Harnessing New and Existing Virtual Platforms to Meet the Demand for Increased Inpatient Palliative Care Services During the COVID-19 Pandemic: A 5 Key Themes Literature Review of the Characteristics and Barriers of These Evolving Technologies

Holly R. Cherniwchan, BHSc[1]

Abstract

The COVID-19 pandemic has increased the demand for end-of-life services and bereavement support, and in many areas of the world, in-person palliative care is struggling to meet these needs. Local infection control measures result in limited visitation rights in hospital and patients are often dying alone. For many years, virtual platforms have been used as a validated alternative to in-person consults for outpatient and home-based palliative care; however, the feasibility and acceptability of a virtual inpatient equivalent is less studied. Virtual inpatient palliative care may offer a unique opportunity for patients to have meaningful interactions with their care team and family while isolated in hospital or in hospice. This narrative review examines strategies employed during the COVID-19 pandemic to implement virtual palliative care services in the inpatient setting. Five key themes were identified in the literature between January 2020-March 2021 in the LitCovid NCBI database: 1) overall acceptability of virtual inpatient palliative care during the pandemic, 2) important logistical considerations when developing a virtual inpatient palliative care platform, 3) commonly used technologies for delivering virtual services, 4) strategies for harnessing human resources to meet increased patient volume, and 5) challenges of virtual inpatient palliative care implementation. Upon review, telepalliative care can meet the increased demand for safe and accessible inpatient palliative care during a pandemic; however, in some circumstances in-person services should still be considered. The decision for which patients receive what format of care—in-person or virtual—should be decided on a case-by-case basis.

Keywords

telehealth, virtual, inpatient, palliative care, COVID-19, videoconferencing

Introduction

The COVID-19 pandemic has resulted in an increased demand for palliative care services, such as goals-of-care discussions, end-of-life (EoL) services, and psychosocial or other bereavement support. However, traditional in-person palliative care systems may neither be a safe nor feasible way to accommodate this surge in patients, due to reduced personal protective equipment (PPE) supply, increased infection risks, and infection control protocols. Since quality palliative care is a basic right of every dying patient,[1] it is important that healthcare teams adapt to the pandemic and find ways of providing holistic palliative care services to patients and families. We are in a unique position to learn from the strategies employed during the COVID-19 pandemic and move toward developing better standards of care. One way to meet this increased demand for services while mitigating infection risk is through virtual palliative care platforms.

During pandemics, inpatient virtual palliative care becomes an attractive option, as it can permit family, friends, and other holistic care team members to safely visit their loved ones who are otherwise dying alone in hospital, without straining the PPE supply or increasing community disease spread.[2] However,

[1] The University of British Columbia Faculty of Medicine, Vancouver, British Columbia, Canada

Corresponding Author:
Holly R. Cherniwchan, BHSc, The University of British Columbia Island Medical Program, 317-2194 Health Sciences Mall, Vancouver, British Columbia, Canada V6T 1Z3.
Email: cherniwc@student.ubc.ca

while extensive literature exists to validate outpatient and community-based virtual palliative care,[3] fewer studies have investigated the acceptability of an inpatient equivalent. The goal of this narrative review is to address this gap in the literature and examine how virtual inpatient palliative care has been employed during the COVID-19 pandemic. This review aims to gather relevant information on this method of care delivery to help move toward better operational guidance for palliative care services during pandemics.

Search Strategy and Selection Criteria

In November 2020, a preliminary literature search was conducted on the LitCovid NCBI Database using the following Boolean phrase:

((palliative) OR (end-of-life) OR (hospice) OR (dying)) AND ((virtual) OR (internet) OR (telemedicine)) AND (COVID-19) OR (Sars-Cov-2) AND (inpatient)

For the purposes of this review, "inpatient" refers to care delivered outside of the home or community, such as in the ICU, in other hospital wards, and in hospice. "Virtual palliative care" refers to services delivered using video- or audio-capable technology. Articles that addressed 1) video- or audio-capable virtual palliative care, 2) in an inpatient setting, and 3) during the COVID-19 pandemic were included for review. These articles ranged from case studies to randomized controlled trials and included patient populations ranging from children to the elderly. As this is not a systematic review, articles were not evaluated on their quality of methodology.

