


## ORIGINAL ARTICLE

# Safety and efficacy of telephone clinics during the COVID-19 pandemic in the provision of care for patients with cancer

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telehealth, phone clinic, COVID-19, telephone clinic.

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**Abstract****Background:** Due to the COVID-19 pandemic, telephone clinics have been utilised to reduce the risk of transmission. Evidence supporting its quality and safety is required.**Aims:** Assess the efficacy and safety of telephone clinics in delivering care to established oncology patients and assess patient and health professionals' preference (telephone vs face-to-face clinics).**Methods:** Retrospective chart audit in the month preceding and month following the introduction of telephone clinics at the Gold Coast University Hospital and a patient and health professional questionnaire.**Results:** In total, 1212 clinical encounters occurred in the month post the introduction of telephone clinics (vs 1208 encounters prior). There were no statistically significant differences in 24-h (18 vs 22,  $P = 0.531$ ) or 7-day admissions (50 vs 46,  $P = 0.665$ ) comparing encounters in the month prior to the introduction of telephone clinics versus the month post, but there was a statistically significant difference in 30-day mortality post systemic therapy in favour of the post-telephone clinic period (7 vs 0 patients,  $P = 0.008$ ). Of the 222 patients who undertook the questionnaire, 42.3% preferred telephone clinics (95% confidence interval (CI) 35.97–48.97), 25.2% preferred face-to-face clinics (95% CI 19.92–31.39) and 32.4% did not prefer one method over another. Of the 24 health professionals who undertook the questionnaire, 70.8% felt patients preferred phone clinics.**Conclusions:** Generally, patients and clinicians viewed telephone clinics favourably. Nevertheless, a large portion of patients still prefer face-to-face clinics. Services should be tailored to individual preferences. Although there were no 'red flags' in terms of mortality or admission rates, further longitudinal research is required.**Introduction**

Initially detected in late 2019, the severe acute respiratory syndrome coronavirus (SARS-CoV-2) is highly transmissible. As of April 2020, it has led to the infection of 135.6 million reported cases worldwide and 29 419 cases in Australia.<sup>1,2</sup> With the emergence of the pandemic, clinicians have moved to reduce the risk of transmission in oncology patients.<sup>3</sup> Understandably, should individuals who are immunosuppressed be exposed to SARS-CoV-2 in crowded oncology waiting rooms or treatment centres, the results could be catastrophic.

On 23 March 2020, the Gold Coast University Hospital introduced telephone clinics to reduce this risk (prior to this date, telephone clinics were rarely utilised) and subsequently commenced research to ensure its quality and safety.

Patients were able to receive pathology forms when they presented for their systemic therapy or they were posted. Oncology patients were able to have their bloods taken at a dedicated oncology phlebotomy service away from the general collection centre. Oral systemic therapy was delivered to a 'medication bus' situated away from the main hospital pharmacy, to limit contact with potential contagious individuals. Intravenous systemic therapy was delivered at the main hospital at the dedicated oncology day unit.

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## Methods

This research involved three components. First, a retrospective chart audit of clinical encounters for review patients in those aged >18 years old in the month post the introduction of telephone clinics from 23 March 2020. This group was then compared to a similar number of clinical encounters involving review patients in the month prior to this. Clinical encounters (rather than individual patients) were selected as the comparator as admission and mortality rates post-clinical encounter were the key outcome measures.

Patients were contacted via the telephone (video-conferencing was not utilised) or if deemed not appropriate for this method, were seen face-to-face. New patients were seen via face-to-face clinics, but thereafter patients and their treating clinicians were encouraged to consider telephone clinics unless they were delivering bad news. Individual practitioners differed in the number and who they viewed would be an acceptable risk to be seen via telephone clinics. This was not dictated by the health service.

Using the electronic medical record system, patients' age, treatment type (e.g. curative vs palliative treatment) and type of cancer was documented. As a comparable safety measure between the pre-telephone clinics and post-telephone clinics period, admissions within 24 h and 7 days as well as presentations to the emergency department or after-hours oncology service that did not require admission were documented. A 30-day mortality post-systemic therapy between the two groups was also documented. Encounters were reviewed to see whether they were performed as telephone clinics versus face-to-face.

Data were analysed using the Chi-squared test (either Pearson's or Fisher's depending on the population size) and differences in age distribution was assessed using the two-sample Wilcoxon Rank-sum (Mann–Whitney) test.

