Original Article

PALLIATIVE MEDICINE

Palliative Medicine
2016, Vol. 30(3) 257–269

DOI: 10.1177/0269216315598068
pmj.sagepub.com
SAGE

Teleconsultation for integrated palliative care at home: A qualitative study

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Abstract

Background: Interprofessional consultation contributes to symptom control for home-based palliative care patients and improves advance care planning. Distance and travel time, however, complicate the integration of primary care and specialist palliative care. Expert online audiovisual teleconsultations could be a method for integrating palliative care services.

Aim: This study aims to describe (1) whether and how teleconsultation supports the integration of primary care, specialist palliative care, and patient perspectives and services and (2) how patients and (in)formal caregivers experience collaboration in a teleconsultation approach.

Design: This work consists of a qualitative study that utilizes long-term direct observations and in-depth interviews.

Setting/participants: A total of 18 home-based palliative care patients (16 with cancer, 2 with chronic obstructive pulmonary disease; age range 24–85 years old), 12 hospital-based specialist palliative care team clinicians, and 17 primary care physicians.

Results: Analysis showed that the introduction of specialist palliative care team-patient teleconsultation led to collaboration between primary care physicians and specialist palliative care team clinicians in all 18 cases. In 17/18 cases, interprofessional contact was restricted to backstage work after teleconsultation. In one deviant case, both the patient and the professionals were simultaneously connected through teleconsultation. Two themes characterized integrated palliative care at home as a consequence of teleconsultation: (1) professionals defining responsibility and (2) building interprofessional rapport.

Conclusion: Specialist palliative care team teleconsultation with home-based patients leads to collaboration between primary care physicians and hospital-based palliative care specialists. Due to cultural reasons, most collaboration was of a *multidisciplinary* character, strongly relying on organized backstage work. *Interdisciplinary* teleconsultations with real-time contact between patient and both professionals were less common but stimulated patient-centered care dialogues.

Keywords

Integrated delivery of health care, interdisciplinary communication, interdisciplinary health teams, palliative care, teleconsultation

What is already known about the topic?

- Integration of generalist and specialist palliative care into one team serves home-based patients well, provided that effective interprofessional communication and consultation leads to common aims and well-defined responsibilities.
- Teleconsultation or "telehospice" between home-based patients and telehealth nurses has proven successful with respect to patient satisfaction, but teleconsultation has never been studied from a multidisciplinary or interdisciplinary integrated care perspective in which a home-based patient can consult both his/her primary care physician (PCP) (generalist care) and, digitally, hospital-based palliative care experts.

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What this paper adds?

- We show that teleconsultation between a home-based patient and a hospital-based specialist palliative care team (SPCT) stimulates integration of care between PCPs and SPCT clinicians.
- Due to experiences of loss of control and constantly being judged, professionals seem to prefer *multidisciplinary* collaboration by means of teleconsultation: PCPs and SPCT clinicians separately (tele)consult with the patient, after which well-organized, interprofessional information exchange is required to create attuned care between professionals. Separate consults offer more personal freedom in engaging with patients and less interferences of working routines by colleagues.
- Teleconsultation enables *interdisciplinary* palliative care. With patient, informal carers, and professionals being simultaneously present in a single teleconsultation, reciprocity supports the "patient as a partner in the care process" and shared courses of action.

Implications for practice, theory or policy

- This article shows the opportunities and barriers of the transfer of expert care to the home via teleconsultation connecting patients, PCPs, and hospital SPCTs. (Lack of) technical possibilities, like access to broadband Internet, will determine the extrapolation of this study's results to lower income countries. Differences in the organization of palliative care in Europe (e.g. the role of primary care) may determine the local infrastructure in which teleconsultation can be applied.
- If interdisciplinary palliative care by means of teleconsultation technology becomes an ideal for future care, medical and nursing students should receive more training in becoming collaborative team players and in integrating technologized communication strategies in palliative patient care.
- Teleconsultation does not leave room for separate professional domains of expertise or running a solo palliative care practice. Teleconsultation has the potential to hamper professional territorialism and to integrate multidimensional palliative treatment and care.

Introduction

Integration of generalist and specialist palliative care into one team is presumed to serve home-based palliative care patients suffering from complex problems. Such integration requires effective interprofessional communication to generate common aims and well-defined responsibilities.[1–3] This article focuses on two possible forms of integration: the multidisciplinary and/or the interdisciplinary team care approach. Central to a *multidisciplinary* team care approach are multiple health care disciplines approaching the patient from their own perspective in individual consultations, followed by interprofessional interactions about the patient's state, future care, and collaboration.[4,5] An *interdisciplinary* approach contains a single consultation with all health care disciplines and the patient present at the same time. These interdisciplinary care consultations induce open discussions about care plans and care decisions between approximately equal conversation partners, including patients and family caregivers.[4,5]

Previous studies showed that consultations between primary care physicians (PCPs) and specialist palliative care teams (SPCTs) reduced patients' physical symptoms and anxiety.[6–9] Moreover, these consultations improved spiritual well-being and advance care planning.[6–8] Preconditions are that information is exchanged accurately and in a timely fashion.[6,9,11–14] Here, the role of synchronous *tele*consultation should be mentioned as a possibility to add to or create new palliative care team collaborations between differently located professionals. Teleconsultation presents new opportunities for palliative care knowledge sharing, taking professional responsibility, interpersonal relationships, and caring for patients.[15,16] As teleconsultation also raises concerns about technologization and medicalization of dying,[2,17] this study focuses on the feasibility of teleconsultation for collaborative care for Dutch home-based palliative care patients. This study's research questions are as follows: (1) whether and how teleconsultation supports the integration of primary care, specialist palliative care, and patient perspectives and services and (2) how patients and (in)formal caregivers experience collaboration through teleconsultation.

