Evaluating the use of video communication technology in a hospital specialist palliative care team during the COVID-19 pandemic [version 1; peer review: 1 approved]

Benjamin Crosby¹, Sarika Hanchanale², Sarah Stanley¹³, Amara Callistus Nwosu¹²-⁴

¹School of Medicine, University of Liverpool, Liverpool, Merseyside, L69 3GE, UK
²Academic Palliative & End of Life Care Department, Liverpool University Hospitals NHS Foundation Trust, Liverpool, L7 8XP, UK
³Marie Curie Hospice Liverpool, Liverpool, Merseyside, L25 8QA, UK
⁴International Observatory on End of Life Care, Lancaster University, Lancaster, Lancashire, LA1 4AT, UK

Abstract

Background: Healthcare professionals’ use of video communication technology has increased during the novel coronavirus disease (COVID-19) pandemic, due to infection control restrictions. Currently there is little published data about the experiences of specialist palliative care teams who are using technology to communicate during the COVID-19 pandemic. The aim of this evaluation was to describe the experience of a UK based hospital specialist palliative care team, who were using video communication technology to support care during the COVID-19 pandemic.

Methods: An online survey was distributed to the specialist palliative care team at a University teaching hospital in the North West of the UK. We asked participants to provide their views on the scope of use, barriers and future opportunities to use technology for communication in hospital palliative care.

Results: The survey was completed by 14 healthcare professionals. Participants indicated that the most common reasons for using the technology was to receive team updates (n= 14, 100%), participate in multidisciplinary team meetings (n=14, 100%), for education (n=12, 86%) and to facilitate cross-site working (n=9, 64%). We identified barriers to using the technology, which were summarised as: (1) user-based difficulties; (2) inadequate technological infrastructure; (3) data security, privacy and ethical concerns; and (4) concerns regarding staff wellbeing. Participants stated that technology can potentially improve care by improving communication with hospital and community teams and increasing access to education. We have used these findings to develop recommendations to help palliative care teams to implement this technology better in clinical practice.

Conclusion: Video communication technology has the potential to
improve specialist palliative care delivery; however, it is essential that healthcare organisations address the existing barriers to using this technology, to ensure that these systems work meaningfully to improve palliative care for those who are most vulnerable beyond the COVID-19 pandemic.

**Keywords**
Terminal care, supportive care, quality-of-life, palliative care, technology, digital health, innovation, ehealth

**Corresponding author:** Amara Callistus Nwosu (a.nwosu@lancaster.ac.uk)

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**Plain language summary**

**What is already known about this topic**
- Doctors and nurses are using video communication technology (e.g., Zoom and Microsoft Teams) more during the COVID-19 pandemic, so they can communicate with each other without meeting in person.
- Currently there is little information about the views of palliative care specialists who have used this technology to communicate during the pandemic.
- People with palliative care needs have more specialist care needs compared to other medical and surgical patients.

**What this paper adds**
- Our work provides information about the benefits and challenges of using technology in hospital palliative care.
- The most common reasons for using video communication technology was for staff members to receive team updates, take part in team meetings, for education and to help doctors and nurses in different hospitals to communicate better.
- We summarise the barriers to using the technology into four areas, these were: (1) user-based difficulties; (2) inadequate technological infrastructure; (3) data security, privacy and ethical concerns; and (4) concerns regarding staff wellbeing.

**Implications for practice, theory or policy**
- We have developed recommendations to help palliative care teams implement this technology better in clinical practice.
- Hospital leaders should fix the barriers that stop staff from using this technology well.
- More research is needed to see how well this technology works to help people who have palliative care needs.

**Introduction**

Novel coronavirus disease 2019 (COVID-19) is an urgent and spreading threat whose clinical and epidemiological characteristics are still being documented. Many healthcare organisations have implemented use of video communication technologies (e.g., Microsoft Teams and Zoom) for virtual communication to reduce interpersonal contact and the potential for viral transmission. This technology enables audio, video communication, messaging and file sharing. There is evidence that palliative care teams are also using this technology; however, there is limited data about the experience and views that healthcare professionals using this technology to provide palliative care during the COVID-19 pandemic.

People with palliative care needs generally have more specialist care needs compared to other medical and surgical patients.

Therefore, it is important to capture the experiences of palliative care professionals who have used technology to provide care during the pandemic, to determine how this technology can be best implemented in palliative care. Consequently, our aim for this evaluation was to describe the experience of a UK based hospital specialist palliative care team, who were using video communication technology to support care during the COVID-19 pandemic.

**Methods**

**Implementation of video-communication software at Liverpool University Hospitals NHS Foundation Trust (LUHFT)**

In March 2020, the palliative care team at the Royal Liverpool University Hospital (RLUH) of LUHFT, implemented Microsoft Teams and Zoom to facilitate communication between staff. The palliative care team support adult inpatients through an advisory service, and provides direct specialist care to patients in a 12-bed palliative care inpatient unit. The palliative care team also participates in daily handover with community palliative care services.

