Telehealth at Community-Based Palliative Care

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We have no known conflict of interest to disclose.

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Abstract

This DNP quality improvement (QI) project implemented telehealth at a Community-Based Palliative Care (CBPC) in response to the global COVID-19 pandemic. CBPC is an essential service and it was critical to continue providing services during the pandemic (Calton et al., 2020; Etkind et al., 2020; The Lancet, 2020). This project measured CBPC provider's perception of the utility of using telehealth to provide CBPC services in response to the global COVID-19 pandemic. Telehealth is the delivery of health services using information and communication technology (Monaghesh & Hajizadeh, 2020; Smith et al., 2020). The project used mixed methods of qualitative and quantitative research. Provider perception of telehealth was measured using anonymous open-ended survey questions and content analysis. Process and symptom measures were collected using the Palliative Care Qualitative Collaborative (PCQC) Data Registry and chart review. The goal was to use telehealth during the pandemic to maintain and improve the quality and integrity of palliative care services.

Keywords: telehealth, palliative care, quality improvement, quality of life
Telehealth at a Community-based Palliative Care

Community-Based Palliative Care (CBPC) is an essential service and it is critical to continue providing services during the pandemic (Calton et al., 2020; Etkind et al., 2020; The Lancet, 2020). Operations need to be as seamless as possible and comply with evolving quarantine and social distance guidelines (CDC, 2020). CBPC benefits patients by improving health care outcomes with better symptom management, increased hospice admissions, and reducing hospital admissions in the communities it serves (Kamal et al., 2013). CBPC has improved the quality of life with better symptom management and increased hospice admissions (Kamal et al., 2013, 2017; Worster & Swartz, 2017).

Significant barriers have limited access to care in rural and underserved communities (Bonsignore et al., 2018; Kamal et al., 2017). These barriers include low population density, provider shortages and financial limitations (Kamal et al., 2017). The global COVID-19 pandemic has presented an additional barrier to care for this vulnerable (Calton et al., 2020; Etkind et al., 2020; Keshvardoost et al., 2020; The Lancet, 2020; Tran et al., 2020). It is critical for providers to embrace telehealth to overcome these barriers and to continue to provide palliative care services during this pandemic (Calton et al., 2020; Etkind et al., 2020; Keshvardoost et al., 2020; The Lancet, 2020; Tran et al., 2020).

Telehealth provides a technological solution to enhance care to all patients receiving CBPC (Calton et al., 2020; Etkind et al., 2020; Keshvardoost et al., 2020; The Lancet, 2020; Worster & Swartz, 2017). Telehealth is defined as the delivery of health services using information and communication technology (Monaghesh & Hajizadeh, 2020; Smith et al., 2020). It connects providers to patients beyond the traditional office setting while minimizing the geographical and infectious control barriers of providing CBPC (Tran et al.,...
This is especially true for patients needing care but reluctant to leave the house for fear of COVID-19 exposure (Tran et al., 2020). Telehealth had some success prior to the pandemic (Bonsignore et al., 2018; Meghani et al., 2017; Worster & Swartz, 2017). It has improved patient-centered outcomes by enhancing communications, generating data to track patient responses to their diseases processes and therapeutic interventions and optimizing the geographical reach of the providers (Hennemann-Krause et al., 2015). Although the success of remote access is dependent on how providers use and value this technology, the pandemic has accelerated the adoption of telehealth into widespread use (The Lancet, 2020). It is important to understand how the providers’ attitude and comprehension of telehealth can maximize its potential (Calton et al., 2020; Etkind et al., 2020; Keshvardoost et al., 2020; Tran et al., 2020).

**Literature Review**

The COVID-19 pandemic has caused the use of telehealth to proliferate and its adoption to accelerate because it was key to overcoming the challenges of the COVID-19 pandemic (Calton et al., 2020; Keshvardoost et al., 2020; Tran et al., 2020). CBPC is an essential service and use of telehealth was critical for services to continue in an uninterrupted way and to comply with COVID-19 guidelines (Calton et al. 2020; Etkind et al. 2020; The Lancet 2020; CDC 2020).

