

# **A Case Study of Telemedicine Use in Long Term Care**

by

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Submitted to the Graduate Faculty of  
School of Health Policy & Management  
Graduate School of Public Health in partial fulfillment  
of the requirements for the degree of  
Master of Health Administration

University of Pittsburgh

2021

UNIVERSITY OF PITTSBURGH

GRADUATE SCHOOL OF PUBLIC HEALTH

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2021

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## **Abstract**

In March 2020, the COVID pandemic spurred a national state of emergency as infections rose exponentially. The pandemic forced clinicians to take extra precautions to control the infection. To support hospitals and health systems, the government changed federal reimbursement rates to make telemedicine more financially viable. The allowance for widespread remote patient visits has opened a door for a growing service in healthcare. The long-term care population has been significantly affected by this pandemic, accounting for a large portion of the mortalities. As we move forward, the US government will have to decide on the future of telemedicine service coverage. Thus, there is a need to study how hospitals have adapted to include telemedicine into their care models. To best inform the policymakers before they make this decision, it is imperative to learn what impact telemedicine services has had during this period. Based on the case study done that analyzed findings from multiple long-term care facilities, associated with UPMC and Genesis Healthcare, there is a role for telemedicine in long-term care as well as a lot of challenges to navigate within the space. These long-term care facilities saw success in increasing behavioral health care use, reducing hospital transfers, and

the ability to leverage existing telehealth models. Some of challenges they saw had to do with technological education gaps in the older population, staffing issues, and the lack of capital infrastructure. The recommendations for policy revolve around determining best practices for telemedicine and stratifying reimbursement to maximize effective use. Past policy, there are changes that health systems can consider like more robust clinical training or collaborating to determine high efficacy treatments that would better patient care. Future research should examine health system cost complementarities, as well as internet accessibility and the related health outcomes.

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## **1.0 Introduction**

Long-term care was valued at \$443.2 billion in 2019, a significant portion of US Healthcare (Grandview Research, 2020). It is comprised of home health agencies, nursing homes, hospices, residential care communities, and adult day centers. The foundation of US healthcare is to seek aid to treat illness and conditions rather than to prevent the need for larger healthcare intervention. We foresee a larger demand for these services in the coming years as the baby boomer generation are all 60+ (Vespa, 2019). This generation includes everyone born between 1946 – 1964, meaning that the youngest member of this population will be 60 by 2024. Currently, 8.3 million people receive some form of long-term care support, usually spurred by the need for assistance on two or more activities of daily living, or ADLs (Friedland, 2015). The National Caregiver Alliance estimate that the lifetime probability of having two or more ADL disabilities, or some form of cognitive impairment, is 68% for seniors. Thus, this burden will continue to grow as our population as a nation gets older. It was estimated that \$849 billion in long term care was provided in 2018 and this is expected to reach \$2.5 trillion by 2030 (Hayes, 2020).

### **1.1 Global Pandemic**

In 2020, we began dealing with a global crisis with COVID-19. This pandemic has led to hundreds of thousands of deaths in the United States, and no one population has been more damaged by this than the long-term care population: 170,000 of the 500,000 deaths in the country thus far (The Atlantic). There have been many factors that contribute towards this total,

including a vulnerable, aging population that lives in close proximity with others, and a small workforce relative to the large population of residents under their care. Experts do not foresee a significant drop in demand for long-term care due to this pandemic because of the overall need for long-term care services, but we do anticipate the expansion of alternatives. On the regulatory side, the Center for Medicare and Medicaid Services, CMS, has already pushed for better health outcomes from LTC facilities across the nation, developing reimbursement incentives for value-based care practices. With the impending influx in demand for long term care, current workforce shortages, and the coming effects of the pandemic, there is a need for regulatory intervention . A boost in value-based practices that lead to better health outcomes for the residents could help stabilize this market for years to come. One potential avenue to allow long-term care to provide this higher quality care using new resources is the rising popularity of telemedicine.