Methods

A qualitative study was employed that included serial observations of teleconsultations, unstructured interviews directly following teleconsultations, and serial semi-structured interviews with patients, family caregivers, PCPs, and SPCT clinicians. The Medical Research Ethics Committee of Arnhem-Nijmegen, Netherlands, approved this study (NL32164.091.10) in September 2010. The patients were recruited and data were recorded from November 2010 to March 2013.

Teleconsultation in community palliative care in the Netherlands

In the Netherlands, a PCP is primarily responsible for a home-based palliative care patient. The PCP manages professional home care and looks after the family. The PCP can call in specialist nursing for medical-technical care

(e.g. morphine pumps) and consult peers or specialist palliative care services by telephone. An out-of-hours primary care service takes care of patients during nights and weekends. For this study, synchronous audiovisual teleconsultation between a hospital-based SPCT and home-based palliative care patients was added to the existing community care model. PCPs were invited to attend the teleconsultations at the patient's home to build tripartite consultations between patient, PCP, and SPCT.[18]

Patient recruitment and informed consent

Home-based palliative care patients were recruited following a purposeful sampling procedure.[19] First author (J.G.) approached PCPs, a SPCT, and nurses of a large homecare institution to identify potential participants. The following inclusion criteria were applied: patients (1) were suffering from any advanced-stage cancer, (2) had an estimated life expectancy $\leqslant$3 months, (3) had a poor functional status (Karnofsky score $\leqslant$ 60)[20] (designated in the United States as "hospice appropriate"), (4) lived at home under the direct supervision of their PCP and were supported by an informal caregiver, (5) were over the age of 18 years, and (6) were Dutch-speaking. Cognitively impaired patients were excluded from this study. The death or dropout of patients defined the end of the study.

To establish theoretical replication,[21,22] the purposeful sampling was carried out along the variables patient age, experience with technology, and kind of disease. Therefore, two patients with end-stage chronic obstructive pulmonary disease (COPD) (inclusion criteria: Global Initiative for Chronic Obstructive Lung Disease (GOLD) Grade 4,[23] increasing exacerbation frequency, occurrence of co-morbidity, dyspnea, and cachectic syndrome) were also recruited.[24] A total of 18 home-based palliative care patients consented to participate. Of these, 16 patients suffered from cancer, and 2 patients suffered from severe COPD (patient age ranges from 24 to 85 years). Additionally, 17 informal caregivers, 15 PCPs (all related to the included patients), and 12 SPCT clinicians partook in this study.

Informed consent. Before the start of each case study, verbal consent was asked from a patient's PCP. Then, the patient and one of his or her close informal caregivers were asked for written informed consent by J.G.

Data collection—observations and in-depth interviews

Three methods for data collection were used in this study.

1. *Serial direct observations*. J.G. (male; trained qualitative researcher), supported by an observation guide (see Appendix 1[25]), observed the weekly teleconsultations at the patients' homes or alongside the SPCT clinicians in the hospital. Serial observations occasionally resulted in extensive research relationships with patients and involved professionals. The field notes also contained verbatim passages of actual teleconsultations.
2. *Semi-structured interviews*. In addition to the observations, J.G. conducted semi-structured interviews with patients, informal caregivers, PCPs, and SPCT clinicians.[26,27] For patients and SPCT clinicians, the data collection followed an iterative process: the results of earlier observations determined the number of interviews and the selection of topics from the interview guide (Appendix 2). For PCPs and informal caregivers, a baseline interview and an exit interview after the end of patient participation were administered.
   Interviews were audio-recorded and transcribed verbatim. All data were uploaded in CAQDAS ATLAS.ti (version 6) for analysis.
3. *Unstructured follow-up interviews*. J.G.'s presence at a patient's home or in the hospital before, during, and after the teleconsultations provided opportunities for unstructured follow-up interviews regarding the participants' experiences with the teleconsultation. If recorded, these interviews were transcribed verbatim. Otherwise, they were part of the field notes.