Implementation of telehealth depends on the provider's acceptance of the technology and its ability to meet symptom management quality goals (Calton et al., 2020; Keshvardoost et al., 2020; Tran et al., 2020). Telehealth has been shown to improve symptom management (Bonsignore et al., 2018; Hennemann-Krause et al., 2015; Jamwal & Kumar, 2016; Meghani et al., 2017; Worster & Swartz, 2017). This utility in symptom management is an important factor for acceptability because effective symptom management is a defining feature of palliative care.
Common subjective symptoms experienced by palliative care patients are pain, dyspnea and nausea and are rated on a 10 point scale (Glover & Kluger, 2019; Harris, 2019; Kamal et al., 2013). On the pain scale zero is no symptom and 10 is the worst possible experience of that symptom (Glover & Kluger, 2019). Pain is defined as an emotional and unpleasant sensory experience (Gebhart, 2000). Dyspnea is the subjective feeling of being short of breath (Wysham et al., 2015). Nausea is the subjective experience of feeling like one needs to vomit (Meek et al., 2015). Identifying symptoms makes it possible to perform interventions that palliate symptoms and enhance the quality of life (Harris, 2019).

Palliative care intervention for symptoms can be categorized as either pharmacological, non-pharmacological or a referral to hospice implemented after symptom identified during a telehealth visit (Hennemann-Krause et al., 2015; Singer et al., 2016; Tatum & Mills, 2020). A pharmacological intervention is defined as the use of medication to provide relief of symptoms like morphine to treat intractable cancer pain (Singer et al., 2016). A non-pharmacological intervention is defined as any intervention that does not use medication to provide symptom relief like having a patient sit in front of a fan to help with dyspnea (Crombeen & Lilly, 2020; Singer et al., 2016). Hospice referral is defined as referring a patient to hospice service and can be done when a patient has a life expectancy of less than six months (Glover & Kluger, 2019; Tatum & Mills, 2020).

Telehealth use has accelerated during the COVID-19 pandemic and is key to reducing COVID-19 exposure and preventing disease transmission (Keshvardoost et al., 2020; Tran et al., 2020). The COVID-19 control measures have amplified pre-existing barriers to in-person visits
telehealth can increase engagement, improve safety and prevent complications (Bonsignore et al., 2018; Meghani et al., 2017; Worster & Swartz, 2017).

Methods

This was a three-month prospective QI project that implemented telehealth at a CBPC for a population of seven nurse practitioner palliative care providers to adapt to the COVID-19 pandemic. A population of seven providers that had home-dwelling patients. This QI project utilized qualitative and quantitative methods.

Measures

This project measured the providers perceptions of telehealth, the symptoms ratings of pain, dyspnea, and nausea identified by the patient during the visit; the type of interventions implemented for recognized symptoms; the descriptive statistics of the diagnosis, the category of telehealth visits and total number of telehealth visits. Data for measures were collected via anonymous open-ended surveys sent to the providers.

Provider Perception

Provider perceptions were measured using anonymous open-ended surveys sent to the providers at the start and at the end of the project. The surveys gauged the providers’ perception of telehealth utility in response to the COVID-19 pandemic. The survey consisted of six open-ended questions that allowed the provider to give honest unstructured opinions on this care delivery modality (see Appendix A).

Symptom Measures

The project measured the symptom rating of pain, dyspnea and nausea identified during each telehealth visit.
Intervention Measures

Whenever a distressing symptom of pain, dyspnea or nausea was identified, the category of intervention implemented, if any, was measured. Interventions fall into three categories of either pharmacological, non-pharmacological or a referral to hospice.

Telehealth Descriptive Measures

The project measured diagnosis distribution and the type of telehealth visits. This was done to describe the providers’ patient population receiving telehealth visits.

Procedure

This DNP quality improvement project received IRB approval from Lenoir-Rhyne University institutional review board before implementation. The providers with home patients offered telehealth video to comply with COVID-19 restrictions. The providers utilized the TapCloud telehealth application, a HIPPA compliant telehealth software service to initiate a video visit from the provider's laptop. The provider sent the patient a text with a link that the patient clicked on to open a video chat on their mobile device. If the patient refused a video visit or the video visit failed for technical or connectivity reasons the provider called the patient on the telephone. Once the providers established a connection, they performed a subjective health interview focusing on distressing symptoms. Patients were asked to rate distressing symptoms like pain, dyspnea, and nausea to identify the need for an intervention. The provider then made an intervention plan that was agreeable to the patient to help palliate the identified symptom. The provider documented all the symptom finding and any interventions performed in the electronic medical record and noted if the encounter was a video or telephone visit. The category of intervention performed was also documented. Hospital consultations continued as in-person-visits in compliance with hospital guidelines.
Data Analysis

Provider Perception Analysis

The perception measures from the provider survey were analyzed qualitatively using content analysis to identify recurring themes from the provider.

