




ORIGINAL ARTICLE

Telehealth in outpatient delivery of palliative care: a prospective survey evaluation by patients and clinicians

Jennifer Philip ,^{1,2,3} Olivia Wawryk,¹ Leeanne Pasanen,² Aaron Wong ,^{2,3} Stephanie Schwetlik⁴ and Anna Collins ¹

¹Department of Medicine, St Vincent's Hospital Melbourne, University of Melbourne, ²Parkville Integrated Palliative Care Service, Peter MacCallum Cancer Centre, and ³Palliative Care Service, Royal Melbourne Hospital, Melbourne, Victoria, and ⁴North Adelaide Palliative Service, Modbury Hospital, Adelaide, South Australia, Australia

Key words

telemedicine, palliative care, outpatient, COVID-19, survey and questionnaire.

Jennifer Philip, Department of Medicine, St Vincent's Hospital, University of Melbourne, PO Box 2900, Fitzroy, Vic. 3065, Australia.
Email: jennifer.philip@svha.org.au

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Abstract

Background: In Australia during the COVID-19 pandemic new funding models were introduced to support telehealth consultations, resulting in their widescale adoption in palliative care service delivery. Clarity around the clinical circumstances and patient populations that might be most appropriate for telehealth models was required.

Aims: To evaluate patient and physician satisfaction, acceptability and utility of outpatient palliative care provision through telehealth.

Methods: This is a multi-site prospective, cross-sectional, observational study conducted during a time of significant public health restrictions. A survey was used to collect matched patient- and physician-reported perceptions of palliative care telehealth consultations across three metropolitan hospitals in Victoria, Australia.

Results: There were 127 matched patient–physician data of telehealth consultations and a further 812 physician-only assessments. Telehealth was generally acceptable and satisfactory, with patients providing greater positive scores than clinicians. Telehealth incorporating both audio and video were more acceptable and satisfactory, particularly with the presence of a carer, and during routine reviews. Physicians were less satisfied using telehealth when there was increasing symptom complexity across all domains (pain, psychological, and other symptoms).

Conclusions: Telehealth has high utility in palliative care practice. A future hybrid model of care comprising both face-to-face and telehealth consultations seems favoured by patients and physicians but must be accompanied by targeted support for specific patient groups to ensure equitable healthcare access. Further evaluation of telehealth during a time of fewer public health emergency measures and lower community anxiety is required to fully understand its ongoing role.

Introduction

The COVID-19 global pandemic has necessitated an urgent move to using telehealth modalities as a means of reducing infection risk when providing medical care, by limiting hospital attendances or in person home visits. The widescale adoption of this approach in palliative care provision is relatively new. The World Health Organization defines telehealth as ‘the use of telecommunications and virtual technology to deliver healthcare outside of

traditional health-care facilities’.¹ A recent scoping review examining the role of telehealth when caring for palliative care patients at home found that telehealth gave an increased sense of safety for patients through providing greater and easier access to healthcare professionals while remaining at home. Most did not find it burdensome, and most felt it was a useful addition to facilitating care at home.² Other authors have highlighted the reduced waiting times, fewer clinic cancellations, environmental advantages associated with less travel and access to additional information that was previously unavailable, such as viewing the home.^{3,4}

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Meanwhile disadvantages include connectivity and technical issues, privacy concerns for patients in shared housing, difficulty gathering information without visual clues and clinician distress associated with the delivery mode.^{3,4} Hancock *et al.* have noted that despite the increase in interest in the area there is a lack of high-quality studies evaluating the impact of telehealth on palliative care outcomes.⁴

In Australia, as part of the response to the COVID-19 pandemic, new funding models were introduced to support telehealth consultations with expanded indications.^{5,6} This has been accompanied by commentary suggesting opportunities to integrate telehealth into routine practice including into the future.⁷ However, an empirical understanding of the clinical circumstances and patient populations that may be most appropriate for telehealth models remains scant.^{8–10} The Australian context afforded a rare opportunity to examine the implementation of and responses to telehealth in palliative care services on a large scale.¹¹

As such, the present study aimed to prospectively evaluate telehealth consultations in outpatient palliative care settings according to patients and clinicians. The findings of this study would contribute to the development of evidence-based, patient-centred telehealth-enabled outpatient palliative care services,¹² and underpin future models of tele-palliative care.