**Survey development**

We developed a 12 item survey (Extended data) using free-to-use online software (Google Forms: https://www.google.co.uk/forms/about/). The survey consisted of multiple-choice and open-ended questions. We asked participants to provide their views on the purpose, scope of use, barriers and future opportunities to use technology for communication in palliative care practice. We distributed the survey by email to all palliative care staff at RLUH in October 2020. We used Google Forms to analyse the data.

**Ethics statement**

The project was a service evaluation so ethical approval was not required. No personal data was collected about participants. Consent to participate was inferred by completion of the survey.

**Results**

**Participants**

We sent the survey to all doctors, nurses and administrators in the department (n=17), of which 14 (82%) people participated. In total, seven (50%) clinical nurse specialists, 5 (36%) doctors, 1 (7%) general nurse and 1 (7%) administrator completed the survey.

**Reasons for use of technologies in palliative care**

Participants indicated that the most common reasons for using the technology was to receive team updates (n=14, 100%), participate in multidisciplinary team meetings (n=14, 100%), for education (n=12, 86%) and to facilitate cross-site working (n=9, 64%) (Figure 1). All participants used the tools on-site (n=14, 100%) with some using the technology to work from home (n=8, 57%) or from an alternative work location (n=2, 14%).

**Barriers associated with technology use in palliative care**

Twelve (86%) participants reported that team meetings were stopped due to technical barriers (Figure 2). These barriers included problems with logging in (n=12, 86%), navigating the...
software (n= 6, 43%), connectivity (n=12, 86%), poor audiovisual quality (n=8, 57%), and a lack of training of how to use the technology (n=8, 57%). We summarised the barriers into the following four themes, these were: (1) user-based difficulties; (2) inadequate technological infrastructure; (3) data security, privacy and ethical concerns; and (4) concerns regarding staff wellbeing (Table 1).

Positive uses of technology in palliative care during the pandemic
We asked staff to provide their views of how technology has been used well in palliative care during the pandemic. Participants reported how technology was used to facilitate virtual assessment of inpatients, and to support communication with relatives. Participants discussed how the technology provided opportunities for staff to work remotely, which enabled team-members to connect with their work colleagues when they were not able to be on site. Participants shared their views of how technology can improve future palliative care. They presented ideas on how education access can potentially be improved by virtual participation, and how an online repository can be created to share resources. Staff discussed how technology can potentially improve the capacity for staff to work across sites and therefore, improve workflow consistency in these areas. Staff discussed the potential to improve community palliative care, by enabling staff to conduct virtual consultations and broaden the options to share information. However, staff also highlighted the importance to consider the user-needs and organisational requirements necessary, to ensure that the use of technology in clinical practice is safe, effective and efficient.
Development of recommendations
We used the barriers (identified by staff) for use of video communication technology in palliative care, to develop recommendations to help palliative care teams to implement this technology better (Table 1).

Discussion
Summary
In this paper, we have used the views of hospital-based specialist palliative care staff who were using video communication technology during the pandemic, to develop recommendations to help palliative care teams implement this technology better in clinical practice.

Strengths and contribution of the paper
To date, our paper is one of the few to provide the views of palliative care staff who were using video communication technology during the pandemic response. Our evaluation provides information about the staff identified benefits and challenges of using technology in hospital palliative care. We hope our process of developing recommendations to improve our service can be replicated by other settings and specialities.

Relevance with previous studies
Our findings are in line with other studies, which describe how technology was used to support in palliative care delivery during the pandemic. Similar to our staff’s perspectives,
other authors have described the potential of this technology to improve communication between healthcare professionals and support the delivery of virtual consultations of patients and their families. Furthermore, a pre-COVID study reports that palliative care staff generally had favourable attitudes toward video visits and telehealth for home consultations. Outside of hospital, researchers have also identified how online resources and virtual communities have helped to support palliative care professionals and the public during the pandemic. Furthermore, these technologies further complement existing initiatives to improve palliative care delivery through technological innovation.

We identified barriers to using technology in palliative care, which have been reported by other authors. Previous studies have identified the user-centred challenges of using technology in healthcare organisations, where difficulties in the implementation of information technology systems make it difficult for staff to work efficiently. There are advantages and disadvantages of different technological platforms. For example, the features of Microsoft Teams and Zoom may not align with the clinical workflow of healthcare organisations. Furthermore, many users enjoy the simplicity of Zoom, whereas many healthcare organisation favour Microsoft Teams due to integration with other software. Our work is also consistent with previous studies which highlight the ethical challenges of using patient data with technological systems. We also highlight the risk of widening inequalities between patients (and organisations) who have limited access to this technology.

Limitations
We are unable to comment about the efficacy, acceptability or effectiveness of this technology as this was outside the scope of this evaluation. Our analysis is small, from one centre and has limited transferability to other areas. Our findings are only relevant to the use of Microsoft Teams and Zoom, for the specific purposes they were used for in our hospital; therefore, our findings do not represent the other ways that technology was used in other centres during the pandemic. We acknowledge that there is a risk of recall and selection bias, as participants with strong views (both in support and against the use of technology in healthcare) may have been more likely to participate and provide feedback. Our data does not provide the perspectives of staff working in community and hospice palliative care settings or provide insight to the views of generalist staff who were delivering palliative care.