Symptom Analysis

The descriptive statistics of the symptoms data was computed. The frequencies and distribution of each of the patient’s reported ratings for pain, dyspnea and nausea were calculated.

Intervention Analysis

The intervention data was analyzed for descriptive statistics. The frequencies and percentages for pharmacological, non-pharmacological or a hospice referral were calculated.

Telehealth Descriptive Data Analysis

Telehealth descriptive data was analysed by calculating the percentages and frequencies of the diagnosis, category of telehealth visit, either video or telephone visit, and total number of the patient visits.

Results

Provider Perception

Seven providers participated in this QI project and responded to the surveys at the start and at the end of the project. The main themes that emerged from content analysis were the acceptance of telehealth, preference for in-person visits and the technical limitations of telehealth.
Acceptance of Telehealth in Palliative Care

Acceptance of telehealth in palliative care is one theme identified. This is defined as how the providers accepted the utility of using telehealth during the pandemic when in-person visits were not possible. Providers consider telehealth a useful tool to provide services when they could not make in-person visits. One provider stated “Many of my palliative care patients are at high risk for developing life threatening symptoms from Covid. Telehealth provides a safe alternative” (see Appendix A for full survey responses).

The Preference For In-Person Visits

This theme is the providers preference for in-person visits. This is defined as the preference for seeing patients in a traditional in-person visit. One provider stated “I prefer face to face visits.” (see Appendix A for full survey responses).

Limitations of Telehealth

The biggest barriers to using telehealth was unreliable connectivity and limited technical ability of patients and families. This is defined as failure of the video application to work for any reason. This could be connectivity or limited technical capability of the patient population. One provider stated “Internet outages, user error.” Patients older than 70 years seem to have a lot of difficulty, but usually do well once a child or grandchild help them through the first few visits. Our telehealth program had a glitch where it cuts off the picture if the patient received a phone call while on telehealth” (see Appendix A for full survey responses).

Symptom Results

Frequencies and percentages were calculated for each patient’s rating on the pain, dyspnea, and nausea scales. The most frequently reported value for pain, dyspnea and nausea
was 0 with \( n = 51; 81\% \), \( n = 56; 89\% \), \( n = 63; 100\% \) respectively. Frequencies and percentages are presented in Table 1.

**Intervention Results**

Frequencies and percentages were calculated for each category of intervention for pain, dyspnea and nausea intervention. The interventions are what the providers did after they identified a distressing symptom. The providers referred two patients to hospice for identified pain and one for dyspnea. The most frequently implemented pain intervention was no intervention \( (n = 51; 81\%) \); followed by non-pharmacological intervention \( (n = 6; 9.52\%) \). The most frequently implemented dyspnea intervention was no intervention \( (n = 58; 92\%) \) followed by pharmacological intervention \( (n = 4; 6.35\%) \). The most frequently implemented nausea intervention was no intervention \( (n = 58; 92\%) \) followed by one pharmacological intervention \( (n = 1; 1.59\%) \). Frequencies and percentages are presented in Table 2.

**Telehealth Descriptive Data Results**

The total number of telehealth visits was 63. Video visits were the most frequently seen category of telehealth visits \( (n = 36; 57\%) \) with the remaining visits being telephone visits \( (n = 27; 43\%) \). The most common diagnosis was a neurological disorder that involves a degeneration of the nervous system \( (n = 32; 51\%) \) followed by pulmonary and cardiac. Frequencies and percentages are presented in Table 3.

