 ml
- D5W 1000 ml
- D50 50 ml
- Normal Saline Flushes 100 ml
- Heparin Flush 10 units/ml
- Dextrose 5% +.45% Normal Saline
- Dextrose 5% with 20 KCL
- Dextrose 5% +.45%NS with 20 KCL
- 0.9% Normal Saline with 20KCL
- Dextrose 5% with 40kcl
- Dextrose 5% + 0.45% NS with 40KCL
- 0.9% Normal Saline with 40KCL

Exam Room Utilization Survey

Resident Name: _____

Date:

Point of Care Testing at Lorien

- WBC (White Blood Cell)
- Hb (Hemoglobin)
- Hct (Hematocrit)
- Chem 7 (Basic Metabolic Panel)
- INR (International Normalized Ratio)
- Routine UA (Urine Analysis)

Exam Room Utilization Survey

Resident Name: _____

Date: _____

Time: _____

Lorien Nurse: _____

Consulting Physician: _____

Consulting Physician

How would you rate your experience of talking with the nurse and patient in the Exam Room?	☐ Poor ☐ Fair ☐ Good ☐ Excellent ☐ Not Applicable
How would you rate your experience with seeing the patient in the Exam Room?	☐ Poor ☐ Fair ☐ Good ☐ Excellent ☐ Not Applicable
How well did the LifeBot connection and peripheral equipment work?	☐ Poor ☐ Fair ☐ Good ☐ Excellent ☐ Not Applicable
How well were you able to get diagnostic information to determine a treatment plan?	☐ Poor ☐ Fair ☐ Good ☐ Excellent ☐ Not Applicable
How well equipped and supplied was the Exam Room to meet your needs?	☐ Poor ☐ Fair ☐ Good ☐ Excellent ☐ Not Applicable
How would rate your confidence in using the Exam Room?	☐ Poor ☐ Fair ☐ Good ☐ Excellent ☐ Not Applicable
How would you rate your overall experience using the Exam Room?	☐ Poor ☐ Fair ☐ Good ☐ Excellent ☐ Not Applicable
Additional Comments:	

Exam Room Utilization Survey

Resident Name: _____

Date: _____

Time: _____

Lorien Nurse: _____

Consulting Physician: _____

Resident/Patient

Do you feel your privacy was maintained during your time in the Exam Room?	☐ Yes ☐ No
How would you rate your experience with talking to the physician at the hospital?	☐ Poor ☐ Fair ☐ Good ☐ Excellent ☐ Not Applicable
How would you rate your experience with seeing the physician at the hospital?	☐ Poor ☐ Fair ☐ Good ☐ Excellent ☐ Not Applicable
How would you rate your confidence in using the Exam Room?	☐ Poor ☐ Fair ☐ Good ☐ Excellent ☐ Not Applicable
How would you rate your overall experience using the Exam Room?	☐ Poor ☐ Fair ☐ Good ☐ Excellent ☐ Not Applicable
Additional Comments:	

Lead Lorien Nurse

How would you rate your experience with hearing the physician at the hospital?	☐ Poor ☐ Fair ☐ Good ☐ Excellent ☐ Not Applicable
How would you rate your experience with seeing the physician and the hospital?	☐ Poor ☐ Fair ☐ Good ☐ Excellent ☐ Not Applicable
How well did the LifeBot connection and peripheral equipment work?	☐ Poor ☐ Fair ☐ Good ☐ Excellent ☐ Not Applicable
How well equipped and supplied was the Exam Room to meet your needs?	☐ Poor ☐ Fair ☐ Good ☐ Excellent ☐ Not Applicable
How would rate your confidence in using the Exam Room?	☐ Poor ☐ Fair ☐ Good ☐ Excellent ☐ Not Applicable
How would you rate your overall experience using the Exam Room?	☐ Poor ☐ Fair ☐ Good ☐ Excellent ☐ Not Applicable
Additional Comments:	

Acknowledgements

This partnership would not have been possible without the vision and leadership of the organizations.

We wish to thank the Maryland Healthcare Commission for support throughout the project. The grant award enabled the implementation of this use case at a time when health systems are working diligently to reduce unnecessary utilization. The Center for Health Information Technology and Innovative Care Delivery lead by David Sharp and supported by Lynn Albizo, Angela Evatt and Marya Kahn played a critical role in this program.

The Lorien Health System team under the direction of CEO Louis G. Grimmel, Sr. was creative and flexible, having the ability to alter workflows and implement changes required to ensure attainment of our goals. Wayne Brannock, Jim Hummer, Ed Walter, Cheryl Bayne, Susan Carroll and Suresh Dhanjani, M.D. provided the day-to-day direction throughput the pilot.

Lyle E. Sheldon, CEO of University of Maryland Upper Chesapeake Health provided the leadership and encouragement to pursue this program. He challenged the typical health system thinking and inspired the hospital team to "blur the lines" between the acute care setting and the continuing care facilities. The IT team of Rick Casteel and Rick Buchman was also vital to the success.