## **1.2 Telemedicine**

When the lockdowns due to COVID-19 began in March 2020, many health care facilities began shifting some patient care to telemedicine, following the regulatory allowance for full inpatient visit level reimbursements for tele-visits. This drove hospitals, clinics, and health systems to increase utilization as they could now fully use their staffing model based on their supply of services and demand of patient population. This also allowed clinicians to continue to practice remotely even if exposed to COVID-19. In the sector of long-term care, we are just scratching the surface of the potential uses of telemedicine. The largest drivers are reduced hospital transfers, higher quality of life for patients, reduced cost of care, and the expansion of remote monitoring. Many of these remote services allow for patients to remain in their care sites and be seen by a clinician via a televisit. In general, this offering can expand the services that a

patient can receive past the geographical barriers that may exist as well as past the typical workday of a staffed clinician. Patients that need to be seen at two a.m. can see a clinician via telemedicine without having to be physically transferred to a 24-hour Emergency Department.

## **2.0 Background**

### **2.1 Long-Term Care**

Long term care facilities navigate a high-risk and growing population, with a shortage in medical professionals and thus a need to provide higher quality care. As mentioned, COVID-19 has proven to be more deadly to this population. As of February, the United States has logged 170,000+ deaths for long-term care residents and staff (The Atlantic). Long term care residents make up less than 1% of the country's total population, but 35% of the mortalities (The Atlantic, 2021). In fact, twenty-four out of thirty-eight reporting states saw the highest weekly averages in new cases in December 2020, and eighteen out of thirty-nine states saw the highest weekly mortalities in December 2020 (Chidabaram 2021). If we consider the broader theme, the spread of this illness is such a large factor that reducing the rate of transmission of illness after this pandemic subsides could reduce the overall rate of infection for these residents and staff members. In terms of this population, it is growing over time. By 2030, the baby boomer generation will all be 65 and older, accounting for 21% of the population, up from 15% in 2018. With the given trajectory, we are projected to see 77 million 65+ adults and 76.5 million children under 18, a first in US History (Vespa, 2019).

### **2.2 Workforce Shortage**

There are many other factors affecting long term care and one of the most notable being the shortage of medical professionals in healthcare, and a specific profession that is used heavily in this setting are registered nurses, RNs, licensed practical nurses, LPNs, and certified nurse aides, CNAs. The average age of the five million RNs and LPNs in this country is 51 years old

(NCSBN, 2021). The most common work setting for LPNs is nursing homes/extended care. Having this population at a high average age, consistent with the aging demographic in the country, indicates that a larger shortage is coming. There are potential remedies to alleviate this issue, namely immigration policies that would aid in rebuilding this workforce. However, in the past few decades, our stricter immigration policies have made it increasingly difficult to enter this country. In 2012, nearly 80,000 RN applicants were turned away due to school capacity, so we are also seeing issues in the production of supply of members to this workforce (Sheffield, 2018). In this environment treating older patients who need two to three times more services, we are seeing even more pronounced shortages.

Besides LPNs, and RNs, the other major health care worker in the long term care facilities are the certified nurse aides, CNAs. They play an invaluable role in patient care, but have been plagued with high turnover in this sector, specifically. In 2019, CNAs had a turnover rate of 41%, Some of the cited reasons behind this turnover rate were “low wages and benefits, physical demands of the job, strained workplace communication, and broader unemployment trends” (Caremerge, 2020). During this pandemic, the CNA shortage has only exacerbated as some have chosen to stop their high-risk jobs and collect unemployment. In an NPR interview, Shanna LaFountain, a nursing assistant in New England, chose to do exactly this. One of contributing factors that led her to this decision is that the pandemic pay she collected, \$600 a week, was greater than her income when she was working. CNAs play such an important role in care at the long term care facilities but their wages are not reflective of their value to the organization.

And finally, there is clinician turnover in these settings that further push the shortages, with 25% of nursing assistants and 20% of home health aides actively seeking another job, and

50% of home health workers leaving their position within 1 year (Scales, 2018). In these markets, increasing wages could be a key driver to not only retain clinical staff, but also attract more workers. There would still be a need to address the supply of these clinicians long-term, but this would help reduce clinician turnover and its effects on long term care facilities. All these factors lead us to the existing worker shortage and lack of current infrastructure to address this issue. One of the effects of these shortages then is burden of care falling on to family/informal caregivers.