A secondary literature search was conducted in March 2021 using the same Boolean phrase to collect new articles published between November 2020 and March 2021. Thus, all relevant articles in the LitCovid database from the beginning of the pandemic up to and including March 2021 were assessed. If, upon reading an article, other relevant references were identified, they were manually included for review.

A narrative review is appropriate for this research question, as virtual inpatient palliative care is an emerging field. The articles on the subject are heterogenous, and do not lend well to a systematic review. The goal of this paper is to gather the current knowledge on the topic in a comprehensive, critical, and objective manner. Through this review, I aim to identify existing patterns, trends, and gaps, such as to set a baseline for more narrow research questions in the future. While narrative reviews are subject to more bias than systematic alternatives, the methods are outlined such that other authors can replicate the search process and yield similar results.

Results

Using the selection criteria above, 47 articles were identified in the LitCovid database. Of these, only 36 articles were read in entirety and thematically analyzed. The most relevant and common themes were included in the discussion of this review. Eleven articles were excluded from review as they focussed primarily on outpatient care, or discussed details of hospice

recertification and palliative care workflow that were irrelevant to the goals of this paper. Analysis of the literature yielded 5 main themes on this topic: 1) overall acceptability of virtual inpatient palliative care during the pandemic, 2) important logistical considerations when developing a virtual palliative care platform, 3) commonly used technologies for delivering virtual services, 4) strategies for harnessing human resources to meet the increased patient volume, and 5) challenges of virtual inpatient palliative care implementation.

Theme 1: Overall Acceptability of Virtual Inpatient Palliative Care Services During the Pandemic

Strict inpatient visitation restrictions due to COVID-19 have meant that many people are dying alone in hospital. This has increased the prevalence of persistent grief disorder[4] and other psychosocial, spiritual, and existential suffering.[2,5] Fifteen articles in the literature search addressed patient, caregiver, and staff acceptability of virtual inpatient palliative care and its ability to combat this complex suffering.

In each article, most patients and staff endorse that virtual inpatient palliative care is an acceptable alternative to in-person services, with percent acceptability ranging from 70%-100%.[3,6-10] This is because virtual inpatient palliative care has been shown to improve the death and dying experience for patients and their families during the pandemic by bridging the isolation gap safely, and increasing one's sense of empowerment and ability to cope with adversity.[11] In one satisfaction survey, 97.1% of palliative care patients and 100% of caregivers felt comfortable having sensitive conversations over video,[3] and offering virtual connection solutions increased patients' access and desirability to go to hospice during the pandemic.[12] As compared to the standard of care, there is also a good concordance on care goals with the online inpatient format, even for difficult decisions like discharge planning and withdrawal of life-sustaining treatment.[9] Most patients still did not endorse, however, that technology could ever substitute a family member's true presence at clinical rounds.[13]

Virtual palliative care also allows for easier access to patients by staff and family. Staff who would otherwise be restricted by childcare duties may be able to work from home, and family members from abroad can be more involved in their loved ones care than would may have been possible before COVID-19.[9] Virtual palliative care platforms also create space for virtual support groups for bereaving families.[14]

Logistically, virtual inpatient palliative care is successful in limiting COVID-19 exposures and sparing PPE,[2,7] which reduces staff burnout and workplace anxiety.[11,14,15] Without masks obscuring facial expressions, video-capable virtual inpatient palliative care permits meaningful engagement with patients and families,[2,5,7] as well as fosters a sense of anonymity that makes some patients feel more comfortable disclosing sensitive information.[16] Costs associated with transportation, local orientations, and mask fit testing are also reduced.[17]