**Discussion**

The purpose of this QI project was to implement telehealth at CBPC for a population of palliative care providers. The COVID-19 pandemic and the public health response has been unprecedented in modern history and telehealth was viewed as a valuable tool requiring provider acceptance to be effective to stay connected with patients while maintaining quarantine
requirements (Calton et al., 2020; Etkind et al., 2020; Keshvardoost et al., 2020; The Lancet, 2020; Tran et al., 2020). Providers in this project accepted telehealth as a tool to maintain services while protecting vulnerable populations. The main benefit of telehealth visits was seen as protecting vulnerable people (Monaghesh & Hajizadeh, 2020; Smith et al., 2020). One provider stated, “in the COIVD pandemic it has allowed providers to continue to operate as normally as possible.” However, provider acceptance comes with a realization of the limitations of the technology and preference for in-person visits. One provider stated, “Telehealth allows visits but is not a replacement for in person visits” (see Appendix A for full survey responses). Telehealth technical limitations were considered tolerable when contrasted with the COVID-19 pandemic (Monaghesh & Hajizadeh, 2020; Smith et al., 2020).

The providers were able to make visits, identify symptoms and make intervention via telehealth with 63 total visits and a range of different diagnoses. The providers demonstrated the ability of identifying patients experiencing pain, dyspnea, and nausea in a telehealth visit. They were then able to implement interventions based on these symptoms to help alleviate the patients’ symptoms. Three patients were referred to hospice and seven patients needed pharmacological interventions. This reflects telehealth utility in symptom management (Bonsignore et al., 2018; Hennemann-Krause et al., 2015; Jamwal & Kumar, 2016; Meghani et al., 2017; Worster & Swartz, 2017)

**Limitations**

Telehealth utilization was limited by connectivity and usability. Almost half of the telehealth visits were completed as telephone visits. The project has limitations related to the provider population size at seven and number of telehealth visits conducted at 63. A retrospective study using a larger data set of telehealth visits would be useful in future studies.
Conclusion

This QI implemented telehealth for a population of palliative care providers. The providers accepted this technology and viewed it to continue their practice during a difficult time. COVID-19 pandemic increased the barriers to providing palliative care (Calton et al., 2020; Etkind et al., 2020; Keshvardoost et al., 2020; The Lancet, 2020; Tran et al., 2020). The technology was useful, but the providers experienced it limitation on a daily basis. This Telehealth increased access, provided system management and helped overcome barriers (Bonsignore et al., 2018; Hennemann-Krause et al., 2015; Jamwal & Kumar, 2016; Meghani et al., 2017; Worster & Swartz, 2017) The providers accepted telehealth as part of their practice, however, giving the choice providers prefer in-person visits. The providers valued in-person visits for both physical assessment and difficult conversations.
References


### Table 1

*Frequency Table for Ordinal Variables of symptom rating*

<table>
<thead>
<tr>
<th>Variable</th>
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<th>%</th>
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<td>0</td>
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<td>1</td>
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</tr>
<tr>
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<td>Dyspnea_Rating</td>
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</tr>
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<td>1.59</td>
</tr>
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</tr>
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<tr>
<td>Nausea_Rating</td>
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</table>

*Note.* Due to rounding errors, percentages may not equal 100%.
### Table 2

*Frequency Table for Nominal Variables of intervention of intervention category*

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<td></td>
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<td>84.13</td>
</tr>
<tr>
<td>Pharm</td>
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<td>3.17</td>
</tr>
<tr>
<td>Non-Pharm</td>
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<td>9.52</td>
</tr>
<tr>
<td>Hospice Referral</td>
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<td>3.17</td>
</tr>
<tr>
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<td>0.00</td>
</tr>
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<td><strong>Dyspnea_intervention</strong></td>
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<td></td>
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<tr>
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<td>0.00</td>
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<tr>
<td><strong>Nausea_intervention</strong></td>
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</tbody>
</table>

*Note.* Due to rounding errors, percentages may not equal 100%.
Table 3

*Frequency Table for Nominal Variables*

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<tr>
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</thead>
<tbody>
<tr>
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<td></td>
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<tr>
<td>Telephone visits</td>
<td>27</td>
<td>42.86</td>
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<tr>
<td>Video visits</td>
<td>36</td>
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<td><strong>Diagnosis</strong></td>
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</tr>
<tr>
<td>Pulmonary</td>
<td>13</td>
<td>20.63</td>
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<td>Cardiac</td>
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<td>15.87</td>
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<tr>
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<td>3.17</td>
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<tr>
<td>Infection</td>
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<td>1.59</td>
</tr>
<tr>
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</tbody>
</table>

*Note.* Due to rounding errors, percentages may not equal 100%.
Appendix A

Open-ended questions survey responses and responses.