The Maryland Emergency Management Network, led by Brian J. Browne, M.D. provided funding support and enthusiasm for the pilot. Locally, Fermin Barrueto, M.D. Chair of Emergency Medicine at Upper Chesapeake and his team adapted to this new model of care delivery and extend their clinical expertise to the skilled nursing facility.

Finally, we must thank the technology vendors, Kerry Fletcher at Lifebot as well as Randall and Michael Citrano at Citrano Laboratories for providing the infrastructure required support clinical decision- making.

Appendices

Appendix A: Telemedicine Facts

The fact sheet below includes facts regarding telemedicine provided by the American Telemedicine Association. This information is available at http://www.americantelemed.org/about-telemedicine/what-is-telemedicine

What is Telemedicine?

Formally defined, telemedicine is the use of medical information exchanged from one site to another via electronic communications to improve a patient's clinical health status. Telemedicine includes a growing variety of applications and services using two-way video, email, smart phones, wireless tools and other forms of telecommunications technology.

Starting out over 40 years ago with demonstrations of hospitals extending care to patients in remote areas, the use of telemedicine has spread rapidly and is now becoming integrated into the ongoing operations of hospitals, specialty departments, home health agencies, private physician offices as well as consumer's homes and workplaces.

Telemedicine is not a separate medical specialty. Products and services related to telemedicine are often part of a larger investment by healthcare institutions in either information technology or the delivery of clinical care. Even in the reimbursement fee structure, there is usually no distinction made between services provided on site and those provided through telemedicine and often no separate coding required for billing of remote services. ATA has historically considered telemedicine and telehealth to be interchangeable terms, encompassing a wide definition of remote healthcare. Patient consultations via video conferencing, transmission of still images, e-health including patient portals, remote monitoring of vital signs, continuing medical education, consumer-focused wireless applications and nursing call centers, among other applications, are all considered part of telemedicine and telehealth.

While the term telehealth is sometimes used to refer to a broader definition of remote healthcare that does not always involve clinical services, ATA uses the terms in the same way one would refer to medicine or health in the common vernacular. Telemedicine is closely allied with the term health information technology (HIT). However, HIT more commonly refers to electronic medical records and related information systems while telemedicine refers to the actual delivery of remote clinical services using technology.

What Services Can Be Provided By Telemedicine?

Sometimes telemedicine is best understood in terms of the services provided and the mechanisms used to provide those services. Here are some examples:

- **Primary care and specialist referral services** may involve a primary care or allied health professional providing a consultation with a patient or a specialist assisting the primary care physician in rendering a diagnosis. This may involve the use of live interactive video or the use of store and forward transmission of diagnostic images, vital signs and/or video clips along with patient data for later review.

- **Remote patient monitoring**, including home telehealth, uses devices to remotely collect and send data to a home health agency or a remote diagnostic testing facility (RDTF) for interpretation. Such applications might include a specific vital sign, such as blood glucose or heart ECG or a variety of indicators for homebound patients. Such services can be used to supplement the use of visiting nurses.

- **Consumer medical and health information** includes the use of the Internet and wireless devices for consumers to obtain specialized health information and on-line discussion groups to provide peer-to-peer support.

- **Medical education** provides continuing medical education credits for health professionals and special medical education seminars for targeted groups in remote locations.

What Delivery Mechanisms Can Be Used?

- **Networked programs** link tertiary care hospitals and clinics with outlying clinics and community health centers in rural or suburban areas. The links may use dedicated high-speed lines or the Internet for telecommunication links between sites. ATA estimates the number of existing telemedicine networks in the United States at roughly 200 providing connectivity to over 3,000 sites.

- **Point-to-point connections** using private high speed networks are used by hospitals and clinics that deliver services directly or outsource specialty services to independent medical service providers. Such outsourced services include radiology, stroke assessment, mental health and intensive care services.

- **Monitoring center links** are used for cardiac, pulmonary or fetal monitoring, home care and related services that provide care to patients in the home. Often normal land-line or wireless connections are used to communicate directly between the patient and the center although some systems use the Internet.

- **Web-based e-health patient service sites** provide direct consumer outreach and services over the Internet. Under telemedicine, these include those sites that provide direct patient care.

Appendix B: Md. Code Ann., Insurance § 15–139

Begin quoted text

Code of Maryland

Article – Insurance

§15–139.

(a) (1) In this section, "telemedicine" means, as it relates to the delivery of health care services, the use of interactive audio, video, or other telecommunications or electronic technology by a licensed health care provider to deliver a health care service within the scope of practice of the health care provider at a site other than the site at which the patient is located.

(2) "Telemedicine" does not include:

(i) an audio–only telephone conversation between a health care provider and a patient;

(ii) an electronic mail message between a health care provider and a patient; or

(iii) a facsimile transmission between a health care provider and a patient.