It is important to note that while patients and their loved ones were generally impressed with the quality of care

provided on a virtual platform,[6,9,12] 23% of the staff cohort in one study reported risks to their mental well-being when facilitating inpatient family e-meetings.[6] Many workers bore witness to grief in the patient-family interactions that would normally be private[6] and this repeated exposure to trauma can be draining.[18] Combined with challenges in setting up and learning to use the equipment, some staff resisted adjusting to these changes. The success of virtual inpatient palliative care relies on detailed training and support for staff to ensure it is a less straining experience.[6]

In conclusion, virtual inpatient palliative care is an accessible and acceptable option during pandemics for most patients, family, and staff. The literature supports that a variety of inpatient palliative care services, including EoL support, goals-of-care conversations, and other counseling, are feasible in a virtual format. However, virtual platforms often cannot truly substitute for the real presence of a family member at the patient's bedside and virtual delivery systems may still be challenging for health care workers to adjust to despite technical assistance.

Theme 2: Important Logistical Considerations When Developing a Virtual Palliative Care Platform

Eleven articles discussed important logistical considerations of virtual palliative care platforms. Firstly, inpatient palliative care platforms should embody as many elements of its in-person equivalent as possible and thus offer holistic EoL support. This may include providing psychosocial and spiritual services, such as guided meditation,[19] choir, and yoga, in addition to the regular physician and family meetings.[20] Volunteer activities like live storytelling, friendship calls, and craft sessions, as well as group bereavement support should be considered for virtual pediatric hospice care.[21] Finally, by taking the time to value, acknowledge, listen, understand, and elicit the emotions and feelings of patients and their families (the VALUE approach), physicians can prevent emotional disorders like post-traumatic stress disorder in the bereavement period and encourage more rewarding discussions.[9]

It is also recommended that clinicians follow uniform frameworks when facilitating e-meetings for quality assurance purposes.[3,7,22] One such example includes the "Video Goodbye Tool," which provides example language for arranging the meeting, preparing the family to see their loved one, supporting the family in saying goodbye, and closing the visit.[22] Other studies provide tips for essential "webside" manner skills when conducting serious illness conversations,[23] which include:

1. Proper set-up: conduct the meeting in a well-lit private space, with the head and upper third of the torso visible on screen, maintaining eye contact, and using a professional backdrop.
2. Acquainting the participant: at the beginning of the meeting wave hello and check in on how you can improve the experience for the participant. Avoid prolonged silence.

3. Maintaining conversational rhythm: minimize overtalking and avoid saying "mhmm"; instead, gently nod.
4. Responding to emotion: convey empathy and intentional listening by placing hand over heart, nodding gently, and leaning toward the camera.
5. Closing the visit: at the end of the session, summarize the visit and clarify the patient's or family's understanding. Provide them with a final opportunity to voice questions or thoughts.

Other tips for e-family meetings include identifying a single point person in the family to schedule meetings with and provide direct meeting instructions via email.[3,7]

It is also critical that a palliative care teleconsult program be culturally appropriate to the population it will serve. The death and dying experience is heavily entrenched in culture.[24] Failing to address and respect cultural differences in a palliative care program exacerbates racial and ethnic inequities in healthcare (HC).[25] Thus, it is important to consider involving the broader community in the development process, such that virtual inpatient palliative care programs are culturally-based and welcoming to everyone.

Similarly, virtual inpatient palliative care programs must also suit the work culture. Nurses, physicians, volunteers, and support workers must be given space to contribute their thoughts on the development of such programs so that they are accepted by all staff.[4]

In summary, virtual inpatient palliative care programs can be most successful if they adopt an organized, holistic care framework that emphasizes both the VALUE approach and important aspects of "webside manner." These programs must also respect the unique cultures of the patient populations and work environments that they serve.