In fact, 87% of individuals that need long-term service and support receive some form of care from unpaid caregivers, summing up 8.4 million unpaid care FTEs annually (LaPointe 2020). LaPointe estimated in 2014 that 43.5 million people had served as an unpaid caregiver at some point in the year. With this large burden placed on families without medical training or even the proper resources to care for their loved ones, there must be consideration of this population as we move forward with healthcare innovation in this country. These unpaid caregivers increase quality of care and outcomes for a vulnerable population without affecting the financial cost of care. However, the costs are continuing to grow at a faster rate than the population because the care per individual is getting more expensive. Reducing costs in the long-term care population is a necessity for the healthcare industry.

This leads us to the ultimate factor that has affected this population's exposure and mortality rate from COVID-19: the need to improve quality of life through quality of care. Illustrated by recent CMS initiative to reduce avoidable hospitalizations, there are federal regulations being pushed to address this goal of improving care. And in the last year, COVID-19 outbreaks in these facilities have put pressure on long term care to alter their strategies and improve resident health. These factors driving better quality of life and a long-term cost savings

can also preserve market demand. Alongside the pressure on long-term care, COVID has affected all segments of healthcare in 2020 onwards, and no one sector has been more discussed than telemedicine.

### **2.3 Purpose & Use of Telemedicine**

Telemedicine can serve a few different roles in its use in long term care facilities. The main use of telemedicine are virtual consults, early initiation of therapy, or as a form of remote patient monitoring. Both virtual consults and early initiation of therapy reduce resident transfers. Virtual consults can be of use when either the facility's physicians are not present or when the resident needs specialty care that the facility does not offer. This can also reduce transfers as a virtual consult could be used in lieu of a trip to the ER. During this pandemic, hospitals have been overleveraged with so many individuals coming in with COVID infections. Reducing hospital transfers also reduces the potential infection risk that a resident could face in that setting. Early initiation of therapy can "modify a clinical disease process before it progresses to a life-threatening condition" (Wiesen, 2020). Finally, the remote patient monitoring can be used for physicians to track resident health data and determine if there is further intervention necessary. (Edmondson, 2017). During the pandemic, this use has increased as some physicians that have been exposed to COVID-19 are still able to conduct remote patient consults and monitor patient data. This puts strain on the remaining staff at the facility but reduces barriers to accessibility. The staff members that are affected by this are the RNs, LPNs, and CNAs that are called to assist more directly on these remote consults while still fulfilling their existing responsibilities.

Telemedicine has greatly increased in usage primarily due to the need of remote patient care during the pandemic and the federal reimbursement adoption of a full in-person visit, making it financially attractive for health systems, as well as the alterations to the conditions set

in place to receive this reimbursement. Before this adoption, Medicare reimbursement of telehealth visits were held to multiple geographic and frequency restrictions. A main restriction was a need for physicians to be licensed in the state that they are practicing in, but CMS has since waived this requirement for Medicare patients and allowed states to apply for additional waivers to treat Medicaid patients (Robeznieks 2020). These changes are aimed at enhancing the availability and potential of telemedicine as a viable diagnostic or treatment tool for patients at a time where it is difficult or unadvisable to leave home or visit a clinic.

## **2.4 Telemedicine in Use**

Through a study published by the Canadian Agency for Drugs and Technologies in Health in 2015, they discussed the evidence of telemedicine effectiveness. In long-term care facilities, they found “significant reduction in travel time for both residents and clinicians, and was effective in increasing the number of patients reviewed, while reducing the frequency of residents’ visits to hospitals and clinic” (CADTH, 2015). Telemedicine was used to achieve glycemic control and to provide needed services in general medicine, geriatrics, psychiatry, and neurology (CADTH). These promising results were coupled with pharmacist telemedicine success that led to reductions in medication duplication and improved medication safety. Thus, there is evidence for success with telemedicine implementation in these facilities, but the research and findings during this period of widespread use will help us guide future policy and investment decisions.

As telemedicine has been utilized by systems in the past, albeit in a smaller volume, there have been some successful programs across the country. Banner Health is a 28-hospital system

based in Phoenix, AZ that spans across six states. They run a telehealth program called iCare, whose goal is to “decrease Emergency department visits and hospitalization, and increase medication compliance”, all from the comfort of the patient’s home (Munro, 2015). This integrated care model successfully reduced cost of care and hospitalizations. There has been success in MediTelecare, which is a telehealth behavioral care provider. They were able to significantly reduce patient’s use of high-risk medications, using this service. Overall, these have been widespread telehealth programs by health systems and providers around the country. The ability to translate these services over to long term care following the pandemic should be observed.