(b) This section applies to:

(1) insurers and nonprofit health service plans that provide hospital, medical, or surgical benefits to individuals or groups on an expense–incurred basis under health insurance policies or contracts that are issued or delivered in the State; and ·

(2) health maintenance organizations that provide hospital, medical, or surgical benefits to individuals or groups under contracts that are issued or delivered in the State.

(c) An entity subject to this section:

(1) shall provide coverage under a health insurance policy or contract for health care services appropriately delivered through telemedicine; and

(2) may not exclude from coverage a health care service solely because it is provided through telemedicine and is not provided through an in–person consultation or contact between a health care provider and a patient.

(d) An entity subject to this section:

(1) shall reimburse a health care provider for the diagnosis, consultation, and treatment of an insured patient for a health care service covered under a health insurance policy or contract that can be appropriately provided through telemedicine;

(2) is not required to:

(i) reimburse a health care provider for a health care service delivered in person or through telemedicine that is not a covered benefit under the health insurance policy or contract; or

(ii) reimburse a health care provider who is not a covered provider under the health insurance policy or contract; and

(3) (i) may impose a deductible, copayment, or coinsurance amount on benefits for health care services that are delivered either through an in–person consultation or through telemedicine;

(ii) may impose an annual dollar maximum as permitted by federal law; and

(iii) may not impose a lifetime dollar maximum.

(e) An entity subject to this section may undertake utilization review, including preauthorization, to determine the appropriateness of any health care service whether the service is delivered through an in–person consultation or through telemedicine if the appropriateness of the health care service is determined in the same manner.

(f) A health insurance policy or contract may not distinguish between patients in rural or urban locations in providing coverage under the policy or contract for health care services delivered through telemedicine.

(g) A decision by an entity subject to this section not to provide coverage for telemedicine in accordance with this section constitutes an adverse decision, as defined in § 15–10A–01 of this title, if the decision is based on a finding that telemedicine is not medically necessary, appropriate, or efficient.

Appendix C: Telehealth Round Two & Three Abstracts

The below includes abstracts that summarize round two and three telehealth grants awarded by MHCC that are currently being implemented in Maryland. Lessoned learned from round one grants are used to inform the implementation of round two and three grants.

Telehealth Technology Project – Round Two

In June 2015, the Maryland Health Care Commission (MHCC) awarded a second round of telehealth grants to study the impact of remote patient monitoring on hospital re-admission in various settings to reduce hospital encounters. Telehealth is the use of electronic information and telecommunications technologies such as video-conferencing to support clinical health care, patient and professional health-related education, public health, and health administration. A total of $80,000 was awarded in grant funds, and a 2:1 match is required of each grantee. In addition to telehealth technology, the grantees are required to use a nationally certified electronic health record and services of the State-Designated Health Information Exchange, the Chesapeake Regional Information System for our Patients (CRISP). The telehealth projects are scheduled for completion in the summer of 2016. A summary of each of the three projects and the current status is below:

Crisfield Clinic, LLC

Crisfield Clinic, a family practice clinic in Somerset County, is deploying telehealth mobile devices to help middle school and high aged patients manage chronic conditions, such as asthma, diabetes, childhood obesity, and behavioral health issues. Crisfield Clinic utilizes a Community Health Worker to facilitate care coordination. The project aims to improve clinical data indicators, reduce lost school days, reduce emergency department visits, and improve patient's perception of health.

Lorien Health Systems (Howard County)

Lorien Health Systems, a skilled nursing facility and residential service agency, is using telehealth to address hospital prevention quality indicator (PQI) conditions, including uncontrolled diabetes, congestive heart failure, and hypertension among patients that are discharged from the skilled nursing facility to home. The project provides 24/7 access to a care coordinator and installs telemonitoring devices in patients' home to improve care and avoid hospital admissions. Services are provided to patients discharged home from its Howard County facility.

Union Hospital of Cecil County

Union Hospital of Cecil County is using telehealth to address several hospital PQI conditions including diabetes, chronic obstructive pulmonary disease, hypertension, heart failure, and asthma among patients discharged from the hospital to home. The hospital provides chronic care patients with mobile tablets and peripheral devices to capture blood pressure, pulse, and weight, and provide patient education to facilitate patient monitoring. The use of telehealth technology is intended to improve access to care, enable early provision of appropriate treatment, and reduce hospital encounters.

Telehealth Technology Project – Round Three

In December 2015, MHCC awarded a third round of telehealth grants totaling approximately $90,000 to demonstrate the impact of using telehealth technology to improve the overall health of the population being served and the patient experience. Grantees are required to implement the technology in a meaningful way, including developing clinical protocols to demonstrate improved outcomes. Grantees are also required to use an electronic health record and the services of the State-Designated health information exchange, the Chesapeake Regional Information System for our Patients. A 2:1 financial match is required from each grantee.