Theme 3: Commonly Used Technologies for Delivering Virtual Platforms

Each article contained information regarding technologies used to deliver care. Most virtual inpatient palliative care programs trialled during the COVID-19 pandemic had 3 core components:[13]

1. Standard operating procedure for the safe use of digital software during inpatient palliative care consults and family visits.
2. Tablet procurement with installation of video telehealth software.
3. Training for clinical staff and other stakeholders, with emphasis on how to humanize video care sessions.

Tablets were the most common devices used to deliver video-capable virtual clinical consultations and family visits.[2,6,7,11,13,26] Patients were either equipped with their own tablets, or shared tablets were carried between rooms. This approach was generally well regarded by family and patients, and in one study 80% of respondents agreed or strongly agreed

that they were able to comfortably express their thoughts with the clinical team.[7] Families felt that the virtual meetings helped them to better trust the HC team and understand their loved one's goals of care.

Smartphone-enabled telepalliative care models have also been trialled during the COVID-19 pandemic.[9,12] Similar to tablets, smartphones with video capability permit the visualization of non-verbal cues, which is important for patient rapport.[9] In these studies, patients typically used their own smartphones, which saved time and money in procuring tablets. While no particularly bad experiences were reported and overall family satisfaction was high, 30% of families said that they would not want to do videoconferencing again on smartphones as the screens were too small.[9] However, in one study that implemented virtual inpatient palliative care services in a resource-limited area, over 90% of participants owned a smartphone with video capability, whereas only 75% had stable internet connection and less than 50% had computers.[10] Smartphone usage is consistent across racial groups, thus it is important to consider making telehealth services mobile-friendly.[27]

While popular commercial solutions like WhatsApp™, FaceTime™, Zoom™ were used in some studies, these platforms may be incompatible with hospital cybersecurity domains.[6] Dedicated HC platforms are sometimes needed, with a common example being Attend Anywhere™. This platform prevents screen recording by receivers and offers multiple in-program language translations to aid in difficult conversations with patients whose first language is not the same as the care provider.[6,11]

Another type of virtual service that has been used for inpatient palliative care is virtual reality (VR). Patients at EoL who are isolated from family can wear VR headsets to experience a peaceful or familiar environment as they pass, or travel to "bucket list" destinations before they die.[28] With this technology, patients can also be filmed and projected in a hologram-like format for the families grieving at a distance. VR live streaming (which connects hospital rooms and homes) permits patients and families to feel like they are in the same room.[29] While this technology has great promise in assisting the grieving process, the equipment is expensive and limited by a stable broad-band internet connection.

Finally, a more unique approach to virtual inpatient palliative care was demonstrated by the Houston Methodist Hospital, which adopted a virtual ICU (vICU) for their COVID-positive patients.[15] This system involved built-in video cameras in each room, so that family visitation, palliative care delivery, and specialist consultation could be done without the assistance of bedside nurses. This approach reduced staff burnout, lowered ICU mortality rates, spared PPE, and promoted adherence to best practices as compared to traditional standards of care.[15]

It is important to recognize that technology is imperfect and HC teams must have a back-up plan. Clinicians should consider converting to a telephone visit if there are persistent technical issues, if patients are too ill to participate, or if patients find virtual visits too technically challenging.[23] Another reason to move to a phone consult would be if family members find it too

difficult to witness the deterioration of their loved one's physical condition over a virtual platform.[13]

In conclusion, a variety of technologies have been used during the COVID-19 pandemic to deliver virtual inpatient palliative care services, including virtual reality, built-in video-conferencing systems, and tablet- and smartphone-compatible programs. Each type of technology has its unique benefits and drawbacks. Regardless of the delivery system used, if any of these technologies threaten to disrupt a patient encounter due to connectivity issues, it is important to consider switching to a telephone consult for the remainder of the visit.