Methods

Study design and setting

This multi-site study utilised a prospective, cross-sectional, exploratory survey design to collect linked patient- and clinician-reported perceptions of palliative care telehealth consultations across three metropolitan hospitals in Victoria, Australia. Conducted as part of a broader mixed method project including a similar survey of oncologists and qualitative interviews with patients and clinicians, in this quantitative study, the guidelines set out by Kelley *et al.*¹³ for survey research were followed. The study received ethical approval from the St Vincent's Hospital Human Research Ethics Committee (LRR 096/20, 05/06/2020).

Data collection

Data were collected during strict COVID-19 public health directives in Victoria, Australia. This included a period of 15 weeks of an enforced lockdown during which there were severe limitations on leaving the house. Attendance at medical appointments was permitted with certain restrictions including an inability to be accompanied by carers, and limits on waiting room occupancy and

Table 1 Covariates of interest

Patient-reported demographics	
Age, gender, country of birth, language spoken at home	
Postcode was used to determine relative socioeconomic disadvantage	Reported in quintiles, higher scores representing lowest disadvantage
Clinician-reported clinical characteristics	
Primary diagnosis	
Performance status	Australian-modified Karnofsky Performance Status (AKPS) ¹⁹
Palliative care outcome collaborative (PCOC) phase of care	Stable, unstable, deteriorating, terminal
Palliative Care Problem Severity Scores (PSS)	Pain, other symptoms, psychological/spiritual distress, family/carer distress ²⁰
Consultation characteristics (completed by patients and clinicians)	
Mode of delivery	Audio only versus audio and visual
Reason for appointment	
Action instituted in response to each of the problems as listed in PSS (pain, other symptoms, psychological/spiritual distress and family/carer distress)	Continue care (with no/minimal changes to management); monitor and record (limited changes made to management but requiring close surveillance); review/change plan of care, referral, intervention (significant change in management required with monitoring); or urgent action required (immediate and significant change in management required)
Time spent	During consultation Follow-up care
Outcome measures	
Patient-reported telehealth usability/utility	Telehealth Usability Questionnaire (TUQ), a 21-item patient-reported measure capturing five domains of the usability on a 7-point Likert scale: usefulness, ease of use, effectiveness, reliability and satisfaction ¹⁶
Patient- and clinician-reported acceptability	A 5-point Likert scale, from 1 (very unacceptable) to 5 (very acceptable)
Patient- and clinician-reported satisfaction	A 5-point Likert scale, from 1 (very unacceptable) to 5 (very acceptable)

Table 2 Cohort demographics

Characteristic	Matched clinician–patient cohort, <i>n</i> = 127 (%)	Clinician-only cohort, <i>n</i> = 812 (%)
Demographic		
Age (years)	63.50 (52–70)	NR
Female	77 (61)	
Born in Australia	86 (68)	
Regionality		
Major cities	105 (84)	
Inner regional	17 (14)	
Outer regional	3 (2)	
IRSD quintile (higher represents lowest disadvantage)		
1	13 (10)	
2	13 (10)	
3	21 (17)	
4	33 (26)	
5	45 (36)	
Speak a language other than English at home	26 (21)	
Interpreter present	2 (2)	
First palliative care consultation through telehealth	53 (42)	
Clinical		
Primary life-limiting illness		
Advanced cancer	118 (93)	766 (95)
Neurodegenerative disease	1 (0.8)	6 (0.7)
Renal failure	6 (4.7)	16 (2.0)
Respiratory failure	1 (0.8)	7 (0.9)
Hepatic failure	0	1 (0.1)
Cardiac failure	0	4 (0.5)
Other	1 (0.8)	8 (1.0)
PCOC phase		
Stable	79 (62)	436 (54)
Unstable	27 (21)	186 (23)
Deteriorating	20 (16)	171 (21)
Terminal	1 (1)	18 (2)
Pain: PSS		
Continue care	54 (43)	306 (38)
Monitor and record	25 (20)	163 (20)
Review/change plan of care; referral, intervention	46 (37)	327 (41)
Urgent action	1 (1)	11 (1)
Other symptoms: PSS		
Continue care	55 (43)	343 (43)
Monitor and record	37 (29)	223 (28)
Review/change plan of care; referral, intervention	35 (28)	231 (29)
Urgent action	0	11 (1)
Psychological/spiritual: PSS		
Continue care	80 (63)	462 (57)
Monitor and record	32 (25)	258 (32)
Review/change plan of care; referral, intervention	14 (11)	87 (11)
Urgent action	1 (1)	0
Family/carer: PSS		
Continue care	89 (71)	509 (64)
Monitor and record	32 (26)	221 (28)
Review/change plan of care; referral, intervention	4 (3)	72 (9)
Urgent action	0	0