With all these uses, telemedicine has become widely available and utilized across service lines. However, with the temporary state of reimbursement, there is an unknown around the long-term future of these services. This created the need to determine the efficacy of these programs.

## **2.5 Current State of Telemedicine**

Prior to the pandemic, some long term care facilities were utilizing telemedicine and studies have shown some success in providing value to the health system. For instance, telemedicine was used in some settings in lieu of a hospital transfer or physician office consult. Some added savings here came in the reduction of transportation costs that facilities covered for patients. Another use was addressing potentially preventable admissions, a CMS initiative that was put in place in May of 2019. Finally, a use of telemedicine was also remote patient

monitoring. Through 2020, the avoidance of hospital transfers became increasingly crucial with the risk to spread infection or become infected, combined with the high occupancy of hospitals all over the country. Treating patients remotely also became very valuable as clinicians would be able to work remotely in certain practices, if exposed to COVID-19. The value of a remote patient monitoring program could not only be the potential savings in reducing hospital transfers or the increased accessibility to specialty providers, but also the ability for one physician to track multiple patients concurrently. As the physician does not need to be in one location to see these patients, it can reduce costs for systems by creating flexibility in their staffing model.

In the long term care setting, studies show that 60-70% of transfers to the hospital are unnecessary. In that study, a skilled nursing facility adopted a TripleCare virtual physician service meant to combat the need for transfers. In 2015, the results showed that they “averted 91 hospital admissions or readmissions over the course of a year” and ended up “saving the SNF more than \$1.3 million in Medicare costs”, all while improving outcomes for the patients (Wicklund, 2018). This study indicates that there is potential for significant savings for facilities using telemedicine services. During the pandemic, there is inherent savings in reducing hospital transfers as it reduces the risk for resident infections that will incur further costs. Protecting residents from a high-risk setting can prove to be beneficial.

## **2.6 Implications for Future of Telemedicine**

Many of the early adopters of telemedicine overall serve a purpose and will play a role in the changing landscape of US healthcare. Access, quality, and patient experience are all key drivers of this mode, whereas the direct financial return on this investment is less clear. Health

systems need justification to acquire and provide telehealth solutions. This uncertainty is tied to the future of Medicare reimbursement rates for telemedicine, whose current level will expire as the pandemic has been addressed and there is no longer a direct infection threat. As of February 2021, 22 have passed laws that dictate reimbursement of telehealth services, and 14 of the 22 offer payment parity that provides equal payment for telehealth services or in-person services (Foley, 2021). This information indicates that states have had serious conversations about this topic and nearly ½ have passed laws about it. During the American Telemedicine Association's EDGE policy conference, experts spoke about the current administration's strategy on the topic, and they agreed that there will have to be "some level of fair payment rather than moving toward payment parity across the board" (Jercich, 2021). Although there has not been widespread data aggregation for telehealth use during the pandemic yet, the existing data does show positive contributions from telehealth adoption.

### 3.0 Methods

The literature review revealed many topics of interest as it relates to long-term care and telemedicine, including the success of behavioral care programs embedded into a telemedicine platform to potential challenges with the technology adoption. With these topics of interest in mind, there was a need to learn about these from a closer perspective. To determine the current state of long-term care facilities and the staff's level of interaction, utilization, and comfort with telemedicine, multiple clinical leaders across two health systems and three facilities were interviewed. This includes University of Pittsburgh Medical Center's Senior Communities, Asbury Place and Canterbury Place, as well as Genesis Healthcare System's Berkshire Center. Although these were the specific facilities, we gained information from regarding long-term care, the widespread use of telemedicine in these individuals' respective health systems were frequently a part of discussion and included in the successes and challenges of telemedicine implementation.