Theme 4: Strategies for Harnessing Human Resources to Meet Increased Patient Volume

Virtual inpatient palliative care programs during a pandemic are only feasible if existing human resources can meet the increased demand for palliative care.[30] Eight articles offered suggestions for how the palliative care teams can accommodate this increased patient volume. This may require looking for support from HC professionals in less-affected areas of the country.[17,31] An advantage of virtual palliative care programs is that HC providers need not be in the same location as the population they are serving. In one study, a nation-wide social media outreach program recruited 67 telepalliative care volunteers from across the country.[17] These volunteers received expedited credentialing and offered virtual inpatient palliative care services in 5 hospitals without prior telehealth infrastructure, and were able to provide quality services to all requiring patients in their state. Proactively establishing similar networks and lines of communication between palliative care specialists could be a highly effective method for mobilizing palliative care supports in the event of another global or national health emergency. Challenges with this approach however include poor continuity of care and requires intense interdepartmental effort.

It has also been suggested that the scope of specialist palliative care providers be expanded to include a role for preparing the HC system and non-palliative care colleagues to handle the expanded demand for high-quality palliative care during crises.[30,32] This would include offering education and support, and advocating for palliative care needs to be incorporated into system-level response plans.[26] Similarly, social workers should move to include an assessment of families' technological access, capabilities, and preferences as part of the psychosocial or home assessment.[5]

In order for virtual inpatient palliative care services to succeed, some HC providers must be on the ground facilitating these sessions. Most often, bedside nurses help patients navigate the tablets, while physicians and other specialists are connected virtually, supporting as many patients as possible while lowering the spread of COVID-19.[19,33]

In summary, the COVID-19 pandemic has motivated health care teams across the world to find new ways of recruiting personnel to assist in providing quality virtual inpatient palliative care. Adding digital literacy evaluations into inpatient

assessments as well as incorporating palliative care into systems-level pandemic response plans are valuable considerations moving forward to ensure better access to virtual palliative care when the next global health crisis occurs.

Theme 5: Challenges of Virtual Inpatient Palliative Care Implementation

Challenges of virtual inpatient palliative care were highlighted in each article. Many authors commented that the interactions over videoconference are fundamentally different than in-person consults. Therapeutic silence can be misinterpreted as poor connection, loud background noises can interfere with engagement,[19] and the lack of non-verbal cues and physical touch can decrease patient engagement and satisfaction.[7,17] It is also challenging to provide interdisciplinary care over a phone or video call, which may mean that patients and their families must take multiple different calls from their HC team.[34] Poor network transmission and cellphone reception are also common difficulties.[7,9]

Additional privacy and security issues exist with virtual platforms.[15] Protecting telehealth data requires transferring information to a secure hospital-based record system and later deleting data from the original devices (also known as a "store-forward-delete system").[34] Furthermore, patients and family may not feel comfortable participating fully in conversation if the visit is not in a private setting.[35] Working from home also carries with it potential distractions and risks to confidentiality.[20]

Telehealth interventions are expensive and require continued technical assistance, skills development, and infrastructure investment, which can be challenging especially in resource-limited settings[10] and interfere with patient care.[36] Some staff may be opposed to implementing virtual inpatient palliative care, as this requires hours of additional training and adapting to a new workplace culture.[14,15,36] Moreover, billing frameworks are often not well-aligned with this format of care provision.[5] Furthermore, while specialists can provide consults from home, the nursing staff generally do not benefit from the virtual platform and become entirely responsible for a patient's bedside care.[2] Technology fatigue and telehealth burnout are also reported problems for both patients and physicians.[37]

Finally, virtual palliative care platforms carry with them a dual potential for enhancing access of services to underserved communities[38] as well as widening the digital divide. Since devices may be less available to racial and ethnic minorities,[27] virtual inpatient palliative care can only be equitable if the most vulnerable clients are supported with education and training, tablets and other equipment, as well as necessary technical support.[11,36] It is also important to recognize that virtual inpatient palliative care is not an option for some patient populations. Consults must be done in person for those who are hard of hearing or have low vision, who are unable to use technology, or who require a thorough physical exam.[2,8]

In conclusion, virtual palliative care is imperfect. Issues exist with connectivity, continuity of care, security and privacy, budgeting and billing, digital accessibility, and workplace dynamics. These barriers must be considered and addressed when implementing virtual inpatient palliative care.