Implications for future policy and practice
There is potential to use technology to support palliative care communication in other settings, such as hospice and the community. Organisations who have rapidly adopted technology during the pandemic, should evaluate their practice to ensure that the use of these systems is safe, efficient and effective. Organisations should ensure that their staff have appropriate training to use this technology. Specifically, we encourage palliative care services to liaise with their information technology governance teams, to ensure that the data security implications of using this technology are addressed.

Implications for research
Further research is required to evaluate efficacy and effectiveness of using video communication technologies in palliative care. There is a need for both quantitative and qualitative research to provide data of the implications of using this technology, and to provide guidance of the role these technologies have in clinical practice. Further research to determine the potential of this technology to improve palliative care access to people who are difficult to reach is needed. Additionally, studies which evaluate quality outcomes, staff and user perspectives and cost-effectiveness of these approaches are also required.

Conclusion
Video communication technology has the potential to improve specialist palliative care delivery; however, it is essential that healthcare organisations address the existing barriers to using this technology, to ensure that these systems work meaningfully to improve palliative care for those who are most vulnerable beyond the COVID-19 pandemic.

Data availability
Underlying data

Extended data

This project contains the following extended data:
- Questionnaire

Data are available under the terms of the Creative Commons Zero “No rights reserved” data waiver (CC0 1.0 Public domain dedication).
References


Thank you for your contribution to the scientific literature on your experiences as palliative providers with telehealth technology during the pandemic.

We like that the introduction acknowledges and explores the idea that clinical video telehealth is a new frontier and that there are many unknown consequences of its use. It's also great that you try to explain why the experiences of the palliative care specialist are so important to examine, but we are left wondering if these points can be further emphasized. When you state “There is evidence that palliative care teams are also using this technology” we want to know why you want to examine this specialty? It might be helpful to state and elaborate here about how the pandemic has also brought palliative care to the forefront of the medical community. (The Lancet Editorial Staff. Palliative care and the Covid-19 pandemic. Lancet. 2020;395(10231):1168.)

In the second paragraph of the introduction, you expand on answering the question of “why discuss palliative care” by explaining that patients seen by palliative care providers are more complex and often times have more medical teams involved in their care. It might also be important to remind your readers that palliative care is also integral in providing psychosocial and bereavement support to patients, their families, and other healthcare workers, further exemplifying the importance of promoting connection through this new virtual means.

Aim is made clear: “to describe the experience of a UK based hospital specialist palliative care team, who were using video communication technology to support care during the Covid-19 pandemic.”

In terms of details of methods and analysis provided to allow replication:

○ Can you explain more about the “daily handover with community palliative care services”
since this might be a more unique aspect to your team than the consultative and palliative care unit roles

- Can you provide a copy of the survey? Were there any questions asking about overall satisfaction with video telehealth?

The study design is otherwise appropriate and this work has academic merit. Palliative care teams are generally small so kudos for getting 14 participants!

Results:
In your sentence describing figure 1, it would be helpful to put (MDT) after multidisciplinary team meetings so that there’s a reference for “MDT” in figure 1.

Figure 1 and 2 are great and provide new and interesting information. But we are left speculating a bit where and how you were using these video telehealth encounters? For example clinician vs clinician vs clinician to patient/family.

Love table 1! This is very important knowledge to share. We’re curious, however, in your third section (data security/privacy) what you mean by “departments”? You could make this statement more generalizable and state “Video-communication technology has to be consistent...”

Discussion:
We have a few ideas to add regarding limitations to acknowledge as well as providing more concrete ideas for next steps. For limitations, it’s important to acknowledge the bias associated with evaluating your own team. You provide a great objective summary of the implementation of telehealth technology during the pandemic. We're also curious about your team's impressions of the clinical and humanistic consequences (whether positive or negative) of its use.

In terms of next steps, it’d be helpful to suggest surveying other consultants/stakeholders as well as exploring patient and family perceptions. You could also expand the survey to other hospitals and palliative care teams. It’s great that you mention evaluating quality outcomes, user perspectives, and cost-effectiveness as examples for future investigation.

References

Is the work clearly and accurately presented and does it cite the current literature?
Yes

Is the study design appropriate and is the work technically sound?
Yes

Are sufficient details of methods and analysis provided to allow replication by others?
Partly

If applicable, is the statistical analysis and its interpretation appropriate?
Not applicable
Are all the source data underlying the results available to ensure full reproducibility?
Partly

Are the conclusions drawn adequately supported by the results?
Yes

**Competing Interests:** No competing interests were disclosed.

**Reviewer Expertise:** fall prevention, geriatrics, video telehealth, palliative care, QI

We confirm that we have read this submission and believe that we have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.