Associated Black Charities

Associated Black Charities (ABC) of Dorchester County will utilize telehealth technology to facilitate remote video consultations with patients in real-time. ABC is a community association that assists minority and rural communities with navigating the health care system in Maryland's Mid-shore Region Health Enterprise Zone (HEZ).[56] Community health workers deployed by ABC will meet with patients in their homes and use mobile tablets to connect patients with a licensed nurse practitioner at Choptank Community Health System, Inc. (CCHS). The remote consultations will include primary care recommendations and behavioral health support. ABC will partner with Cyfluent, a Maryland-based vendor to provide technology services, including telehealth video software that will allow the remote consultations to be fully integrated into patient's electronic health record (EHR) at CCHS. The project goal is to improve the health of patients in the Mid-shore Region HEZ by providing timely access to care and helping reduce costly interventions during a crisis, such as emergency hospital visits and admissions.

Gerald Family Care

Gerald Family Care, LLC (GFC) will utilize telehealth technology to exchange images and provide remote video consultations between GFC family practices in Prince Georges County and specialists at Dimensions Health System (DHS) to connect patients in real-time with specialty care. DHS specialists will provide gastroenterology, orthopedics, neurology, and behavioral health services remotely from Laurel Regional Hospital and Prince Georges Hospital Center. One family practice location will also have a gastro scope peripheral device that will allow a gastroenterologists located at a Dimension's hospital to view patient's esophagus and stomach to conduct a remote gastroenterology exam. GFC will partner with a Maryland-based vendor, Zane Networks, to provide technology services. The project aims to reduce patient waiting times and remove distance and transportation barriers for patients in need of specialty care. The goal is to increase access to specialty services to help improve patient care and reduce hospital readmissions and costs.

[56] Health Enterprise Zones are contiguous geographic areas designated by the Secretary of the Department of Health and Mental Hygiene in collaboration with the Maryland Community Health Resources Commission that have measurable and documented economic disadvantage and poor health outcomes. Five zones have been identified to receive targeted state resources to reduce health disparities, improve health outcomes, and reduce health costs and hospital admissions and readmissions in those zones. For more information, visit: http://dhmh.maryland.gov/healthenterprisezones/SitePages/Home.aspx

Union Hospital of Cecil County

Union Hospital of Cecil County (UHCC) will provide chronic care patients discharged to home with mobile tablets and peripheral devices[57] that allow UHCC to monitor the status of patients' condition. Use of this technology will allow patients to remotely share clinical information with the UHCC's care management team, including blood pressure, temperature, pulse, weight and glucose levels. The mobile tablets will enable the patient data being monitored to be integrated into reports that are shared with providers in primary care and emergency department settings and also provide on-demand patient education. The project expands upon the current telehealth grant UHCC received from the Maryland Health Care Commission in October 2014 by supporting additional data sharing with emergency department and primary care physicians and allowing practitioners to view monitoring data while signed into the hospital's EHR. UHCC will partner with AT&T and Vivify to provide technology services for the project. The project goal is to utilize telehealth technology to proactively monitor patients' health status in real-time and support patient education, helping to improve health outcomes and minimize the need for emergency department visits and/or readmissions.

[57] Peripheral devices include blood pressure cup, thermometer, pulseometer and scale that synch with the mobile tablet and allow transmission of information to remote site.

Appendix D: Reimbursable Medicare Telemedicine Services

CMS released the below fact sheet on telehealth reimbursable services in the Medicare Fee-for-Service program. Available at: https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/telehealthsrvcsfctsht.pdf.

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Telehealth Services

RURAL HEALTH SERIES

Please note: The information in this publication applies only to the Medicare Fee-For-Service Program (also known as Original Medicare).

This publication provides the following information on calendar year (CY) 2016 Medicare telehealth services:

- Originating sites;
- Distant site practitioners;
- Telehealth services;
- Billing and payment for professional services furnished via telehealth;
- Billing and payment for the originating site facility fee;
- Resources; and
- Lists of helpful websites and Regional Office Rural Health Coordinators.

When "you" is used in this publication, we are referring to physicians or practitioners at the distant site.

Medicare pays for a limited number of Part B services furnished by a physician or practitioner to an eligible beneficiary via a telecommunications system. For eligible telehealth services, the use of a telecommunications system substitutes for an in-person encounter.

ORIGINATING SITES

An originating site is the location of an eligible Medicare beneficiary at the time the service furnished via a telecommunications system occurs. Medicare beneficiaries are eligible for telehealth services only if they are presented from an originating site located in:

- A rural Health Professional Shortage Area (HPSA) located either outside of a Metropolitan Statistical Area (MSA) or in a rural census tract; or
- A county outside of a MSA.

ICN 901705 December 2015

The Health Resources and Services Administration (HRSA) determines HPSAs, and the United States (U.S.) Census Bureau determines MSAs. You can access HRSA's Medicare Telehealth Payment Eligibility Analyzer to determine a potential originating site's eligibility for Medicare telehealth payment at http://datawarehouse.hrsa.gov/telehealthAdvisor/telehealthEligibility.aspx on the HRSA website.