Alternatives to Virtual Inpatient palliative Care During the COVID-19 Pandemic

There is concern that telehealth can be extended beyond the purposes it is best suited, reducing the quality of care where face-to-face contact is considered optimal and necessary, particularly for psychosocial and bereavement needs.[36] While one research team suggested in-person visitation rights should always be honored for family members of palliative care patients,[20] many authors agreed that exceptions to no-visitor policies are reasonable at the very EoL, to help patients and their families have closure.[4,19] Lack of in-person visiting at the moment of death can interfere with the farewell process and complicate grieving.[4,8]

Some clinicians even endorse that COVID-positive palliative care patients should be offered visitation rights if appropriate PPE is accessible and the case load is manageable.[4,8] This is because without regular in-person visiting, the inpatient nursing team must take on both roles of bedside care as well as inpatient psychosocial support, which can expedite caregiver burnout.

Some articles suggested that continuous home care be considered as an alternative to virtual inpatient palliative care. This entails providing community health services for patients requiring symptom management support at EoL, to keep patients comfortable at home with their families during a period of crisis.[5,39]

Study Limitations

This literature review was written from a narrative lens and thus the selected articles were not evaluated on methodological quality. Some of the studies included for review were exploratory and descriptive in nature and were not representative of all geographical and practice settings. Further, our search period only included up to March 2021 and thus does not address any newer advancements in virtual inpatient palliative care beyond this time. While a narrative review is subject to more bias, I attempted to mitigate this as much as possible by including my methodological process for article selection and employing strict inclusion criteria.

Conclusion

This paper discussed 5 central themes pertaining to the implementation of virtual inpatient palliative care during the COVID-19 pandemic that were identified upon review of the literature. Overall, telepalliative care does appear to have the capacity to meet the increased demand for safe and accessible inpatient palliative care during a pandemic. While virtual inpatient palliative care is not perfect and some challenges exist, this service allows patients to have meaningful

interactions with their extended care team and family while isolated in hospital or in hospice, and feel more supported as they approach EoL. Patients are generally satisfied with virtual visits and value the HC team's efforts, regardless of which devices are used.

We must not forget, however that palliative care patients are a complex, heterogenous population with differing needs. A one-size-fits all model will not suit this line of care, not even during a pandemic. Thus, redesigning hospice delivery systems should be done thoughtfully and in consideration of when in-person versus virtual visits are most appropriate, as well as take into account a community's cultural values and socioeconomic barriers to digital HC. The decision for which patients receive what format of care should remain an individual choice for both the patient and the family and staff supporting them.

In conclusion, the COVID-19 pandemic has accelerated the implementation of video- and audio-capable telehealth infrastructure across the world; these advances in and widespread acceptance of virtual communication technologies are definite silver linings of the current pandemic. Clinicians have had to rapidly adapt to virtual care provision, and for the most part, this type of care has worked well for patients. Moving forward, we should continue building on the positive contributions of virtual inpatient palliative care to the field of medicine. This way, we can ensure the continued development of telehealth technology and work toward evidence-based operational guidance for the delivery of virtual palliative care. By maintaining and building upon existing telehealth platforms and policies, we can be in a better position to deploy virtual communication services in the event of another unexpected health crisis.

ORCID iD

Holly R. Cherniwchan 🄳 https://orcid.org/0000-0002-1967-3905

References

1. Kastenbaum R. *Macmillan Encyclopedia of Death and Dying, 1st Edition—Gale—978-0028658810*. Vol 2. Kastenbaum R, ed. Macmillan Reference USA; 2002.

2. Humphreys J, Schoenherr L, Elia G, et al. Rapid implementation of inpatient telepalliative medicine consultations during COVID-19 pandemic. *J Pain Symptom Manage*. 2020;60(1):e54-e59.