**3.1 Table 1. Participants Interviewed for Study**

<b>Name</b>	<b>Place of Employment</b>	<b>Title</b>	<b>Date of Contact</b>
Participant 1	UPMC Rehabilitation Institute	Senior Director	1/8/2021
Participant 2	UPMC Senior Communities	Nurse Executive	1/11/2021
Participant 3	UPMC Senior Communities	Chief Operations Office	1/11/2021
Participant 4	Curavi Health	Senior Client Success Manager	1/19/2021
Participant 5	UPMC Heritage Place	Director of Nursing	2/5/2021
Participant 6	UPMC Asbury Place	Director of Nursing	2/16/2021
Participant 7	UPMC Heritage Place	Unit Manager	2/16/2021
Participant 8	Berkshire Center, Genesis Healthcare	Certified Registered Nurse Practitioner	2/18/2021

**3.2 Table 2. Organizations Represented in the Study**

<b>Parent Organization</b>	<b>Facilities Represented</b>	<b>Location Type</b>	<b>Campus Services</b>
University of Pittsburgh Medical Center	UPMC Rehabilitation Institute	Urban	Inpatient Care, Transitional Care*
	UPMC Senior Communities	Urban	Office
	Curavi Health	Urban	Office
	UPMC Canterbury Place	Urban	Skilled Nursing, Rehabilitation Services*
	UPMC Asbury Place	Urban	Independent Living, Personal Care, Nursing and Rehabilitation Services*
Genesis Healthcare	Berkshire Center	Suburban	Short-Term Care, Long-Term Care, Hospice Care, Rehabilitation Services*

Information gathering from these contacts came through various mediums, including email exchanges, phone calls, and video calls. It occurred January 2021 to February 2021, with some contacts spanning multiple exchanges and some contacts being a one-time phone call of one hour. In email exchanges, questions were asked regarding telemedicine use in long-term care facilities with six main themes. These themes remained consistent within any phone call or video calls conducted in the two months. Listed below are the six main topics covered in these conversations. In some exchanges, the topics were covered briefly, and in some exchanges the topics were thoroughly discussed and led to multiple subtopics. After amassing data from multiple conversations across a few different long-term care facilities and the UPMC health system overall, there were some key findings about telemedicine and how it impacted long-term care during this pandemic.

### 3.3 Figure 1. Questionnaire for each Interview

1. General Changes with Telemedicine in Long Term Care
  - a. From Start of Pandemic – Present
  - b. Impression of use of Telemedicine
2. People Changes
  - a. Staffing Over Past Year
  - b. Staff Sentiments
3. Process Changes
  - a. Hospital Transfers
  - b. Behavioral Care
4. Technology Changes
  - a. Telemedicine infrastructure
  - b. Wi-Fi Connectivity
5. Challenges
  - a. Financial Barriers
  - b. Resident Care
6. Impression of future role of Telemedicine in Long Term Care

*This questionnaire served as a guideline for my email exchanges and phone calls with various healthcare workers and leaders detailed in Table 1. These points were derived from the literature review of some key components of telemedicine use in long-term care.*

## **4.0 Findings**

The major findings included issues with healthcare platforms, staff burden, lack of capital infrastructure, and educational barriers to telemedicine use.

### **4.1 Healthcare Platforms**

UPMC uses two enterprise health software offerings in their health system. They utilize both Epic in their outpatient services and Cerner in their inpatient services, and this has been a long-standing strategic choice. Although leveraging both services in the same system was a decision, neither has made it easy to integrate telehealth data. For example, at UPMC Pinnacle, they have held telemedicine visits for many patients across their hospitals. These visits are carried out on the MyPinnacleHealth platform, documentation is recorded on paper, and then scanned into the system. At Asbury Place, they are transitioning to a new electronic health recording system in March, which they hope will be more robust and help connect patient records in a more user-friendly interface. Besides this electronic health record change, both Asbury Place and Heritage Place mentioned the same challenges and barriers.

### **4.2 Staff Burden**

Through this pandemic, there has been a great deal of staff burden and the use of telemedicine has not been a tool to alleviate that stress. The Berkshire Center's staffing model utilizes many licensed practical nurses. During the pandemic, their roles have been stretched and they are being asked to hold responsibilities that may be better suited for RNs. For example, during a telemedicine visit, an LPN may be tasked with not only taking vitals and listening to the

heart and lungs, but also doing a thorough assessment for the virtual provider. LPNs are frequently uncomfortable with this added level of responsibility of the full assessment, especially with the pandemic. The Berkshire Center has lost many residents over the past year and nurses will continue to worry about their increased burden of responsibility. On the other end, UPMC has navigated a different staffing burden, the unfamiliarity of agency-provided FTEs. Newer staff members that are coming from agencies are typically unfamiliar with the processes in place and this became more frequent at the start of the pandemic, as the staff pool became more depleted with infected staff members.