The second component of this research involved a questionnaire asking patients to provide feedback post the establishment of telephone clinics. This questionnaire was developed in conjunction with the medical oncologists and clinical nurse consultants to identify the clinics' strengths and shortfalls. Patients attending either the oncology clinics or day unit who had been involved with both telephone and face-to-face clinics were invited to participate. Patient questionnaires asked individuals to rate their assessment (from 1 to 5; where 1 = strongly disagree to 5 = strongly agree) in the questionnaire (Table 1).

The final component of this research involved a qualitative questionnaire of health professionals' (administration officers, nursing staff, clinical nurse consultants

**Table 1** Patient questionnaire

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Phone clinics are my preferred way of being contacted (rather than face-to-face clinics)
I feel that I have enough time to discuss problems with my doctor during phone clinics
Phone clinics allow me to spend more time out of hospital (i.e. I feel I have more time at home rather than waiting for my clinic)
I feel that if I wanted to see my doctor face-to-face, I could arrange a face-to-face appointment
Phone clinics mean that I spend less money on things such as transport/parking
I miss the face-to-face interaction with health staff at the Gold Coast University Hospital
Getting pathology forms is simple when I have phone clinics
I forget to ask for scripts or tell about some of my symptoms during phone clinics
I would be happy to receive bad news or results of my scans via phone
Comments?

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and doctors) opinion on telephone clinics where they were asked to rate their assessment (from strongly agree to strongly disagree) regarding specified questions (Table 2).

Ethics approval for this study was granted by the Gold Coast Health Human Research Ethics Committee and funding was supported by the SERTA (Small Research Project Application) grant.

## Results

Prior to telephone clinics being encouraged as a major form of clinic, 63 (out of 1208) clinical encounters were performed as telephone clinics. This compares to the

**Table 2** Staff questionnaire

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In my opinion, patients prefer phone clinics
For the most part, phone clinics are the best way to review patients on chemotherapy
For the most part, phone clinics are the best way to review patients on immunotherapy/hormonal therapy or targeted therapy
In my opinion, patients report their symptoms/side effects effectively via telephone
Phone clinics save patient expense
Phone clinics allow patients to spend more time at home rather than in hospital
I can communicate effectively in phone clinics
Clinics are faster when phone clinics are utilised
Patients have adequate time to ask questions and relay their concerns in phone clinics
I am able to discuss prognosis effectively via telephone clinics
I am able to discuss new treatment and side effects via telephone
I am satisfied with phone clinics for review patients
I am satisfied with phone clinics for new patients
Comments?

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**Table 3** Patient systemic treatment type and cancer type pre- and post-introduction of telephone clinics

	Pre-introduction of telephone clinics	Post-introduction of telephone clinics	P-value†
Mean age (years)	62.52 (SD 13.10)	62.77 (SD 12.98)	0.336
Type of treatment, <i>n</i> (%)			
Curative treatment	312 (25.8)	329 (27.1)	0.463
Palliative treatment	626 (51.8)	663 (54.7)	0.155
Palliative, not on treatment	63 (5.2)	74 (6.1)	0.343
Not yet on treatment	63 (5.2)	59 (4.8)	0.696
No treatment, being followed up after curative therapy	144 (11.9)	87 (7.1)	7.2 × 10 <sup>-5</sup>
Cancer type, <i>n</i> (%)			
Urological	100 (8.3)	91 (7.5)	0.482
Lung	197 (16.3)	205 (16.9)	0.689
Breast	330 (27.3)	322 (26.6)	0.677
Central nervous system	36 (3.00)	44 (3.6)	0.371
Upper gastrointestinal	100 (8.3)	95 (7.8)	0.691
Colorectal	200 (16.6)	198 (16.3)	0.884
‘Other’	245 (20.3)	257 (21.2)	0.575

†P-value calculated with Pearson’s Chi-squared test.

SD, standard deviation.

period following when telephone clinics were encouraged, where 901 (out of 1212) clinical encounters were performed as telephone clinics.

### Patient demographics and characteristics

There was a total of 1212 clinical encounters (corresponding to 910 patients) post the introduction of telephone clinic period (corresponding to 910 patients) versus 1208 clinical encounters (814 patients) in the month prior. There was no statistically significant difference between clinical encounters between the two groups.

The majority of patients in both groups were receiving palliative systemic therapy. In the month post-introduction of telephone clinics, there were significantly less patients followed up after curative therapy who were not on any systemic therapy (Table 3). There was no significant difference in the distribution of cancer types between the two groups (Table 3).

Of the 814 patients seen in the pre-introduction of telephone clinic period, 557 of these were also seen in the post-telehealth clinic).