Entities that participate in a Federal telemedicine demonstration project approved by (or receiving funding from) the Secretary of the U.S. Department of Health & Human Services as of December 31, 2000, qualify as originating sites regardless of geographic location.

Each CY, the geographic eligibility of an originating site is established based on the status of the area as of December 31st of the prior CY. Such eligibility continues for the full CY.

The originating sites authorized by law are:

- The offices of physicians or practitioners;
- Hospitals;
- Critical Access Hospitals (CAHs);
- Rural Health Clinics;
- Federally Qualified Health Centers;
- Hospital-based or CAH-based Renal Dialysis Centers (including satellites);
- Skilled Nursing Facilities (SNFs); and
- Community Mental Health Centers (CMHCs).

Note: Independent Renal Dialysis Facilities are not eligible originating sites.

DISTANT SITE PRACTITIONERS

Practitioners at the distant site who may furnish and receive payment for covered telehealth services (subject to State law) are:

- Physicians;
- Nurse practitioners (NPs);
- Physician assistants (PAs);
- Nurse-midwives;
- Clinical nurse specialists (CNSs);
- Certified registered nurse anesthetists;

- Clinical psychologists (CPs) and clinical social workers (CSWs). CPs and CSWs cannot bill for psychiatric diagnostic interview examinations with medical services or medical evaluation and management services under Medicare. These practitioners may not bill or receive payment for Current Procedural Terminology (CPT) codes 90792, 90833, 90836, and 90838; and
- Registered dietitians or nutrition professionals.

TELEHEALTH SERVICES

As a condition of payment, you must use an interactive audio and video telecommunications system that permits real-time communication between you, at the distant site, and the beneficiary, at the originating site. Asynchronous "store and forward" technology is permitted only in Federal telemedicine demonstration programs in Alaska or Hawaii.

The chart on pages 3–4 provides the CY 2016 list of Medicare telehealth services.

CY 2016 Medicare Telehealth Services

Service	Healthcare Common Procedure Coding System (HCPCS)/CPT Code
Telehealth consultations, emergency department or initial inpatient	HCPCS codes G0425–G0427
Follow-up inpatient telehealth consultations furnished to beneficiaries in hospitals or SNFs	HCPCS codes G0406–G0408
Office or other outpatient visits	CPT codes 99201–99215
Subsequent hospital care services, with the limitation of 1 telehealth visit every 3 days	CPT codes 99231–99233
Subsequent nursing facility care services, with the limitation of 1 telehealth visit every 30 days	CPT codes 99307–99310
Individual and group kidney disease education services	HCPCS codes G0420 and G0421
Individual and group diabetes self-management training services, with a minimum of 1 hour of in-person instruction to be furnished in the initial year training period to ensure effective injection training	HCPCS codes G0108 and G0109
Individual and group health and behavior assessment and intervention	CPT codes 96150–96154
Individual psychotherapy	CPT codes 90832–90834 and 90836–90838
Telehealth Pharmacologic Management	HCPCS code G0459
Psychiatric diagnostic interview examination	CPT codes 90791 and 90792
End-Stage Renal Disease (ESRD)-related services included in the monthly capitation payment	CPT codes 90951, 90952, 90954, 90955, 90957, 90958, 90960, and 90961
End-Stage Renal Disease (ESRD)-related services for home dialysis per full month, for patients younger than 2 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents (effective for services furnished on and after January 1, 2016)	CPT code 90963
End-Stage Renal Disease (ESRD)-related services for home dialysis per full month, for patients 2-11 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents (effective for services furnished on and after January 1, 2016)	CPT code 90964
End-Stage Renal Disease (ESRD)-related services for home dialysis per full month, for patients 12-19 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents (effective for services furnished on and after January 1, 2016)	CPT code 90965
End-Stage Renal Disease (ESRD)-related services for home dialysis per full month, for patients 20 years of age and older (effective for services furnished on and after January 1, 2016)	CPT code 90966
Individual and group medical nutrition therapy	HCPCS code G0270 and CPT codes 97802–97804
Neurobehavioral status examination	CPT code 96116
Smoking cessation services	HCPCS codes G0436 and G0437 and CPT codes 99406 and 99407
Alcohol and/or substance (other than tobacco) abuse structured assessment and intervention services	HCPCS codes G0396 and G0397
Annual alcohol misuse screening, 15 minutes	HCPCS code G0442
Brief face-to-face behavioral counseling for alcohol misuse, 15 minutes	HCPCS code G0443

CY 2016 Medicare Telehealth Services (cont.)