The researcher aimed for individual interviews, but family members sometimes participated in the interviews conducted at home. Such dyadic interviews mostly added an additional dimension as they offer triangulation of two perspectives on events.[28]

The practice of teleconsultation was repeatedly assessed from various participant perspectives at different moments in the palliative care trajectory. During the research period, interim analyses determined the focus for further investigations. Triangulation was applied between cases (a case consisted of one patient, his or her informal carer, his or her PCP, and the SPCT clinicians involved), between observational and interview data within a case, within interviews by approaching teleconsultation from different perspectives, and between the participants' various (professional) perspectives.[29–31]

Data collection resulted in a total of 55 semi-structured interviews (range 15–70 min), 40 unstructured follow-up interviews, and 129 field notes (Tables 1 and 2).

Data analysis

The qualitative data were analyzed using the open, axial, and selective coding that are common to a grounded theory approach.[19,29] The field notes and interview transcripts from the first 12 cases were open coded by J.G. After the open coding, a "constant comparative analysis"[29] was used to categorize the open codes under more general themes (using graphic network views in ATLAS.ti). By means of

Table 1. Case characteristics.

Patient	Age (years)	Gender	Diagnosis	Duration of study participation	Cause of end of study	Data generated with patients			Data generated within the case		
		M = male; F = female		*Total number of weeks*		*Interview*	*Unstructured Interview*	*Observation*	*Interview with PCP*	*Interview with informal caregiver*	*Interview with homecare nurse*
1	24	M	Osteosarcoma	2	Deceased		1	3	2	1	
2	30	M	Melanoma	3	Deceased			1	1		
3	43	F	Gastric intestinal cancer	35	Deceased	1	2	13	2	1	
4	49	F	Pancreas carcinoma	4	Deceased	1	2	5	1	1	
5	51	F	Urogenital cancer	5	Deceased	1	1	4	1		
6	54	F	Urogenital cancer	8	Expecting euthanasia	1	1	10	2	1	
7	58	M	Head and neck cancer	5	Transferred to hospice			3		1	
8	58	F	Breast cancer	3	Deceased			1	1	1	
9	60	M	Head and neck cancer	1	Dissatisfied with study			1			
10	63	F	Brain tumor	7	Deceased	1	2	6	1	1	
11	66	M	Pancreas carcinoma	2	Deceased		2	3		1	
12	69	F	Gastric intestinal cancer	7	Transferred to hospice		2	4	1		
13	74	M	Gastric intestinal cancer	5	Deceased			3	1		1
14	74	F	COPD	56	Ended after 1 year	1	3	8			
15	78	M	Urogenital cancer	18	Deceased	1	2	6	2	1	
16	78	M	Gastric intestinal cancer	43	Deceased	1	11	26	2		
17	81	M	COPD	31	Ended after 7 months		4	10	2		
18	85	M	Urogenital cancer	60	Deceased	2	7	22	1		

COPD: chronic obstructive pulmonary disease.

Table 2. Characteristics of informal caregivers, primary care physicians, and specialist palliative care team members.

Informal caregivers' characteristics			
Age groups (years)	Gender (number)	Roles	Type of data provided by participants (number)
	Male (5), female (2)	Partner	Interviews (5), unstructured follow-up interviews (4)
	Male (1), female (2)	Daughter/son	Interviews (2), unstructured follow-up interview (1)
	Male (1), female (1)	Mother/father	Interview (1)
	Female (1)	Acquaintance	Interview (1)
Primary care physicians' characteristics			
55–65	Male (3), female (2)		Interviews (6)
45–54	Male (2)		Interview (3)
35–44	Male (4), female (1)		Interviews (7)
25–34	Male (1), female (2)		Interviews (4)
Specialist palliative care team members' characteristics			
55–65	Male (4), female (1)	Palliative care physicians (4), nurse practitioner (1)	Interviews (8)
45–54	Male (2), female (1)	Palliative care physicians (2), nurse (1)	Interviews (2)
35–44	Female (3)	Palliative care physicians (2), nurse (1)	Interviews (4)
25–34	Female (1)	Nurse (1)	Interview (1)

axial coding, J.G. constructed a coherent picture of the emerged themes. Both graphic tree structures—containing four key concepts, themes, subthemes, and explanatory memos—and a written classification scheme were drafted. The members of the multidisciplinary research group extensively reviewed these tree structures and scheme, each member independently coding a cross-section of the research data after which coding was discussed until consensus was reached. Subsequently, J.G. utilized the classification scheme to selectively code the data from the remaining six cases to refine the classification scheme and test its coherence and saturation.[19] Finally, a member check was performed with SPCT members and PCPs.

The overall study on teleconsultation in palliative home care produced four key concepts. Of these four key concepts, one explained the integration of different health care disciplines (primary care and specialist palliative care) for palliative care at home and was elaborated on in this article. The other three concepts which focus more directly on the technology—transcendence, transparency, and technologized intimate relationships—are reported separately.[18]

Results

Within this teleconsultation study, two types of PCPs-specialist palliative care collaborations were found. In 17 of 18 studied cases, the introduction of teleconsultation resulted in multidisciplinary team care; an SPCT clinician and a PCP both had private conversations with the patient—the former through videoconferencing and the latter by visiting the patient at home—after which backstage consultations between the PCP and the SPCT clinician were used to attune their care actions (Figure 1).