Table 2 Continued

Characteristic	Matched clinician–patient cohort, <i>n</i> = 127 (%)	Clinician-only cohort, <i>n</i> = 812 (%)
AKPS		
≤50	21 (17)	198 (25)
50–70	44 (36)	355 (45)
70–100	57 (47)	238 (30)
Consultation characteristics		
Mode of telehealth		
Audio and visual	49 (31)	206 (27)
Audio only	88 (69)	567 (73)
Family member/carer present	58 (46)	NR
Time spent during consultation, median (IQR) (min)	30 (11.7)	20 (15, 30)
Time spent coordinating follow-up care, median (IQR) (min)	12.2 (10.1)	10 (5, 15)
Reason for appointment		
Introduction to palliative care	7 (6)	19 (2)
Provision of pain and symptom management	73 (58)	508 (63)
Goals of care discussion	6 (5)	14 (2)
Advance care planning	2 (2)	7 (1)
Routine review/follow up	38 (30)	244 (30)
Community PC referral	0	5 (1)
Other	0	12 (2)

AKPS, Australia-modified Karnofsky Performance Status; IQR, interquartile range; IRSD, Index of Relative Socio-economic Disadvantage; NR, not reported by clinicians; PC, palliative care; PCOC, palliative care outcome collaborative; PSS, Palliative Care Problem Severity Score.

Table 3 Acceptability and satisfaction reported by patients and clinicians in the matched cohort

	Acceptability of the telehealth consultation today (<i>n</i> = 127), <i>n</i> (%)						Overall Acceptable	Discordant views†
	Very unacceptable	Somewhat unacceptable	Undecided	Somewhat acceptable	Very acceptable			
Patient reported	0	6 (4.7)	5 (3.9)	31 (24.4)	85 (66.9)	116 (91.3)	23 (18.1)	
Clinician reported	2 (1.6)	12 (9.5)	4 (3.1)	50 (39.4)	59 (46.5)	109 (85.8)		
	Satisfaction with the telehealth consultation compared with in-person (<i>n</i> = 127), <i>n</i> (%)						Overall Satisfactory	Discordant views†
	Very dissatisfied	Dissatisfied	About the same	Satisfied	Very satisfied			
Patient reported	4 (3.1)	7 (5.5)	25 (19.7)	52 (40.9)	39 (30.7)	91 (71.7)	49 (38.6)	
Clinician reported	2 (1.6)	19 (14.9)	24 (18.9)	46 (36.2)	36 (28.4)	82 (64.6)		

†Discordance is based on binary yes/no.

other forms of consultation such as telehealth were encouraged.