### Retrospective chart audit

Fifteen patients were recalled post-introduction of telephone clinics as they could not be assessed via the phone (these were included in the telephone clinic cohort so as not to introduce bias).

There was neither statistically significant difference between hospitalisations nor presentations pre- or post-introduction of the telephone clinics (Table 4). The 30-day mortality post systemic therapy was significantly higher prior to the introduction of telephone clinics (Table 4).

### Patient questionnaires

Of the 222 patients who participated in the questionnaires, 42.34% preferred telephone clinics (95% confidence

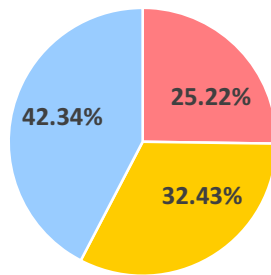
**Table 4** Encounters resulting in hospitalisations and presentations within 24 h and 7 days, and 30-day mortality post-systemic therapy

	Pre-introduction of telephone clinics	Post-introduction of telephone clinics	P-value
Hospitalisation within 24 h	18	22	0.531†
Hospitalisation within 7 days	50	46	0.665†
Presentations (excluding hospitalisation) within 24 h	3	4	1.000‡
Presentations (excluding hospitalisation) within 7 days	3	7	0.343‡
30-day mortality post systemic therapy	7	0	0.008‡

†P-value calculated with Pearson’s Chi-squared test.

‡P-value calculated with Fisher’s Chi-squared test.

### Phone clinics are my preferred way of being contacted (rather than face-to-face)



**Figure 1** Patient preference (telephone clinics vs face-to-face clinics). (■), Strongly disagree or disagree; (■), neither agree nor disagree; (■), strongly agree or agree.

interval (CI) 35.97–48.97) versus 25.22% (95% CI 19.92–31.39) who preferred face-to-face clinics; 32.43% neither preferred one method over another (Fig. 1).

The majority (69.49%) of patients felt they had sufficient time during phone clinics (13.89% did not, with the remainder neither agreeing nor disagreeing that they had sufficient time). Eighty-two percent of patients felt if needed, they could change their appointment from telephone to face-to-face.

For most (71.73%) patients, telephone clinics allowed them to spend more time out of hospital and 83.4% of patients stated they saved money. A large proportion (50.22%) of patients involved in telephone clinics missed the face-to-face interaction with staff.

Just over half (51.12%) of patients found collecting pathology forms or scripts a simple process; 39.9% of patients reported either forgetting to report symptoms or ask for scripts.

A large portion (46.18%) of patients stated they would be prepared to receive bad news via telephone (compared to 40.35% who would not; the remainder of patients not voicing an opinion).

Comments voiced by patients in favour of telephone clinics included:

- ‘I don’t have to wait as long in the waiting room’.
- ‘(Telephone clinics) saved waiting times and parking expenses!’
- ‘Chemotherapy is disruptive enough-less time travelling and in hospital is great’.
- ‘(I) received professional yet personal (interactions) via telephone clinics’.

Comments voiced against telephone clinics included:

- ‘If I need someone to examine me, I cannot do this over the phone’.

- ‘One must remember to have my 20 questions written down’.
- ‘It is harder to discuss things/ask things over the phone’.
- ‘(Telephone clinics) can be awkward with registrars that I am not familiar with’.
- ‘It’s sometimes difficult to understand accents’.
- ‘(Telephone clinics) are difficult as English is my second language’.
- ‘Waiting for hours at home for late (telephone) clinics defeated the purpose’.
- ‘I don’t want other household members/neighbours overhearing (my) medical discussions (when on the phone)’.
- ‘The patient knows the results are bad if they are asked to come in (for a face-to face consult rather than telephone clinics). This could cause increased anxiety for patients’.

Other patients felt it was best to have a mix of both telephone and face-to-face clinics:

- ‘Having a physical face-to-face every 3rd to 4th interaction would be beneficial’.
- ‘The key is finding a happy medium’.

### Health professionals’ questionnaires

Twenty-four health professionals (out of 27 who were offered to participate) partook in the questionnaire (4 administration officers, 4 clinic nurses, 7 clinical nurse consultants and 9 doctors). The majority (70.82%) of health professionals felt patients were in favour of phone clinics.

Similarly, most (17/24) staff felt they could communicate effectively through telephone clinics (four health professionals felt this was not applicable as they did not utilise telephone clinics frequently). Health professionals felt clinics were faster when telephone clinics were utilised (with 75% agreeing or strongly agreeing with this statement) and reduced time and costs for patients. A large portion (41.66%) of clinicians reported that patients struggled to report symptoms or side-effects during telephone clinics.