In a deviant case, teleconsultation facilitated tripartite, real-time consultations between home-based patient/family caregiver(s), visiting PCP, and SPCT clinicians (Figure 2). The barriers lack of time and flexibility, mentioned by PCPs and SPCT clinicians in the other 17 cases, appeared irrelevant in this case: the PCP visited the patient at home to ensure that the patient, family, and professionals could enjoy interdisciplinary teleconsultations.

Two themes emerged from the empirical data: (1) professionals *defining responsibility* as a consequence of reshaping of specialist palliative care and palliative homecare collaboration and (2) *building interprofessional rapport*. These two themes were supported by seven subthemes as depicted in Table 3.

Professionals defining responsibility as a consequence of a reshape of specialist palliative care and palliative homecare collaboration

The role of PCPs in palliative home care. The participating PCPs considered palliative home care and end-of-life care essential to the primary care profession:

> PCP7: One of the things that belong to the realm of family medicine is that of accompanying persons till death.

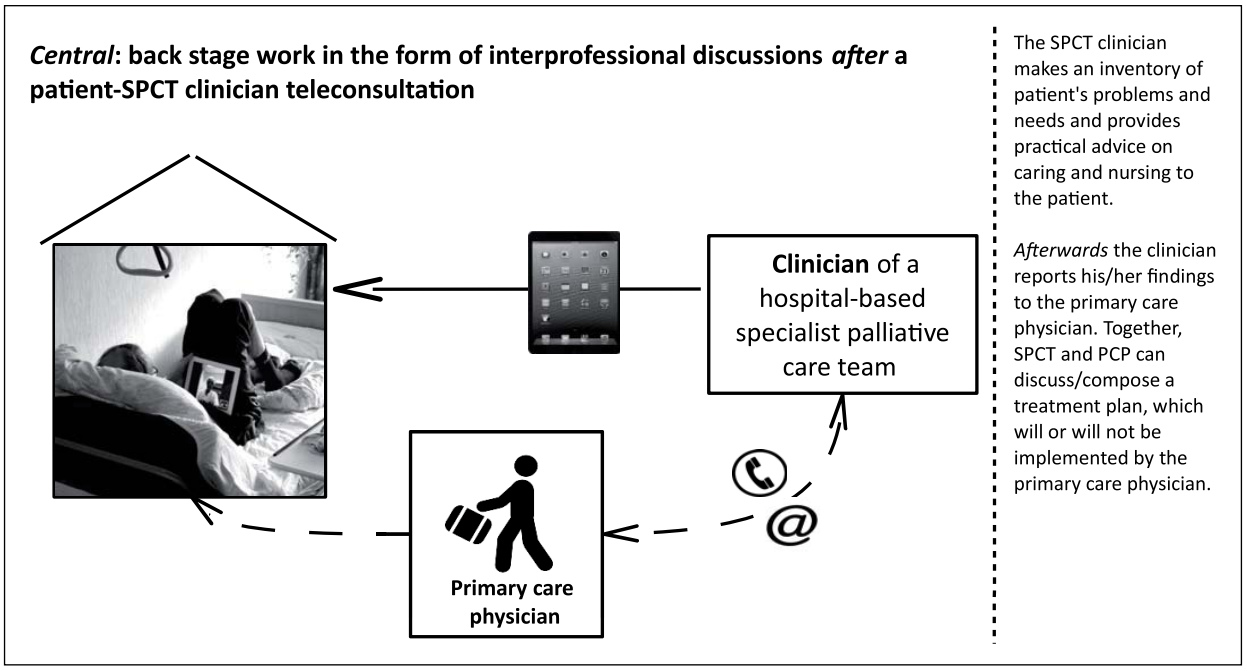

Figure 1. Primary care physician–specialist palliative care collaboration—the first model.