Procedures

All palliative care consultations conducted by telehealth and occurring between July 2020 and February 2021 were identified from hospital clinic lists, and eligible patients were flagged to the treating physician. All participants – patients and clinicians – completed written consent forms. Palliative care physicians completed a survey at the time of the telehealth consultation, after which patients were

invited to participate through telephone or email by an independent member of the research team. Patients were eligible if they were: (i) receiving palliative care at the hospital; (ii) participated in a telehealth consultation; and (iii) able themselves or a family member on their behalf to complete a survey written in English. Those who consented completed the survey online or through the post as required. Patients who had completed a survey within the previous 3 months were not re-invited to participate. Telehealth was defined as all healthcare delivered through video and/or through phone.¹⁴ All the clinical sites utilised the same telehealth platform, HealthDirect. Palliative care

Table 4 Patient perceptions of utility of telehealth (Telehealth Usability Questionnaire (TUQ))

Perceptions of utility of telehealth (TUQ) [†]	All participants (n = 127), mean (SD)	Audio only (n = 88), mean (SD)	Audio and visual (n = 39), mean (SD)	P-value [‡]
Usefulness	5.96 (1.08)	5.84 (1.08)	6.22 (1.06)	0.07
Telehealth improves my access to healthcare services	5.91 (1.36)	5.76 (1.36)	6.26 (1.31)	0.06
Telehealth saves me time travelling to a hospital or specialist clinic	6.48 (0.98)	6.36 (1.02)	6.73 (0.84)	0.06
Telehealth provides for my healthcare need	5.52 (1.48)	5.43 (1.43)	5.74 (1.61)	0.28
Ease of use and learnability	5.70 (1.50)	5.52 (1.46)	6.13 (1.53)	0.03 [‡]
It was simple to use this system	6.10 (1.44)	6.07 (1.35)	6.16 (1.68)	0.74
It was easy to learn to use the system	6.00 (1.52)	5.90 (1.52)	6.24 (1.52)	0.25
I believe I could become productive quickly using this system	5.38 (1.86)	5.13 (1.87)	6.00 (1.70)	0.02 [‡]
The way I interact with this system is pleasant	5.69 (1.67)	5.49 (1.65)	6.14 (1.67)	0.05 [‡]
I like using the system	5.30 (1.93)	4.97 (1.96)	6.08 (1.63)	<0.01 [‡]
The system is simple and easy to understand	5.72 (1.79)	5.58 (1.78)	6.03 (1.79)	0.21
This system is able to do everything I would want it to be able to do	5.08 (1.90)	4.84 (1.87)	5.65 (1.86)	0.03 [‡]
Effectiveness	5.59 (1.45)	5.51 (1.43)	5.77 (1.48)	0.36
I can easily talk to the clinician using the telehealth system	5.76 (1.51)	5.57 (1.56)	6.22 (1.29)	0.03 [‡]
I can hear the clinician clearly using the telehealth system	5.94 (1.45)	5.90 (1.43)	6.03 (1.52)	0.65
I felt I was able to express myself effectively	5.81 (1.46)	5.65 (1.50)	6.19 (1.31)	0.06
I can see the clinician as well as in person	—	5.16 (1.65)	—	—
Reliability	4.26 (1.87)	4.05 (1.97)	4.74 (1.52)	0.06
I think the visits provided over the telehealth system are the same as in-person	4.00 (2.02)	3.88 (2.09)	4.29 (1.83)	0.29
Whenever I made a mistake using the system, I could recover easily and quickly	4.63 (2.22)	4.28 (2.29)	5.50 (1.76)	<0.01 [‡]
The system gave error messages that clearly told me how to fix problems	—	—	4.59 (2.34)	—
Satisfaction and future use	5.51 (1.70)	5.25 (1.70)	6.10 (1.58)	<0.01 [‡]
I feel comfortable communicating with the clinician using the telehealth system	5.60 (1.73)	5.40 (1.69)	6.08 (1.75)	0.04 [‡]
Telehealth is an acceptable way to receive healthcare services	5.19 (1.95)	4.94 (1.96)	5.76 (1.82)	0.03 [‡]
I would use telehealth services again	5.72 (1.68)	5.44 (1.72)	6.34 (1.44)	<0.01 [‡]
Overall, I am satisfied with this telehealth system	5.54 (1.82)	5.25 (1.87)	6.18 (1.54)	<0.01 [‡]

[†]Scores range from 1 to 7 for each question and subscale on the TUQ.