The Berkshire Center did receive N95s and the other masks and gowns they needed, but not until early May, well into the pandemic. Until then, they used personal resources and rationed to maintain their level of responsibility in care. When physicians were forced to work remotely due to COVID protocol, there was additional burden on the remaining staff to administer any necessary in-person patient care, like assessments.

At Asbury Place, approximately 1/3 of the staff are from agencies. These clinicians come in with less experience and a level of unfamiliarity with the systems in place. The lack of familiarity during a stressful time added to the issues when these newer members navigated the enterprise systems, the newer telehealth model, and the systems in place. On the other side, the residents have a difficult time adjusting to new staff. These factors lead to increased staff burnout and turnover, which restarts the process. The addition of telemedicine has become an increased burden for staff, and it is another layer of education a clinician needs to receive when they join, and some never fully learn what the platform can offer and how it functions. Additionally, the older nurses that are more experienced with Asbury's system or have more seniority are also overwhelmed with the addition of new technology like the telemedicine carts. As the pandemic

has only increased these barriers and tightened our staffing, the burnout rate continues to increase. Because of increased clinician burnout, there will be an increased medical error, increased risk of malpractice, reduced resident satisfaction, a direct impact on quality of care and patient outcomes.

### **4.3 Telemedicine Tools**

As Genesis was dealing with the COVID pandemic nationally with all of their facilities, they did not allow for increased funding to purchase more technology for use. The Berkshire Center was provided with 1 iPad to run all necessary telehealth appointments. The nurses were either using the iPad or some were able to use their computers at their station. In addition, many nurses relied on resident's family members bringing their iPhones as they felt more comfortable with a family member involved. The nurses feel more comfortable with the resident using telemedicine with a family member involved. This technology barrier that Genesis faces is not just at the hardware level, with only 1 iPad. The Wi-Fi network is riddled with lag time, dropped coverage, and a weak signal, which hinders not only the use of telemedicine, but also the resident's ability to use the internet and internet tools. At Asbury Place, they have the same Wi-Fi connectivity issues. The Wi-Fi had been an existing issue at the facility for years and they never received funding or any allocation to remedy the issues. Staff and residents never have quality Wi-Fi throughout the day, and there are spots of dropped coverage. Although it does not prevent telemedicine visits, it does frequently increase the length of the appointment, as they wait for internet to connect or to load features.

#### **4.4 Perceived Benefits of Telemedicine Use**

There were some benefits to telemedicine use in long-term care, as expressed by the staff at UPMC and Genesis. This included flexibility for providers during COVID, reduction of ED transfers, and increased use of behavioral services via the telehealth platform. At UPMC, their existing enterprise-level telehealth startup Curavi has been played an integral role in their ability to roll out and use telemedicine. When the pandemic began, UPMC was able to roll out 2 new Curavi telemedicine carts to each of their Senior Community sites, including Asbury and Canterbury. Curavi is medical technology company from UPMC Enterprises that has created telemedicine hardware. Curavi software also allows for integration with EHRs to connect platforms. These carts do provide the ability for residents to be seen, but just having two carts for entire facilities forces the facility to factor in the transfer time when they schedule appointments. UPMC can leverage their existing connections with Curavi to really benefit them at this time, an advantage they had to tackling the COVID-19 pandemic and the resulting outcomes.

At Genesis, the flexibility for providers during COVID did benefit them as they were able to reduce visit cancellations due to physicians not clearing a COVID protocol. They have been tested twice a week to ensure facility safety and minimize spread. This has led to physicians using tele-services when applicable to continue handle visits remotely.

A primary goal of UPMC telemedicine was to reduce their ED transfers by utilizing tele-services in the off-hours. Typically, with the lack of 24-hour physician staffing, these facilities would prepare a resident for transfer, call an ambulance or use their own to send the resident to an emergency department for evaluation. With a telemedicine intervention, a nurse is asked to hold a telemedicine visit with the resident and a remote physician, which allows for an in-place evaluation. Reducing these ED transfers are even more significant considering the high-capacity

levels of many health systems, and the risk of infection or exposure by transferring a resident. At Asbury Place, they have liked the convenience of having an exam done for a resident via telemedicine and then getting the order on medications rather than being forced to call an ambulance for a transfer. However, newer staff will still call for an ambulance if they are unfamiliar with the telemedicine platform. This has been a point of emphasis in their push for increased staff training.