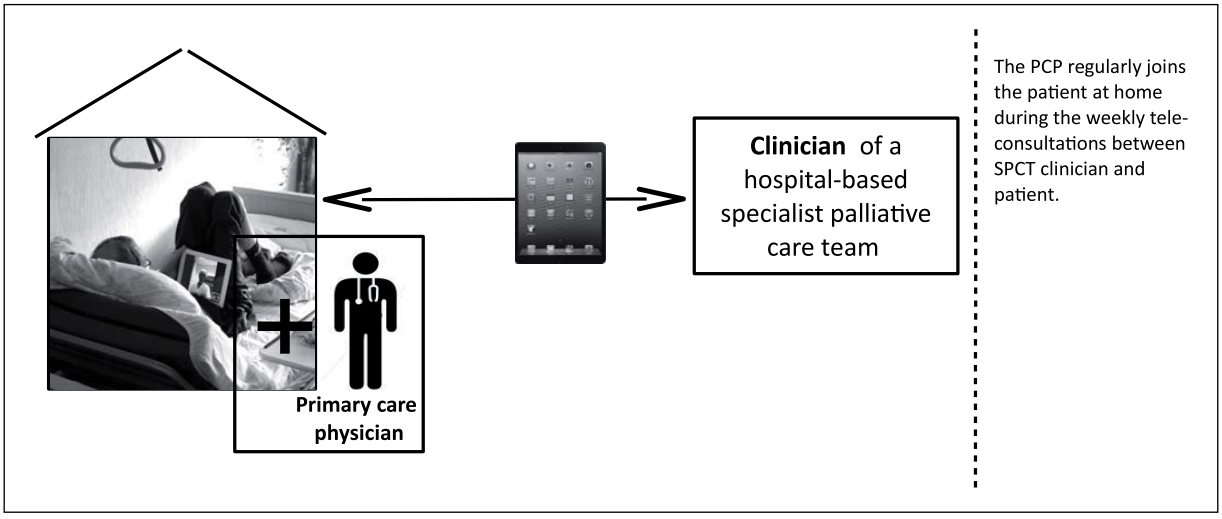

Figure 2. Primary care physician–specialist palliative care collaboration—the second model.

PCPs are primary responsible for providing continuous care at home to the patient and the family and, after a patient's death, to the bereaved. Particularly with end-of-life care, several PCPs desired to be close-by the dying patient at all times. Teleconsultation, according to these PCPs, could be a means to jointly improve the continuity of care but should not be used by PCPs to evade responsibility (e.g. during evenings/nights or at weekends). To complicate things, patients could start to favor teleconsultations with the SPCT over contacts with their PCP because of their increased connectedness with this SPCT:

> When SPCT nurse 1 designated the PCP as the main responsible caregiver at home, patient 13 responded: "Although I have the least contact with him."

PCPs acknowledged that building a personal long-term relationship with (all) patients and a profound knowledge of a patient's medical and personal history are currently less common.

Participating PCPs occasionally experienced the responsibility for palliative care patients as a burden. Some expressed the need for specialized discussion partners in

Table 3. Integration of primary care and specialist palliative care with teleconsultation—themes and subthemes.

Key component	Themes	Sub-themes
Integration of primary care and specialist palliative care with teleconsultation	1. Professionals *defining responsibility* as a consequence of a reshape of specialist palliative care and palliative homecare collaboration	Defining the role of primary care physicians in palliative home care The importance of continuous backstage information sharing for teleconsultation to be a catalyst for interprofessional collaboration Final responsibility for treatment End-of-life care
	2. *Building interprofessional rapport*	Share the pressure of providing palliative care Long-term engagement leading to mutual understanding and trust A professional attitude of mutual respect and openness

case of complex problems at home. Some PCPs considered weekly teleconsultations combined with a 24/7-available and easily approachable SPCT to fill this need. Especially, in the backstage meetings of the multidisciplinary collaboration model, the burden of providing palliative care could be shared with SPCT clinicians:

> PCP5: [*teleconsultation is*] supportive. I have the feeling of not being on my own. The feeling you sometimes have as a PCP in these final stages [*of someone's life*].

However, some of the more experienced PCPs thought that the teleconsultation services did not add value to their own practices but did benefit complex patients who liked extra time and attention to manage their care:

> PCP1: Did I gain something myself? No, I think I didn't. It was fine, but I think the patient truly gained something. […] I think she really enjoyed having an expert team as an additional back up to me, her PCP. I think that was comforting to her.

The importance of information exchange as a catalyst for interprofessional collaboration. During interviews, PCPs and SPCT clinicians who opted for private (tele)conversations with patients only emphasized that a mutual commitment to immediate and accurate backstage information sharing was essential to gain surplus value from and prevent misunderstandings due to teleconsultations. From that perspective, some PCPs criticized, for example, the absence of an initial briefing:

> PCP15: An initial consultation would have been nice. To share information. That we discussed things before [*the teleconsultation trajectory started*].

Or the importance of direct information sharing for attuned treatment decisions:

> PCP3: I easily work with the SPCT. [*The palliative care phase*] is a phase in which you do not want to mess about to hear afterwards that you could have done better … [*in this phase*] my perfectionism is a little stronger.

While multidisciplinary care by means of teleconsultation requires careful backstage communication, the tripartite teleconsultations showed the opportunities and limitations of direct, patient-inclusive interactions. In tripartite teleconsultations, professionals and patient experienced a concentrated responsiveness and opportunities for direct agreements on responsibility for (future) actions:

> SPCT nurse 1: … I am behind this little box [*teleconsultation technology*] …, the PCP is there and able to support her. She is just there, can give some tips. Can do something [constructive] during those moments.

Observations preceding and following the teleconsultations showed that this case' PCP could also prepare her patient for participation in the upcoming teleconsultations and discuss specific issues with the patient and family caregiver directly afterwards.

The professionals involved in tripartite teleconsultation, however, also experienced loss of control in conversations. To regain this control, professionals mentioned the need for short telephone conversations (backstage work) to discuss particular medical issues and treatment plans after the three-way teleconsultations:

> PCP3: Normally, consultations have a clear purpose and are focused [*on the medical technical aspects*]. [*With three-party teleconsultation*] you have to be careful it doesn't become abracadabra. You have to take it slow. Because more people [*patients, family caregivers*] are involved in the conversation. You are less in control.