[‡]Two-sided *t*-test was used to compare mean scores between groups and test for significance.

physicians and patients each separately completed the outcome measures, providing matched dyadic data.

Clinician data that did not result in a matched-patient survey was retained to form a cohort of clinician-only data.

All data were de-identified. All study data were collected and managed using REDCap (Research Electronic Data Capture), a secure, online software platform hosted at the University of Melbourne.¹⁵

Covariates

Patient- and clinician-reported data and measures were collected as detailed in Table 1. The Telehealth Usability Questionnaire (TUQ) has been demonstrated to have strong content validity and internal consistency.^{16,17} The responses of 4 or 5 arising from the Likert scales assessing

acceptability and satisfaction were collapsed to generate a binary score indicating a positive rating of 'acceptability' and 'satisfaction' respectively.

Data analyses

The demographic, clinical and outcome variables of interest were summarised using descriptive statistics. Continuous variables were expressed as median with interquartile range (IQR) and categorical variables as number (percentage) as appropriate. Concordance between the patient and clinician for acceptability and satisfaction were assessed.

The relationships between a series of individual patient demographic, clinical, consultation and clinician characteristics with telehealth acceptability were assessed using univariate logistic regression, reporting odds ratios, 95% confidence intervals and *P*-values. Separate models

Table 5 Univariate factors associated with patient- and clinician-reported acceptability of telehealth in the matched cohort ($n = 127$)

Predictor	Patient-reported acceptability				Clinician-reported acceptability			
	OR	<i>P</i> -value	95% CI		OR	<i>P</i> -value	95% CI	
Patient aged over 80 years	0.49	0.53	0.05	4.54	0.178	0.03	0.36	0.88
Female	2	0.27	0.58	6.98	0.62	0.39	0.2	1.87
Born in Australia	0.44	0.31	0.09	2.13	1.4	0.52	0.5	2.93
Language other than English	1.17	0.84	0.24	5.79	0.25	0.01	0.86	0.71
Regional home residence	2	0.52	0.24	16.56	3.45	0.25	0.23	27.34
First telehealth appointment	0.86	0.81	0.25	2.98	0.31	0.28	0.11	0.88
Family member present	3.41	0.08	0.86	13.53	3.58	0.02	1.19	10.77
Audio and visual telehealth link	1.16	0.83	0.29	4.66	2.4	0.19	0.65	8.82
AKPS > 40	1.13	0.91	0.13	9.88	2.77	0.17	0.65	11.91
PCOC phase								
Stable	1	–	ref		1	–	ref	
Unstable	1.03	0.98	0.19	5.42	0.29	0.05	0.084	0.99
Deteriorating	0.47	0.31	0.11	2.05	0.19	0.01	0.05	0.68
Terminal	1	–	(omitted)		1	–	(omitted)	
Pain PSS								
Continue care	1	–	ref		1	–	ref	
Monitor and record	0.19	0.03	0.42	0.82	0.43	0.33	0.08	2.31
Review/change plan of care	1.29	0.78	0.21	8.1	0.17	<0.01	0.04	0.63
Urgent action	1	–	(omitted)		1	–	(omitted)	
Other PSS								
Continue care	1	–	ref		1	–	ref	
Monitor and record	0.19	0.05	0.037	1	1.65	0.49	0.39	6.85
Review/change plan of care	0.4	0.33	0.06	2.54	0.49	0.21	0.16	1.51
Psychological PSS								
Continue care	1	–	ref		1	–	ref	
Monitor and record	0.67	0.55	0.18	2.47	0.38	0.074	0.13	1.09
Review/change plan of care	1	–	(omitted)		1.64	0.65	0.19	14.13
Urgent action	1	–	(omitted)		1	–	(omitted)	
Family PSS								
Continue care	1	–	ref		1	–	ref	
Monitor and record	0.26	0.04	0.07	0.91	0.34	0.04	0.12	0.97
Review/change plan of care	1	–	(omitted)		0.34	0.37	0.03	3.59
Reason for review								
Introduction to palliative care	0.15	0.02	0.03	0.69	0.29	0.1	0.07	1.29
Routine review	2.02	0.38	0.42	9.85	8.74	0.04	1.12	68.23
Goals of care discussion	0.12	<0.01	0.02	0.59	0.47	0.37	0.09	2.51