Just under half (45.8%) of health staff felt that discussions in regards to prognosis were not able to be effectively performed via telephone, with similar feelings voiced over discussions in regards to new treatments and their side-effects. Thirteen of 24 health professionals were satisfied in using telephone clinics with review patients (5/24 professionals stated this did not relate to them as they were not involved in these discussions).

Comments voiced by patients in favour of telephone clinics included:

- ‘Phone clinics are fine if the patient is long-term and stable.’
- ‘(Phone clinics) are good provided patients have a reasonable baseline health literacy and are prompted to report all potential side-effects.’

Comments voiced against telephone clinics included:

- ‘It is difficult to examine certain clinical signs e.g. rash or dyspnoea’ through phone

Other comments included:

- ‘The decision on whether a patient should be seen via telephone versus face-to-face should be tailored to individual patients and their clinical factors’.

## Discussion

There have been several systematic reviews assessing the safety and efficacy of telehealth in the general population.<sup>4–8</sup> These have predominantly focussed on video-conferencing and have found that telehealth is viewed favourably by patients and clinicians. A recent study by Jorge *et al.* during the COVID-19 pandemic assessed video-conferencing clinics between oncologists and their patients and found that the majority of patients and health professionals were satisfied.<sup>7</sup> There have also been several studies assessing barriers in telehealth’s adoption (e.g. lack of infrastructure or technological support as well as limitations to certain populations who may struggle with technology).<sup>9</sup> A recent survey from the Victorian COVID-19 Cancer Network telehealth expert working group (in which services used telephone and video-conferencing) identified similar barriers.<sup>10</sup>

When **telephone** clinics in the oncology setting have been studied, they frequently do not assess clinical interactions between specialists and their patients, rather they have been studied as a method to improve symptomatology, reduce psychological distress and improve quality of life.<sup>8,11,12</sup>

In the oncology setting in Australia, it has predominantly been video-conferencing ‘satellite clinics’ between clinicians and patients (with local healthcare workers present as support) in rural or remote settings that have been studied.<sup>13,14</sup> Although the current study does show that 42.34% of patients prefer telephone clinics, it is interesting to note that just over a quarter of patients involved in telephone clinics in the current study would have preferred

face-to-face clinics. Once more, this highlights that it is imperative patients have greater autonomy in decision-making.

Research has highlighted the need for further studies into the experience of patients and clinicians to ensure telehealth preserves the quality of interaction between patients and clinicians.<sup>10,15</sup> Similarly, research outcomes are commonly lacking in terms of hard end-points (e.g. mortality, admissions and therapy toxicities).

Based on this study’s data, telephone clinics did not raise any ‘red flags’ in terms of outcomes (e.g. admissions, presentations or mortality post systemic therapy). These results should be interpreted with caution however. The authors acknowledge that longitudinal data are lacking and there may also be unintentional bias from clinicians in not treating ‘borderline’ patients during this period.

Ideally, a randomised control trial should be established with two arms (telephone versus face-to-face clinics) with patients matched for age, gender, performance status, disease progression, cancer type and treatment. This would be difficult to implement in the current setting as clinicians are wary of allocating patients to the telephone clinic group if they have significant concerns. Given clinicians assessed individual factors prior to allocating patients to either telephone or face-to-face clinics, this may affect the reproducibility of these results.

Although telephone clinics may be limited in their assessment of non-verbal cues or physical signs (factors that may be able to overcome by video-enhanced technology), it is a method that can be rapidly implemented in resource-limited settings and used with individuals that may be unfamiliar with technology. In the ever-evolving landscape of the COVID-19 pandemic, this is particularly relevant.

This retrospective analysis involved a large patient population and adds to the body of evidence assessing the quality of the interaction between patients and clinicians using telephone clinics. The authors acknowledge that although it is unlikely to ever replace traditional face-to-face clinics, it may be an effective method in select low-risk patients in whom travel or costs limit their ability to engage with the healthcare system.

## Conclusion

In the ever-changing landscape of the COVID-19 pandemic, this study has demonstrated that a rapidly implemented practice of using telephone clinics is generally viewed favourably by both patients and healthcare professionals. This research highlights that

understanding patients' experiences and supporting their decision-making capacity is paramount as technology is used more frequently in the healthcare

setting. Further research is required to ensure that the quality and safety of telephone clinics are comparable to face-to-face clinics.

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