In all cases, PCPs emphasized that SPCT members with long-term knowledge of the patient's status are an advantage for shared decision-making:

> PCP3: This, I think, is a very complex case. [*A SPCT member using teleconsultation*] immediately sees the complete

> situation, especially those who followed [*the patient*] through time. And I think they understand you faster.

Final responsibility for treatment. With both PCPs and SPCT clinicians involved in patient care at home through teleconsultation, questions concerning final responsibility arose: "Who should take responsibility to add specific care if needed?" and "Who should inform the patient about disease evolution, expected decline, and coordination of care?" As one SPCT nurse indicated:

> SPCT nurse 1: [the PCP] will indicate what she and the patient will and won't do. In this way, you're informed of what parts of your advice will be incorporated into the treatment plan and what parts will be discarded. […] In my opinion, it is highly valuable to a patient that you've been in contact with his/her PCP. That no two parallel care pathways exist.

Observations showed that in the multidisciplinary collaboration model, SPCT clinicians sometimes addressed their advice about specific medical treatments directly to the patients and their caregivers without conferring with the PCP. Moreover, in some cases, only indirect communication between the PCP and SPCT clinicians through patients was observed. Some patients and caregivers complained about the insecurity that resulted from witnessing professionals moving in contradictory directions, with the patient serving as a mediator between both:

> Informal carer 9 explains that health care professionals contradict each other. "Meanwhile, nothing happens." … a "status quo."

SPCT clinicians explained that teleconsultation made them more involved in patients' palliative care trajectories. This involvement usually resulted in building rapport with patients and discussing psychosocial and spiritual issues. As a consequence of this far-reaching involvement, SPCT clinicians reported that in the multidisciplinary collaboration model, patients were sometimes "saving up" problems that would really require immediate treatment by the PCP for the next teleconsultation. This "saving up" resulted in SPCT clinicians having to take treatment responsibility.

End-of-life care. Responsibilities shifted again at the start of the actual end-of-life care. SPCT clinicians, whatever their involvement and responsibility via teleconsultation in the palliative care trajectory, moved (back) into the role of being only a consultant to the PCP whereas the latter provided the hands-on end-of-life care at home:

> PCP5: "Well yes, the SPCT is less involved during the last days [*of the patient*]." I: "Why?" PCP5: "Well, most of the times the patient is comatose, sedated. Then, we mainly wait […] I reassure the family … So, these last moments, I really think I fly solo there."

Building interprofessional rapport

Participants reported an increase in mutual understanding and trust if they were long-term engaged in one another's working contexts. During the interviews, SPCT clinicians and PCPs indicated that this sense of togetherness could only occur if all were willing to collaborate and if respect, modesty, and prudence were practiced. Some lessons needed to be learnt along the way:

> PCP6: I think it is odd. Somebody [a SPCT clinician] is coming to support me, and to help in the best way possible. But that person apparently isn't interested in what I think of it.

In the single case of tripartite teleconsultations, the direct interactions indeed led to increased responsiveness and efficient responsibility sharing, but occasionally also to a decrease of mutual trust. For example, when the SPCT clinician experienced being tested by a PCP-patient "team." The SPCT clinician then responded with repelling, formal communicative behavior that strongly contrasted with the intimate, homely conversational setting. In addition, professionals reported feeling inhibited from expressing dissatisfaction or disagreement with one another's work because such expressions would erode patient trust in the overall medical support. Professionals could also lose patients' and family caregivers' trust by starting bilateral medical-technical discussions during teleconsultations that were incomprehensible to patients:

> SPCT nurse 1: … [*to PCP and patient*] what you could consider is that if … starts vomiting and it increases, up till a point she suffers from it, you perform a puncture to drain the ascites. PA10: Well, yes, but now in Dutch please!

Discussion

In this study, teleconsultation stimulated the integration of primary care and specialist palliative care. Mainly by enabling bilateral conversations between a home-based patient and a hospital-based SPCT clinician or nurse, which were followed by backstage consultations between SPCT clinician and PCP (the multidisciplinary collaboration model). In case of cautious planning and physicians committing to information sharing, this backstage work led to better interprofessional understanding of one another's working contexts, to more practical and accurate multidisciplinary discussions,[15] and to specialists being more approachable (e.g. during complex and/or end-of-life care).[7,15,16,32]

Study limitations

It appeared impracticable to thoroughly screen patient inclusion and build an overview of all patients approached as the sampling could only be realized with the unstructured help of a SPCT, PCPs, and nurses of a homecare

institution. As a consequence, a substantive non-responder analysis, although relevant for accessing the acceptability of teleconsultation-technology, could not be conducted. Our sample may have contained selection bias because both the teleconsultation technology and the research may have attracted curious patients who were already eager to control their care.[33] However, the final sample showed sufficient diversity to secure theoretical profundity.

Testing complex, technological interventions with vulnerable patients and professionals occasionally required participation by the researcher (e.g. helping to use the technology or being a connector between different services). This participant observation was recorded and reflected upon to counteract any conflicts of interest.