3. Calton B, Abedini N, Fratkin M. Telemedicine in the time of coronavirus. *J Pain Symptom Manage*. 2020;60(1):e12-e14.

4. Münch U, Müller H, Deffner T, et al. Recommendations to support stressed, seriously ill, dying and grieving people in the corona pandemic from a palliative medical perspective [in German]. *Schmerz*. 2020;34(4):303-313.

5. Gergerich E, Mallonee J, Gherardi S, Kale-Cheever M, Duga F. Strengths and struggles for families involved in hospice care during the COVID-19 pandemic [published online November 23, 2020]. *J Soc Work End-of-Life Palliat Care*. 2020;1-20. doi:10.1080/15524256.2020.1845907

6. Dhahri AA, De Thabrew AU, Ladva N, Pardoe H. The benefits and risks of the provision of a hospital-wide high-definition video conferencing virtual visiting service for patients and their relatives. *Cureus*. 2021;13(2):e13435.

7. Kuntz JG, Kavalieratos D, Esper GJ, et al. Feasibility and acceptability of inpatient palliative care e-family meetings during COVID-19 pandemic. *J Pain Symptom Manage*. 2020;60(3):e28-e32.

8. Janssen DJA, Ekström M, Currow DC, et al. COVID-19: guidance on palliative care from a European Respiratory Society international task force. *Eur Respir J*. 2020;56(3):2002583.

9. Wu Y-R, Chou T-J, Wang Y-J, et al. Smartphone-enabled telehealth for palliative care family conference during the COVID—19 pandemic: pilot observational study (preprint). *JMIR MHealth UHealth*. 2020;8(10):e22069.

10. Chávarri-Guerra Y, Ramos-López WA, Covarrubias-Gómez A, et al. Providing supportive and palliative care using telemedicine for patients with advanced cancer during the COVID-19 pandemic in Mexico. *Oncologist*. 2021;26(3):e512-e515.

11. Ooi R, Ooi SZY. Use of technology in end-of-life care discussions with COVID-19 patients: a narrative of a single institutional experience. *Med Educ Online*. 2020;25(1):1830681.

12. Mercadante S, Adile C, Ferrera P, Giuliana F, Terruso L, Piccione T. Palliative care in the time of COVID-19. *J Pain Symptom Manage*. 2020;60(2):e79-e80.

13. Ritchey KC, Foy A, McArdel E, Gruenewald DA. Reinventing palliative care delivery in the era of COVID-19: how telemedicine can support end of life care. *Am J Hosp Palliat Care*. 2020;37(11):992-997.

14. Fadul N, Elsayem AF, Bruera E. Integration of palliative care into COVID-19 pandemic planning. *BMJ Support Palliat Care*. 2021;11(1):40-44.

15. Dhala A, Sasangohar F, Kash B, Ahmadi N, Masud F.Rapid implementation and innovative applications of a virtual intensive care unit during the COVID-19 pandemic: case study. *J Med Internet Res*. 2020;22(9):e20143.

16. Watts KA, Malone E, Dionne-Odom JN, et al. Can you hear me now?: Improving palliative care access through telehealth. *Res Nurs Health*. 2021;44(1):226-237.

17. Israilov S, Krouss M, Zaurova M, et al. National outreach of telepalliative medicine volunteers for a New York City safety net

system COVID-19 pandemic response. *J Pain Symptom Manage*. 2020;60(2):e14-e17.

18. Hauser JM. Walls. *Hastings Cent Rep*. 2020;50(3):12-13.

19. Mackey RM, Yeow ME, Christensen AR, Ingram C, Carey EC, Lapid MI. Reconnecting: strategies for supporting isolated older adults during COVID-19 through tele-palliative care [published online October 19, 2020]. *Clin Gerontol*. 2020:1-8. doi:10.1080/07317115.2020.1830905

20. Hawkins JP, Gannon C, Palfrey J.Virtual visits in palliative care: about time or against the grain? *BMJ Support Palliat Care*. 2020;10(3):331-336.