Q1 Share how you feel telehealth can help you as a provider better serve your palliative care patients?
1. “I prefer face to face visits.”
2. “In person visits are better”
3. “It allows for quick/frequent access to the patient.”
4. “No response”
5. “Telehealth allows visits but is not a replacement for in person visits”
6. “I can visit with patients more frequently. Easier to manage symptoms and make medication changes without having to wait for a”
7. month f/u.
8. “It's something to do when we can’t see people in person.”
9. “Wish we didn’t have to use it at all”
10. “In the COVID pandemic it has allowed providers to continue to operate as normally as possible.”
11. “No response”
12. “Prefer in person visits”
13. “No response”
14. “Prefer in person visit”

Q 2 What features of the telehealth did you find most useful in assisting with the patient

1. “Video capability”
2. “No response”
3. “Video is more useful than making a phone call
4. “The patients can turn up the volume.”
5. “Video is good.”
6. “No response”
7. “We do not currently have any additional features other than video.
8. “Able to see the patient in their home environment, able to speak to other family members or caregivers. Able to provide visits even on days when the weather would have made the visit difficult.”
9. “No response”
10. “No response”
11. “No response”
12. “No response”
13. “Protects patient but not as good as in person”
14. “No response”

Q 3 Share some of the challenges while using Telehealth for palliative care services?

1. “Responses.”
2. “Difficult to get good assessment”
3. “No response”
4. “Nothing compares to an in-person visit for accuracy and detail in assessing a patient.
5. “Patients being confused with technology in general. Also patients sleeping through the visit and missing my invitation.”
6. “Connectivity”
7. “It not in-person”
8. “No response”
9. “Internet outages, user error. Patients older than 70 seem to have a lot of difficulty, but usually do well once a child or grandchild helps them through the first few visits. Our telehealth program had a glitch where it cuts off the picture if the patient received a phone call while on telehealth.”
10. “Can’t do physical assessment”
11. “No response.”
12. “Connectivity.”
13. “Patient understanding how to use it.”
14. “I like doing in person visits”

Q4 What features of Telehealth did you not find most useful for the palliative care environment?

1. “I don't like telehealth”
2. “No response.”
3. “none. the goal of palliative is to discuss advance care planning and manage symptoms related to life-limiting illness. TH has not stopped either one of these.”
4. “None prefer regular visits”
5. “Sometimes the end-of-life, goals of care, and code status conversations are difficult to have on video. Important to find the right. “style” to use to begin and end calls. Body language, eye contact, and active listening skills seem to be even more important on camera to make sure patients know you're listening and engaged.”
6. “It not that useful, just better then nothing.”
7. “No response”
8. “It is better than nothing. I like the video”
9. “It protects our patient”
10. “It useful for social distancing”
11. “Video”
12. “No response”
13. “Video is good”
14. “No response”

Q5 How could Telehealth be improved to better improve your practice in the palliative care environment?

1. “Better video clarity”
2. “no response.”
3. “Let's go back to normal”
4. “Connectivity”
5. “I hear there may be an opportunity to purchase iPads for our patients to use; that would be amazing as long as we had the time and staff to provide the education those patients would need.”
6. “Prefer to go back to in-person.”
7. “Would like it to work better.”
8. “Better connectivity”
9. “It needs be be a lot more user friendly”
10. “Nothing”
11. “No response”
12. “Better video quality”
13. “No response”

Q6 What barriers did you experience when using telehealthcare in providing care in palliative care?

1. Poor connections and knowledge deficits on technology use by pts/family
2. Poor internet.
3. No response
4. Not being reliable.
5. Connectivity
6. “No seeing people”
7. “It only works half the time”
8. “Connectivity”
9. “It helps protect patients but it still feels remote.”
10. “No response”
11. “Technical capability of the patients”
12. “No response”
13. “Not being able to touch the patient”
14. “No response”