Implications for clinical practice

Teleconsultation creates, for professionals, a "proliferation of ways of seeing" palliative care at home.[34] However, the deviant case of tripartite teleconsultation also shows that the direct character of *synchronous* multi-perspective conversations calls for increased modesty, being vulnerable to criticism about one's own work, and a willingness to engage in less-controlled, multi-person, and patient-centered dialogues.[15,35] Teleconsultation hampers professional territorialism and solo working through the introduction of various specialist perspectives and the involvement of patient and family. Patients immediately notice professional disengagement and noticeably suffer from professionals moving in contradictory directions.[12] It is this study's conclusion that especially tripartite teleconsultation can create "high-pressure" collaborations, which, when modesty prevails, might lead to efficient attunement. However, the experiences of loss of control and constantly being judged make an interdisciplinary care approach with teleconsultation perhaps less attractive for caregivers than a multidisciplinary model. The latter may give a sense of autonomy in engaging with patients and more opportunities to avoid intense interprofessional discussions.

Both the multidisciplinary and the interdisciplinary team care approach required well-orchestrated backstage work to translate complex hospital treatment and care to a home context and vice versa.[4,5,32] The multidisciplinary team care approach leans heavily on backstage work for planning shared courses of action. In the interdisciplinary team care approach, backstage work is mainly used to prepare for conversations and/or explain what was said (PCP-patient), to discuss the medical-technical without the patient (e.g. volumes of medication), and to talk about those issues that could not be discussed directly with the patient (e.g. prognosis, scenarios). Backstage work appears especially important when patients and family caregivers have an opportunity to distribute their problems among PCPs and SPCT clinicians as they see fit and medical responsibilities blur. And, as PCPs recognized, most of this study's patients valued these opportunities of extra information and direct influence on their care.[15]

Table 4 gives a schematic overview of the opportunities and barriers of applying teleconsultation for multidisciplinary and interdisciplinary collaboration in the clinical

Table 4. Identification of opportunities and barriers for multidisciplinary collaboration in palliative care by means of teleconsultation.

General opportunities of teleconsultation in palliative care
• Teleconsultation is consistent with a willingness to be complementary to co-caregivers in striving for the best care for each patient. • A teleconsultation service can bring about an experience of togetherness among professional caregivers. • Teleconsultation contributes to a deeper understanding of one another's work and lets PCPs experience sharing of responsibilities in various care phases instead of bearing the pressure of caring alone. • A SPCT becomes more knowledgeable about patients. This leads to more information-rich interprofessional dialogues between SPCTs and PCPs, focusing on actual patient situations. • Teleconsultation could support PCPs who have less experience in palliative care through proactive palliative care education with a particular case. This method has the possibility of overcoming instances of reactive care provision. • A digital presence of intramural specialists brings about an increased medical–technical knowledge level. • Patients who (1) prefer to stay in control and seek additional expertise and (2) would prosper from receiving time and attention are well served. • Teleconsultation offers patients a chance to experience and participate in team care.
Particular opportunities
SPCT members conducting digital bedside visits followed by interdisciplinary discussions *A primary care physician is physically present to partake in teleconsultations in the patient's home* • Medical–technical discussions in three-party teleconsultations contribute to interprofessional and patient–professional reciprocity, discussions, and direct agreements on (future) medical treatment.

(Continued)

Table 4. (Continued)

Particular opportunities	
	• The presence of a PCP during three-party consultations reassures SPCT members that the follow-up is in good hands with the PCP. • Three-party teleconsultations likely lead to the patient and the PCP having preparatory talks preceding and discussions following these teleconsultations.
General barriers to teleconsultation in palliative care	
• A rigid teleconsultation service complicates fitting teleconsultations into a PCP's daily working routine. • A rigid teleconsultation service does not fit the unpredictable character of palliative home care very well. • Teleconsultation leads to irritation if it is not accompanied by a professional attitude characterized by openness to discussion, mutual respect, modesty, and prudence. • Unprepared or unauthorized SPCT members slow down rather than contribute to decisions regarding complex treatment policy.	
Particular barriers	
• *SPCT members conducting digital bedside visits followed by interdisciplinary discussions* • A SPCT proceeding directly to work with a patient without first consulting a knowledgeable PCP will hinder the SPCT's efficiency and compromise the personal relationship with the patient. • Teleconsultations followed by interdisciplinary discussions easily cause confusion for professionals regarding coordinating care and treatment decisions, taking responsibility for insufficient care, and informing the patient about further decline. • SPCT members see patients more often via teleconsultation during pre-terminal phases than PCPs. SPCT members who are confronted with patients "saving up" their problems for the teleconsultation instead of going to the PCP and/or who are confronted with severe problems experience a need to establish treatment plans. • A frequent and convenient choice for after-teleconsultation feedback, either through an assistant, fax, e-mail, or even the patient, hampers information sharing through dialogue. • Teleconsultations followed by interdisciplinary discussions might cause patients and informal caregivers to feel as if they are caught between conflicting professional opinions and therefore to suffer from insecurity and feel inclined to mediate between professional caregivers.	• *A primary care physician is physically present to partake in teleconsultations in the patient's home* • Professionals using medical–technical discourse during three-party consultations, thereby excluding patients from participation. • Professionals feeling inhibited from expressing dissatisfaction or disagreement with one another's work, which directly erodes a patient's trust in medical support.