Service	Healthcare Common Procedure Coding System (HCPCS)/CPT Code
Annual depression screening, 15 minutes	HCPCS code G0444
High-intensity behavioral counseling to prevent sexually transmitted infection; face-to-face, individual, includes: education, skills training and guidance on how to change sexual behavior; performed semi-annually, 30 minutes	HCPCS code G0445
Annual, face-to-face intensive behavioral therapy for cardiovascular disease, individual, 15 minutes	HCPCS code G0446
Face-to-face behavioral counseling for obesity, 15 minutes	HCPCS code G0447
Transitional care management services with moderate medical decision complexity (face-to-face visit within 14 days of discharge)	CPT code 99495
Transitional care management services with high medical decision complexity (face-to-face visit within 7 days of discharge)	CPT code 99496
Psychoanalysis	CPT codes 90845
Family psychotherapy (without the patient present)	CPT code 90846
Family psychotherapy (conjoint psychotherapy) (with patient present)	CPT code 90847
Prolonged service in the office or other outpatient setting requiring direct patient contact beyond the usual service; first hour	CPT code 99354
Prolonged service in the office or other outpatient setting requiring direct patient contact beyond the usual service; each additional 30 minutes	CPT code 99355
Prolonged service in the inpatient or observation setting requiring unit/floor time beyond the usual service; first hour (list separately in addition to code for inpatient evaluation and management service) (effective for services furnished on and after January 1, 2016)	CPT code 99356
Prolonged service in the inpatient or observation setting requiring unit/floor time beyond the usual service; each additional 30 minutes (list separately in addition to code for prolonged service) (effective for services furnished on and after January 1, 2016)	CPT code 99357
Annual Wellness Visit, includes a personalized prevention plan of service (PPPS) first visit	HCPCS code G0438
Annual Wellness Visit, includes a personalized prevention plan of service (PPPS) subsequent visit	HCPCS code G0439

For ESRD-related services, a physician, NP, PA, or CNS must furnish at least one "hands on" visit (not telehealth) each month to examine the vascular access site.

BILLING AND PAYMENT FOR PROFESSIONAL SERVICES FURNISHED VIA TELEHEALTH

Submit claims for telehealth services using the appropriate CPT or HCPCS code for the professional service along with the telehealth modifier GT, "via interactive audio and video telecommunications systems" (for example, 99201 GT). By coding and billing the GT modifier with a covered telehealth procedure code, you are certifying that the beneficiary was present at an eligible originating site when you furnished the telehealth service. By coding and billing the GT modifier with a covered ESRD-related service telehealth code, you are certifying that you furnished one "hands on" visit per month to examine the vascular access site.

For Federal telemedicine demonstration programs in Alaska or Hawaii, submit claims using the appropriate CPT or HCPCS code for the professional service along with the telehealth modifier GQ if you performed telehealth services "via an asynchronous telecommunications system" (for example, 99201 GQ). By coding and billing the GQ modifier, you are certifying that the asynchronous medical file was collected and transmitted to you at the distant site from a Federal telemedicine demonstration project conducted in Alaska or Hawaii.

You should bill the Medicare Administrative Contractor (MAC) for covered telehealth services. Medicare pays you the appropriate amount under the Medicare Physician Fee Schedule (PFS) for telehealth services. When you are located in a CAH and reassigned your billing rights to a CAH that elected the Optional Payment Method, the CAH bills the MAC for telehealth services and the payment amount is 80 percent of the Medicare PFS for telehealth services.

BILLING AND PAYMENT FOR THE ORIGINATING SITE FACILITY FEE

Originating sites are paid an originating site facility fee for telehealth services as described by HCPCS code Q3014. Bill the MAC for the originating site facility fee, which is a separately billable Part B payment.

Note: When a CMHC serves as an originating site, the originating site facility fee does not count toward the number of services used to determine payment for partial hospitalization services.

RESOURCES

The chart below provides telehealth services resource information.

Telehealth Services Resources

For More Information About...	Resource
Telehealth Services	https://www.cms.gov/Medicare/Medicare-General-Information/Telehealth on the Centers for Medicare & Medicaid Services (CMS) website Chapter 15 of the "Medicare Benefit Policy Manual" (Publication 100-02) on the CMS website Chapter 12 of the "Medicare Claims Processing Manual" (Publication 100-04) on the CMS website
Health Professional Shortage Areas	Medicare Learning Network® (MLN) publication titled "Health Professional Shortage Area (HPSA) Physician Bonus, HPSA Surgical Incentive Payment, and Primary Care Incentive Payment Programs" on the CMS website
All Available MLN Products	"MLN Catalog" on the CMS website
Provider-Specific Medicare Information	MLN publication titled "MLN Guided Pathways: Provider Specific Medicare Resources" on the CMS website
Medicare Information for Beneficiaries	https://www.medicare.gov on the CMS website

Appendix E: Telehealth Maryland Medical Assistance Policy

Below is information regarding the Maryland Medical Assistance Program telemedicine reimbursement policy. For complete information on the telemedicine service model, provider and participant eligibility, covered services and reimbursement, and for online access to the Telemedicine Provider Addendum please refer to the 2014 Telemedicine Provider Manual at: https://mmcp.dhmh.maryland.gov/Documents/Telemed_Provider_Manual_Append_2014.pdf.