The Berkshire Center did observe an increased use of behavioral services. More residents were using the service with the availability of clinicians operating remotely. Some of the visits were made easier with the use of the resident's family member's cell phones. The staff is hopeful that the increased use of services is a result of resident awareness and its use will continue following the pandemic.

## 5.0 Discussion

### 5.1 Policy

As there will be decisions that must be made regarding the future of telemedicine reimbursement, one thing is clear: telemedicine serves a role in healthcare delivery, and long-term care is a space that will benefit from its use. As some services can be of greater value in this form of care delivery, the reimbursements should prioritize services that have shown the most benefit from telemedicine to encourage the ideals of a value-based care model. For example, through the findings in long-term care utilization of telemedicine, behavioral health services have shown promise and success in utilization during the pandemic. With a sustained reimbursement rate to allow this to be financially viable for all parties, this capability allows for more access for patients.

In addition to reimbursement rates for visits, there must be another payment model that encompasses telemedicine reimbursement. Health systems are using remote patient monitoring tools like UPMC's Telemedicine Heart Failure Health Kit or Banner's iCare program whose value cannot be quantified per visit. There should be consideration for these types of telemedicine programs that provide value and could be reimbursed as a subscription service, or option.

A key policy need within the realm of telemedicine should be a requirement for health systems to offer a telemedicine training program and support to staff. It is important for health systems to encourage clinicians to learn and understand all the offerings in a telemedicine platform to best leverage their medical expertise through their investment on a platform. A complimentary driver should push for health systems to develop and utilize user-friendly

telehealth tools. This could help drive better clinical tools for telehealth delivery over time as the standardized requirements would generate interest and strategic use.

Berkshire Center reported poor Wi-Fi throughout their facility, and they are not alone in long-term care facilities across the nation. Only 1/3 of nursing homes offer free wireless services to residents, and only 63% of rural Americans have broadband internet (Lane, 2016). If there is not widespread access to internet, it will be difficult to maximize the impact telehealth can have on our population. In terms of internet use, a 2019 study revealed that 21% of retirement home residents used the internet, 13% used a smartphone, and 5% used a tablet (Johnson, 2020). With more access to high-speed internet, there is a potential for the use in these populations to increase, which would aid in reducing the digital barrier for the accessibility of telemedicine. The Federal Communications Commission has recently launched initiatives to provide low-income families with monthly subsidies for high-speed internet. The American Rescue Plan also detailed some allocation of the \$9.9 billion Homeowner Assistance Fund towards qualified expenses including broadband internet access. These initiatives and funds begin to address the lack of access but should consider passing regulations to improve internet availability throughout all regions of the country. Their current broadband map is flawed and there should be more of a push to address these network gaps affecting millions in the country.

A common issue in US healthcare that is experienced by nearly every hospital or clinic is staffing shortages. Especially during this pandemic, staffing has proven to be a challenge. There are short-term incentive programs that hospitals can launch to attract new talent or incentivize their system, but the long-term issues remain. If the goal were to increase wages to increase retention and attract new individuals to the sector, these facilities will need increased Medicaid funding. There is an aging population that will demand a large share of services and coverage,

and a lack of supply of workers. In addition, there are barriers to building that workforce with a limited number of seats available at higher education programs and restrictive immigration policies. A potential solution that would help address the workforce shortage would be more federal investment into education programs to increase the seats available for physicians, nursing, etc. Revising immigration policies would also aid in expanding this workforce. In 2019, the median operating margin for skilled nursing facilities was -0.1% (Flynn 2020). Thus, the facilities as they are currently structured do not have the capability to offer more services without hindering their economic position for long-term stability. A solution posed by Jeff Jerebker and the Live Oak Project pushed for equitable wage for the important work that CNAs do in their role. As they have the greatest contact with the people receiving care, they are the most vulnerable to infections and communicable diseases. Some ways they proposed to aid in equitable wage for CNAs include federal legislative action to provide direct Medicaid pass-through exclusively used for CNA wages and a federal match for the CNA pass-through to reduce the state's fiscal burden (Jerebker, 2020). This pass-through would allow for specific allocation of funding for CNA wages. There may be opportunities to reduce costs through new initiatives and services like telemedicine, but to impact meaningful change, there must be discussions at a state and federal level to revise funding and reimbursement.