21. Ellis K, Lindley LC. A virtual children's hospice in response to COVID-19: the Scottish experience. *J Pain Symptom Manage*. 2020;60(2):e40-e43.

22. Frydman JL, Choi EW, Lindenberger EC. Families of COVID-19 patients say goodbye on video: a structured approach to virtual end-of-life conversations. *J Palliat Med*. 2020;23(12):1564-1565.

23. Chua IS, Jackson V, Kamdar M.Webside manner during the COVID-19 pandemic: maintaining human connection during virtual visits. *J Palliat Med*. 2020;23(11):1507-1509.

24. Kagawa-Singer M, Blackhall LJ. Negotiating cross-cultural issues at the end of life: "you got to go where he lives." *JAMA*. 2001;286(23):2993-3001.

25. Watts KA, Gazaway S, Malone E, et al. Community tele-pal: a community-developed, culturally based palliative care tele-consult randomized controlled trial for African American and White Rural Southern elders with a life-limiting illness. *Trials*. 2020;21(1):672.

26. Sese D, Makhoul A, Hoeksema L, Shoemaker L. The role of palliative care in COVID-19 [published online May 29, 2020]. *Cleve Clin J Med*. 2020. doi:10.3949/ccjm.87a.ccc036

27. Hughes MC, Vernon E. Hospice response to COVID-19: promoting sustainable inclusion strategies for racial and ethnic minorities. *J Gerontol Soc Work*. 2021;64(2):101-105.

28. Wang SSY, Teo WZW, Teo WZY, Chai YW. Virtual reality as a bridge in palliative care during COVID-19. *J Palliat Med*. 2020; 23(6):756.

29. Niki K, Okamoto Y, Ueda M.Response to Wang et al., Virtual reality as a bridge in palliative care during COVID-19 (DOI: 10.1089/jpm.2020.0212). *J Palliat Med*. 2020;23(7):892-894.

30. Arya A, Buchman S, Gagnon B, Downar J.Pandemic palliative care: beyond ventilators and saving lives. *CMAJ*. 2020;192(15): E400-E404.

31. Khurana DK, Raheja SG, Dayal M, Pande D, Ganapathy U. COVID 19: the new normal in the clinic: overcoming challenges in palliative Care. *Indian J Palliat Care*. 2020;26(suppl 1):S81-S85.

32. Powell VD, Silveira MJ. What should palliative care's response be to the COVID-19 pandemic? *J Pain Symptom Manage*. 2020; 60(1):e1-e3.

33. Weaver MS, Robinson JE, Shostrom VK, Hinds PS. Telehealth acceptability for children, family, and adult hospice nurses when integrating the pediatric palliative inpatient provider during sequential rural home hospice visits. *J Palliat Med*. 2020;23(5): 641-649.

34. Biswas S, Adhikari S, Gupta N, et al. Smartphone-based telemedicine service at palliative care unit during nationwide lockdown: our initial experience at a tertiary care cancer hospital. *Indian J Palliat Care*. 2020;26(suppl 1):S31-S35.

35. Cooley L. Fostering human connection in the COVID-19 virtual health care realm. *NEJM Catal Innov Care Deliv*. 2020;20(10). doi:10.1056/cat.20.0166

36. Luckett T, Donkor A, Phillips J, et al. Australian specialist palliative care's response to COVID-19: an anonymous online survey of service providers. *Ann Palliat Med*. 2021;10(3): 2747-2757.

37. Chwistek M. "Are you wearing your white coat?": Telemedicine in the time of pandemic. *JAMA*. 2020;324(2):149-150.

38. National Academy of Sciences. *Cancer Care in Low-Resource Areas*. National Academies Press; 2017.

39. Mitchell S, Maynard V, Lyons V, Jones N, Gardiner C.The role and response of primary healthcare services in the delivery of palliative care in epidemics and pandemics: a rapid review to inform practice and service delivery during the COVID-19 pandemic. *Palliat Med*. 2020;34(9):1182-1192.