practice of palliative home care. In an international context, the availability of broadband Internet is pivotal to ensure that connection between caregivers and patients at different locations can be established.[36] Differences in the organization of palliative care in Europe (e.g. the role of primary care) may determine the local infrastructure that is needed for teleconsultation.[37]

Conclusion

The introduction of specialist teleconsultation in palliative home care supported *multidisciplinary* care. Teleconsultation also has the potential to facilitate *interdisciplinary* care, especially if the technology develops and allows for safe, high-quality three-way online communication in the near future and palliative caregivers get more familiar with such a form of tripartite consultation.

Acknowledgements

The authors would like to thank all study participants for their contributions to this intensive research project. Additionally, we would like to thank P. Hoek for the fruitful discussions about teleconsultation, primary care, and palliative care.

Declaration of conflicting interests

The authors declare that there is no conflict of interest.

Funding

This work was supported by the Netherlands Organisation for Scientific Research (NWO). File number 313-99-120. This organization had no interests in the study, its design, or its elaboration.

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Appendix 1

Direct observations

1. Technology	1. Specific technical constraints
	2. Their functions within modes of production
	3. Their signification as material objects
	4. Their signification as communication modalities
2. Physical setting	1. Integration of media technologies into social space (i.e. living room? and hospital?)
3. Kinds of people	1. How are those involved organized?
	2. How are those involved stratified?
4. Acts	1. Behaviors before/during/after teleconsultation
	2. Transitions from one activity to another (before/after teleconsultations)
5. Patterns of interaction	1. Within a social setting but also through a medium
	2. (Un)acceptable behavior
6. Patterns of interpretation	1. Articulation of teleconsultation technology assessments
7. Vocabulary	1. The use of (verbal) symbols

Based on Peterson.[25]

Appendix 2

Interviews with patients and SPCT members

The following guideline is used to initiate a first interview with all participants. As the research process and dying process continued, the interviewer chose specific topics from the initial interview/observations for further exploration. Respondents are invited to use everyday language and introduce topics which are important to them. In case of indistinctness, the interviewer uses probing questions, contrast questions, and precise recapitulations to gain a deeper insight.

Open questions	Issues that may be explored
Can you please tell me how the latest teleconsultation/video conversation went?	Discuss place and time (as a commodity), preparation for the conversation, what happened after the conversation, and the value of a technical object in the room
Which persons were involved in the video conversation?	Taking initiative (dialogue) and making health care choices
How do you relate to these people?	Recognition, commitment, engagement, professional attitude (empathy, etc.), and definition of good palliative care
Which topics did you discuss with each other?	Transparency about death and dying, establishing hope, making health care choices, ascertain awareness and understanding, and transporting cultures
What did you see during the conversation?	People/places; hermeneutics (truthfulness of images); reducing parts of the world (what did you miss during the conversation?); transporting cultures
In what ways does a teleconsultation differ from a face-to-face encounter with a physician (at home or at the hospital)?	
Which people kept you company during the conversation?	Relationship between patient and proxy and context of care
Which role did they play in the conversation?	
Additional questions for members of the palliative care team	
Could you describe the effect that you think teleconsultations have on your patients and/or their informal carers?	Transforming transmural care
How do teleconsultations influence your relationship with your patients and/or their informal carers?	Transforming transmural care
How would you define contact/relationship with the primary care physicians during and beyond teleconsultations?	Transforming transmural care
In what ways does teleconsultation contribute or hinder your daily care for your patients?	Transforming transmural care and could you please respond to the following proposition > teleconsultation contributes to further technologizing of palliative care

Interviews with primary care physicians and informal caregivers

Additional questions for primary care physicians	
Could you describe the effect that you think teleconsultations have on your patients and/or their informal carers?	Transforming transmural care
How do teleconsultations influence your relationship with your patients and/or their informal carers?	Transforming transmural care
How would you define contact/relationship with the members of the specialist palliative care team during and beyond teleconsultations?	Transforming transmural care
In what ways does teleconsultation contribute or hinder your daily care for your patients?	Transforming transmural care and could you please respond to the following proposition > teleconsultation contributes to further technologizing of palliative care
For informal carers: what roles did you play in the conversation?	
Could you please show me "live" what you do when preparing/using the teleconsultation technology?	A teleconsultation technology's scripts
What possibilities/problems do you encounter while using the teleconsultation technology?	A teleconsultation technology's scripts
What other communication technologies do you have at your disposal? Could you compare these to using the teleconsultation technology?	Contrast question
When there's room for retrospective questions	
Till now, have you done anything you wanted to do with the teleconsultation technology?	
Till now, were there any moments when you would rather be rid of the teleconsultation technology?	
Till now, would you say the teleconsultations have been of value to you (or others around you)?	Relationship between teleconsultation and good palliative care