Maryland Medical Assistance Program Telemedicine Reimbursement

Effective October 1, 2014, the Maryland Medical Assistance Program began to reimburse approved providers for services rendered to Program participants via telemedicine statewide. Participants may be in the fee-for-service program, a managed care organization (MCO), or a long-term services and supports waiver program. Using "Hub-and-Spoke" models, providers mutually approved by DHMH may engage in agreements to both deliver care and bill Medicaid for approved telemedicine services, using fee-for-service reimbursement practices.

Billing Codes and Modifiers

Approved telemedicine providers must submit claims in the same manner the provider uses for in-person services (i.e., paper CMS 1500 forms or 832 electronic submission).

All telemedicine providers, both originating and distant, must bill the appropriate CPT code or revenue code with a -GT modifier when rendering services via telemedicine. The -GT modifier indicates the services were provided via an interactive audio and video telecommunication system.

Billing in the Telemedicine Program: Originating sites

Office Billers

- Using the -GT modifier, evaluation and management (E&M) codes 99201-99205; 99211-99215 for community outpatient services or 99281-99285 and 99288 for emergency room outpatient services; and
- If the service location is a physician's office: HCPCS code Q3014 for the telehealth originating site facility fee; or

Hospital Billers

- If the service location is a hospital: revenue code 0780 for the standard facility fee; or
- If the service location is a an out-of-state hospital: HCPCS code Q3014 for the telemedicine originating site facility fee

Billing in the Telemedicine Program: Distant sites

- E&M codes 99241-99245 99251-99255 for consultation services along with the appended –GT modifier.

Please note: distant site providers should NOT bill the Q-code or the 0780 revenue code.

For more information on Physicians' Services billing, you may consult the 2014 Physicians' Services Provider Fee Manual at: dhmh.maryland.gov/providerinfo.

Eligible Providers and Enrollment in the Telemedicine Program

Providers interested in participating in the telemedicine program must already be enrolled as Medicaid Providers. If you are not enrolled as a Medicaid Provider, visit: dhmh.maryland.gov/providerinfo

Interested providers enrolled in the Medicaid Program must complete and submit a Telemedicine Provider Addendum. Providers are expected to outline their plan for participation using this addendum.

Appendix F: Md. Code Ann., Health General §15–105

Begin quoted text

Code of Maryland

Article - Health - General

§15–105.2.

(a) The Program shall reimburse health care providers in accordance with the requirements of Title 19, Subtitle 1, Part IV of this article.

(b) (1) (i) In this subsection the following words have the meanings indicated.

(ii) "Health care provider" means a person who is licensed, certified, or otherwise authorized under the Health Occupations Article to provide health care in the ordinary course of business or practice of a profession or in an approved education or training program.

(iii) 1. "Telemedicine" means, as it relates to the delivery of health care services, the use of interactive audio, video, or other telecommunications or electronic technology:

A. By a health care provider to deliver a health care service that is within the scope of practice of the health care provider at a site other than the site at which the patient is located; and

B. That enables the patient to see and interact with the health care provider at the time the health care service is provided to the patient.

2. "Telemedicine" does not include:

A. An audio–only telephone conversation between a health care provider and a patient;

B. An electronic mail message between a health care provider and a patient; or

C. A facsimile transmission between a health care provider and a patient.

(2) To the extent authorized by federal law or regulation, the provisions of § 15–139(c) through (f) of the Insurance Article relating to coverage of and reimbursement for health care services delivered through telemedicine shall apply to the Program and managed care organizations in the same manner they apply to carriers.

(3) Subject to the limitations of the State budget and to the extent authorized by federal law or regulation, the Department may authorize coverage of and reimbursement for health care services that are delivered through store and forward technology or remote patient monitoring.

(4) The Department may specify by regulation the types of health care providers eligible to receive reimbursement for health care services provided to Program recipients under this subsection.

(5) The Department shall adopt regulations to carry out this subsection.

§15–106.

(a) (1) In cooperation with the professional organizations whose members provide health care under the Program, the Secretary shall establish a system of review for all health care that is provided.

(2) The review shall include a study of the quality of care and the proper use of the services by the Program recipient or the provider.

(b) A member of an appointed committee of any of these professional organizations or an appointed member of a committee of a medical staff of a licensed hospital shall have the immunity from liability described under § 5-628 of the Courts and Judicial Proceedings Article.

Appendix G: Barriers to Telehealth Implementation

The fact sheet below includes information compiled by MHCC regarding barriers to telehealth implementation. Sources for this information are included in footnotes within this document.

Barriers to Telehealth Adoption

Telehealth is the use of medical information shared through two-way video and other forms of telecommunication technology to improve a patient's health status.[58] There are many benefits to providing telehealth services that have the potential to result in reduced health care costs by addressing health issues before they require more costly interventions, reducing overhead costs associated with office visits, and allowing for immediate specialty consultations without the need for a separate appointment. However, there are also several barriers that result in a lack of adoption of telehealth initiatives.