Bold values are statistically significant. AKPS, Australia-modified Karnofsky Performance Status; CI, confidence interval; OR, odds ratio; PCOC, Palliative care outcome collaborative; PSS, Palliative Care Problem Severity Score.

were run for patient- and clinician-reported outcomes in each cohort. Consistent with the exploratory aims of this study an alpha of <0.05 was considered to be statistically significant and no missing data was imputed. All analyses were performed using Stata version 15.1 (StataCorp., College Station, TX, USA).

Results

Description of study population

In the study period there were 939 consultations undertaken where the clinician completed data assessments

regarding their perception of the consultation. In addition, for 127 of these consultations the patient also completed data assessments. Therefore, there were in total 127 matched patient–clinician views of the particular telehealth consultation, and a further 812 clinician-only assessments.

There were mostly minor differences only between the consultation cohorts (clinician–patient matched and clinician only), with most consultations held with people who had cancer (93% and 95%), English speakers (79%), who were in the stable phase (62% and 54%) and were conducted with access to audio only (69% and 73%; Table 2). Some differences were evident; however, in patient performance status and time spent in the

Table 6 Univariate factors associated with patient- and clinician-reported satisfaction of telehealth in the matched cohort (n = 127)

Predictor	Patient-reported satisfaction				Clinician-reported satisfaction			
	OR	P-value	95% CI		OR	P-value	95% CI	
Patient aged over 80 years	0.96	0.96	0.18	5.19	0.7	0.65	0.15	3.28
Female	1.62	0.23	0.74	3.55	0.54	0.12	0.25	1.17
Born in Australia	1.07	0.87	0.47	2.43	1.47	0.33	0.68	3.16
Language other than English	0.69	0.43	0.28	1.73	0.38	0.03	0.16	0.92
Regional home residence	9.5	0.03	1.22	73.9	2.36	0.15	0.74	7.58
First telehealth appointment	0.75	0.46	0.34	1.62	0.49	0.06	0.23	1.02
Family member present	1.97	0.09	0.89	4.32	1.55	0.25	0.74	3.2
Audio and visual telehealth link	1.5	0.38	0.62	3.53	2.8	0.02	1.16	6.81
AKPS > 40	0.6	0.53	0.12	2.97	1.2	0.79	0.32	4.51
PCOC phase								
Stable	1	–	ref		1	–	ref	
Unstable	1.44	0.49	0.51	4.02	0.39	0.04	0.16	0.96
Deteriorating	0.76	0.61	0.27	2.16	0.29	0.02	0.11	0.82
Terminal	1	–	(omitted)		1	–	(omitted)	
Pain PSS								
Continue care	1	–	ref		1	–	ref	
Monitor and record	0.46	0.12	0.17	1.21	0.22	<0.01	0.07	0.63
Review/change plan of care	2.35	0.09	0.87	6.34	0.2	<0.01	0.08	0.5
Urgent action	1	–	(omitted)		1	–	(omitted)	
Other PSS								
Continue care	1	–	ref		1	–	ref	
Monitor and record	0.33	0.02	0.13	0.84	0.5	0.13	0.2	1.22
Review/change plan of care	0.48	0.15	0.18	1.3	0.41	0.05	0.16	0.99
Psychological PSS								
Continue care	1	–	ref		1	–	ref	
Monitor and record	1.03	0.95	0.42	2.56	0.24	<0.01	0.1	0.58
Review/change plan of care	1	0.99	0.29	3.54	0.64	0.47	0.19	2.13
Urgent action	1	–	(omitted)		1	–	(omitted)	
Family PSS								
Continue care	1	–	ref		1	–	ref	
Monitor and record	1.56	0.36	0.6	4.03	0.46	0.06	0.2	1.05
Review/change plan of care	0.44	0.42	0.06	3.25	1.38	0.79	0.14	13.83
Reason for review								
Introduction to palliative care	0.29	0.07	0.07	1.13	0.25	0.6	0.06	1.04
Routine review	0.96	0.92	0.41	2.22	3.3	0.01	1.13	8.23
Goals of care discussion	0.21	0.04	0.05	0.94	0.91	0.9	0.21	3.99