## **5.2 Practice**

Even though UPMC uses Epic and Cerner for their electronic health records, they have been unable to fully track and record telemedicine visits within their interface. By scanning and attaching these visits to the patient file, clinicians in the future will still be able to access it, but the integrated functionality of UPMC's health platform has been minimized. If UPMC plans to

continue leveraging both electronic health recording software, they must increase capabilities to meet the growing needs of their staff. If they are unable to keep up with the growing needs of their hospitals, UPMC should consider consolidating their records into either Epic or Cerner, rather than using them both separately.

The educational barrier seems like an opportunity for improvement. The Nursing Director at Asbury identified more staff education as the key need for their facility. If there is more technological competency around the telemedicine platforms, staff would feel more comfortable setting up a telehealth visit. A related factor would be staff retention. As many of these issues are linked, reducing staff turnover would also allow for staffs to deepen their understanding with new technologies like telemedicine platforms. Although LPNs and RNs are used in these facilities to do patient exams for the physicians remotely, behavioral visits or some follow-up visits would not need as much active nurse intervention, reducing staff burden. Even as nurses would be needed in these appointments, there could be a possibility of allowing more flexibility for them to go from patient room to patient room, allowing for a nurse to monitor multiple patients at one time. Educational advancement could reduce costs by allowing facilities to staff with more flexibility. This dynamic staffing model could reduce the impact of the clinical workforce shortage in the coming years. In addition, it could benefit patients through providing better outcomes. With the ability to connect through an electronic platform, there is the possibility to decrease cancellation of appointments and increase patient adherence to instructions. In a nursing home, increased adherence can result in less adverse outcomes and transfers.

There was a UPMC goal of reducing patient transfers to the ED using the telemedicine platform. They have seen success in this goal and have reported out positive changes to their

model to decrease patient transfers, A key recommendation for these larger health systems like Genesis and UPMC is to use their widespread network to cultivate their data and use their analysis to guide their decisions. With their reach, they can help inform other systems on what models and services have the best value as we shift towards value-based care. UPMC Enterprises runs Curavi Health, which is a technology-enabled telemedicine services customized for post-acute and long-term care and able to integrate with EHRs. Curavi provides UPMC with hardware and they have started to partner with external health systems. Besides the functionality of the telemedicine services, their data can integrate with EHR systems. Leveraging their knowledge and IT services to create solutions that are accessible to other systems is a positive strategy that may result in better health outcomes for a larger population of people. UPMC already uses a remote patient monitoring program, but its efficacy along with the future of telemedicine reimbursements should indicate whether it will be a feasible program long-term, and whether other systems should invest in the technologies. With these larger systems, they have the capital to develop and deploy large-scale telemedicine solutions, and we expect to see more systems following this trend.

To improve life for residents in long-term care facilities, some critical points to focus on would be promoting education, creating accessible health platforms, maintaining staffing, and minimizing resident exposure. Education would help residents feel more comfortable with their care and treatments, and even allow residents to explore specialty care like behavioral health. Accessible health platforms would make it easier to engage with residents in an attempt to reduce in-person clinician need. A balanced staff would provide continuity of care to the residents and improve their comfort. Finally, minimizing resident exposure such as hospital transfers could keep residents healthier for longer.

### **5.3 Further Research**

Based on the findings in long-term care and telemedicine utilization, there are some areas of research that should be explored within the confines of the pandemic or beyond. The first topic of interest would be quantifying return on investment on telehealth programs. To determine the feasibility of these programs long-term, there should be a study done looking at the financial investments that occur to establish a successful telehealth operation, the potential cost savings that develop based on the health system cost complementarities and reimbursement rates of visits, and the financial implications of the resulting health outcomes for patients. Another area of research can be tied directly towards internet accessibility initiatives and related health outcomes. Increased accessibility should produce better outcomes through expanding patient access to clinicians 24/7 and to services like behavioral care. In the long-term, this could shrink the education gap. Next, there have been remote patient monitoring tools created by health systems. The next step in care delivery there is integrating in caregivers to better patient outcomes. This would bridge the gap between caregivers and providers and should produce better outcomes. Finally, CMS and other regulatory bodies are creating initiatives encouraging value-based care models. Research done on these models could show the most effective and cost-efficient models that can be implemented across the country, as a successful sharing of best practices.

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