Physician licensing

Regulations governing the provision of telehealth services vary by state; physician licensing regulations can vary depending on the state in which the physician and the patient are physically located. Some states require the physician to be licensed in both the state where they are located and the state in which the patient resides; in other states, the physician can pay a fee to practice across state lines. This lack of standardized guidelines can inhibit providers from providing telehealth services.[59]

Credentialing

In some instances, the credentialing process for telehealth services can be complicated and costly. The time and cost of administrative processes to credential providers to be able to provide telehealth services can be difficult for hospitals to initiate. [60, 61]

Liability

The law is unclear regarding liability and malpractice when providing telehealth services.[62] Liability insurance carriers define their own standards for coverage of telehealth practices, which may not be clearly outlined in the policy language. The physician must work individually with their insurance carrier to determine under what conditions, if any, they are covered for telehealth services.

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[58] Maryland Telemedicine Task Force, Final Report, October 2014. Available at: http://mhcc.maryland.gov/mhcc/pages/home/workgroups/documents/tlmd/tlmd_ttf_rpt_102014.pdf.

[59] eVisit: Barriers to Telemedicine and How to Solve Them. Available at: http://evisit.com/barriers-to-telemedicine-and-how-to-solve-them/

[60] eVisit: Barriers to Telemedicine and How to Solve Them. Available at: http://evisit.com/barriers-to-telemedicine-and-how-to-solve-them/

[61] LeRouge, Cynthia and Garfield, Monica J. Crossing the Telemedicine Chasm: Have the U.S. Barriers to Widespread Adoption of Telemedicine Been Significantly Reduced?. Int. J. Environ. Res. Public Health 2013, 10, 6472-6484; doi:10.3390/ijerph10126472

[62] LeRouge, Cynthia and Garfield, Monica J. Crossing the Telemedicine Chasm: Have the U.S. Barriers to Widespread Adoption of Telemedicine Been Significantly Reduced?. Int. J. Environ. Res. Public Health 2013, 10, 6472-6484; doi:10.3390/ijerph10126472

Reimbursement

Reimbursement models are largely based on face to face encounters and reimbursement for telehealth services is limited. CMS will reimburse for telehealth services only if they meet specific eligibility criteria; though some commercial payers are beginning to cover telehealth services more broadly, blanket reimbursement for telehealth services does not exist.[63, 64]

Financial

The return on investment of providing telehealth services is still not clear. This coupled with the large up-front costs for technology, credentialing, and licensing and reimbursement issues can make it difficult to justify implementation of telehealth services.[65]

Technology

Interoperability of health technology still lacking; without widespread connectivity of health technology, physicians are unable to gain access to real-time medical data to inform clinical decision making.[66] In addition, lack of broadband access in the United States limits access of high demand video and store-and-forward services which require expansive health networks. Also, the integration and connectivity of health information required to provide telehealth services requires defined standards for data confidentiality and integrity when providing telehealth services. [67]

Organization Structure

Current organizational structures are set up to support face-to-face physician encounters. An organization must have a strategic vision and infrastructure that supports telehealth as part of the standard delivery of care and not as an adjunct project. An organization must also have access to a sufficient number of providers that are able and willing to provide telehealth services and are able to support the needs of the organization as they implement and grow their telehealth services.[68]

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[63] MHealth News: The top three barriers to telehealth adoption. Available at http://www.mhealthnews.com/blog/top-three-barriers-telehealth-adoption

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Appendix H: Summary of Telehealth Implementation Considerations

The chart below summarizes key telehealth implementing considerations identified in this brief. Considerations are grouped by categories, such as legal, technology, financial, etc.

TELEHEALTH IMPLEMENTATION CONSIDERATIONS				
Deployment	**Organizational Change**	**Legal and Security**	**Technology**	**Financial Sustainability**
Cultural readiness • Comfort with use of technology • Coordinating with other facilities	**Adapting Workflow** • Develop flow chart • Changing physician and nurse routines • Seamless integration into routine	**Legal Considerations** • Professional liability insurance • Provider credentialing • Provider contracting	**Assessment of appropriate technology** • Project needs • Implementation setting • Integration of EHRs	**Provider Reimbursement** • Establish provider contract with hospital • Identify telehealth services that are covered by health insurance and carriers that provide coverage including Medicaid, Medicare and Tricare
Leadership • Administration commitment • Physician champion • Nurse champion	**Training Staff** • Hold educational training meetings • Develop online Videos • Training by mentor/champion	**Security Issues** • Data ownership • Privacy and security protections	**Technology Functioning** • Bandwidth and Wi-Fi connectivity • Weekly technology checks	**Sustainability** • Joint investment of hospital and LTC facilities • Include in hospital budget as investment in meeting global budget incentives
Assembling Resources • Existing technology • Clinical staff • Leveraging existing systems • CRISP			**Technology Staff** • Coordination with IT staff from each entity • Ability to train clinical staff • Ability to provide support hospital or LTC facility	
Educating Patients and Families • Marketing material • Videos • Family engagement • Meetings with case worker • Complete consent document				

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