Bold values are statistically significant. AKPS, Australia-modified Karnofsky Performance Status; CI, confidence interval; OR, odds ratio; PCOC, Palliative care outcome collaborative; PSS, Palliative Care Problem Severity Score.

consultation with those patient–clinician matched consultations having greater numbers in 70–100 Australia-modified Karnofsky Performance Status range (47% vs 30%) and spending more time in the consultation (30 min vs 20 min) than clinician only cohort.

Clinician–patient matched responses only

Compared with their treating clinicians, patients were more likely to assess the telehealth appointment as acceptable (91% vs 86%) and satisfactory (72% vs 65%; Table 3).

Compared with using audio alone, the use of both audio and visual media was associated with higher scores

for all domains of the TUQ including greater usefulness, ease of use and learnability, satisfaction and likelihood of future telehealth use (Table 4).

Clinicians' acceptability was associated with having family present for the consultation and when the reason for the consultation was a routine review (Table 5). Lower acceptability for clinicians was associated with patients who were of older age, unstable or deteriorating phase and when problems required a review or change in management approach, while for patients those consultations focussed on goals of care discussions or introduction to palliative care were considered less acceptable.

Meanwhile, increased satisfaction for patients was associated with being regionally based, while for

clinicians if audio and visual media were available and if the purpose of the appointment was for routine review. Lower satisfaction for patients was associated with goals of care consultations, while for clinicians was associated with care of patients where English was not their preferred language, if they were in unstable or deteriorating phase of care, if pain required a change of plan or if psychological symptoms required monitoring and recording (Table 6).

Clinician only cohort

In the clinician only cohort, ratings of acceptability and satisfaction as well as their associations mirrored those of the clinician responses in the matched cohort (Supporting Information Tables S1–S3).

Discussion

Main findings

The present study is among the first internationally to report matched patient- and clinician-reported data on the acceptability of telehealth consultations occurring in real-world palliative care delivery, providing novel data that bring together perspectives on telehealth from both those giving and those receiving care. Our results confirm those of other authors,¹⁸ that telehealth is overall considered both acceptable and satisfactory as a means of delivering palliative care, by both patients and their clinicians.

What this study adds

Although it appears telehealth has been embraced in the setting of the COVID-19 pandemic, the present study has highlighted a series of factors important to consider as part of future approaches to palliative care delivery using telehealth models. First, there was a differential between patient and clinician perspectives on acceptability and satisfaction. Patients were more likely to consider the approach more acceptable than clinicians suggesting that factors were considered differently by each group. For patients, the convenience of telehealth that negated the need to travel, find car parking, waiting and spending time in waiting rooms where there is heightened risk of infection at a time of significant community concern around COVID-19 transmission might be very appealing.² Meanwhile, clinicians were challenged with a new way of providing care that, in most instances in this study, did not involve visual cues, with approximately two-thirds of consultations on the telephone only, which may have been unsettling. Clinicians noted significant

time spent in administrative tasks associated with, but not part of, the consultation, adding an extra 30–50% of time to the clinical encounter. Nevertheless, clinicians did support this approach as acceptable.

However, both groups differentiated between acceptability and satisfaction, with the latter being rated lower when compared with face-to-face delivery of care. This suggests that what was tolerated during a time of pandemic may not be necessarily preferred as circumstances change in the future and face-to-face care may again be possible.¹⁸ The high satisfaction for regional patients suggests that satisfaction from convenience and removal of the need to travel distance for appointments trumps that potential satisfaction of a face-to-face encounter, while for clinicians the addition of visual data to the consultation greatly enhanced their satisfaction. Meanwhile, the type of consultation and problems managed had an impact for both patients and clinicians, with routine reviews and times of clinical stability being more readily seen as resulting in satisfactory consultations.

These data raise interesting issues to consider as future telehealth service delivery is designed, both as the COVID-19 pandemic continues and when the opportunity for face-to-face consultations returns to previous (or broadly similar) patterns. First, the telephone alone does not appear to afford the same outcomes, at least according to clinicians. Visual information allows the detection of, at least some, physical changes, provides cues to emotional responses to information, enables interactions between family members to be better understood and provides a greater sense of personal connection between patient and clinician.¹⁸ The absence of this information and these connections result in a different form of consultation, with some describing telehealth interactions as more ‘transactional’. Most of these data were collected early in the pandemic locally, and it is possible that over time increased confidence with using the technology might have allowed more patients to use video screens in consultations. The importance of ‘coaching’ for patients to enable access and navigation of the telehealth platforms has been cited as key to successful telehealth care delivery.⁷ There has been limited investment in coaching for patients attending palliative care services in this country to date. However, parallel work in cancer care in the authors’ clinical settings has seen increased numbers of patients move from telephone only to audio-visual platforms following targeted support.

The opportunities afforded by telehealth are considerable, and care must be taken that these opportunities are available to all patients equally. Telehealth should reduce rather than lessen inequity of access to care. The clinicians in the present study highlighted less acceptability in those who were older or whose first language was not English. The study did not further elucidate the reasons for this –

whether this was due to availability or confidence in using the platforms or some other factors. Going forward, these are groups where particular attention must focus to ensure that any clinical service model with telehealth inclusion has mechanisms to support these key groups either by facilitating use of the technology or facilitating safe face-to-face contact.

It is likely that future service models will involve a blend of face-to-face contact as well as telehealth delivery of palliative care.¹⁸ It seems that those consultations where substantial communication tasks are required, such as introducing palliative care and explaining its role or negotiating goals of care, as highlighted by patients are important to be undertaken face to face. Similarly, if the person's clinical state is changing or problems are increasing, then face to face is likely to result in a more successful consultation. However, the consultations that provide a monitoring function and/or when the patient is well known to the clinician may be very satisfactorily conducted by telehealth, particularly when the patient is regionally based and video platforms are used. In any such future service model, coaching for patients and targeted support for those with additional needs must be core to telehealth delivery.

Limitations of the present study

The present study has limitations that require mention. The timing at the beginning of the pandemic in this country means that, as mentioned, learning and confidence in the technology was also early. It is possible that there is now greater access to and use of audio-visual platforms meaning that the evaluations presented here may also have evolved. Targeting those patients who had participated in a telehealth consultation means the sample has been selected for those already with some willingness and possibly pre-existing acceptance of the approach. A broader sampling of all patients would possibly reveal greater ambivalence towards telehealth. Sampling of the whole patient cohort should be

undertaken prior to establishing future telehealth models of care. Nevertheless, this matched sample of consultations provides unique insights into the consultation, including both its possibilities and its limitations, from the two key standpoints – that of patients and clinicians.

Conclusion

Telehealth has created many opportunities for patients and clinicians during the COVID-19 pandemic, enabling continued care for patients without risking potential for infection associated with hospital attendance. As such, it is highly valued by both patients and clinicians. When the environment allows for return to face-to-face consultations, it is likely that a hybrid model of in-person and telehealth care will become the norm. Within such a model, consultations that address key communication tasks or when clinical status is changing would best occur face to face, while those routine reviews are likely to be satisfactorily conducted by telehealth. Training and support for patients to navigate this platform must be included, with targeted support available for identified at risk groups.

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Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's web-site:

Table S1. Acceptability and Satisfaction reported by clinicians in the clinician-only cohort ($n = 812$).

Table S2. Univariate factors associated with clinician-reported acceptability of telehealth ($n = 812$).

Table S3. Univariate factors associated with clinician-reported satisfaction of telehealth ($n = 812$).