# Telemedicine in Orthopaedic Oncology During the COVID-19 Pandemic: An Assessment of Patient Satisfaction

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## Introduction

- Telemedicine provides the capability to deliver remote healthcare to patients
- The unprecedented emergence of the COVID-19 pandemic in March 2020 forced many institutions to expedite the implementation of telemedicine services to facilitate continued patient care at a distance

## Objective

- To determine the patient satisfaction of telemedicine for outpatient clinic visits during the COVID-19 pandemic in a university-based orthopaedic oncology practice

## Study Design

- Telemedicine outpatient visits from March 1 to June 1
- Telephone survey from June 1-15 by research personnel
- 93 patients identified (71 reached)

**64 patients (90%) agreed to participate**

## Patient Cohort

**Table 1. Patient Demographics**

| | |
|---|---|
| **No. of Patients** | 64 (100) |
| **Median Age (Range)** | 58 (7-88) |
| **Sex** | |
| Male | 32 (50) |
| Female | 32 (50) |
| **Diagnosis** | |
| Bone Sarcoma | 10 (16) |
| Soft Tissue Sarcoma | 15 (23) |
| Benign | 19 (29) |
| Non-Sarcoma Cancer | 10 (16) |
| Other | 10 (16) |
| **Median distance in miles of home from VUMC (range)** | 108 (9-706) |
| **Median driving time in minutes to VUMC (range)** | 107 (16-600) |
| **Median time in minutes had to take away from work/school for telemedicine visit (range)** | 60 (0-480) |
| **Appointment Type** | |
| New Patient | 12 (19) |
| Follow up (cancer) | 20 (31) |
| Follow up (not cancer) | 9 (14) |
| Post-op (within 90 days) | 23 (36) |
| **Electronic Medium** | |
| Computer | 16 (25) |
| Phone | 45 (70) |
| Tablet | 3 (5) |

## Survey Results

***How satisfied were you with*:**

Likert scale: Very Dissatisfied (VD), Dissatisfied (D), Neutral (N), Satisfied (S), Very Satisfied (VS)

***Median score reported in **green***

**Median likert score for all 12 questions** = **VS**

1. The length of time (# of days/weeks) you waited to be seen after scheduling your telemedicine visit? **VS**
2. The instruction you received prior to logging into your visit? **VS**
3. The actual login process on My Health at Vanderbilt? **VS**
4. The length of time you waited for the specialist after logging into your visit? **VS**
5. The audio quality? **VS**
6. The visual quality? **VS**
7. The length of time the specialist spent with you? **VS**
8. How well your privacy was respected? **VS**
9. The explanation of your condition and treatment by the specialist? **VS**
10. How well the specialist answered your questions? **VS**
11. The thoroughness and skillfulness of the specialist? **VS**
12. Your overall experience with your telemedicine visit? **VS**

***Yes/No*:**

1. Would you use telemedicine again? **Yes, 94%**
2. If we weren't in a pandemic, would this affect your current opinion on using telemedicine? **Yes, 11%**
3. Would you be able to do this telemedicine visit while at work? **Yes, 64%**

***Open Ended:***

1. Could anything have been improved during your visit? **Yes, 25%**
2. What was the best aspect of using telemedicine for your visit? **"Convenience", 78%**
3. Can you foresee a scenario in which you would prefer an in-office visit over telemedicine? **Yes, 69%**
4. If bad or unexpected news was to be delivered during your visit, would you have a preference whether this is done over telemedicine or in an in-office visit? **Yes, 38%**
1. If you had to pay for your telemedicine visit out of pocket, how much would you be willing to pay for it? **Most common response = $15-50 (copay)** **7 patients would pay > $100**

***Head-to-Head Comparison:***

Compared to an in-office visit, your telemedicine visit was **Better (B)**, **Same (S)** or **Worse (W)**, in regards to…?

| | |
|---|---|
| **Convenience** | **80% B, 16% S, 4% W** |
| **Time** | **77% B, 23% S, 0% W** |
| **Privacy** | **30% B, 67% S, 3% W** |
| **Assessment of condition** | **17% B, 67% S, 16% W** |
| **Overall quality** | **23% B, 69% S, 8% W** |

## Survey Results

***Head-to-Head Comparison Analysis***

**Better/Same/Worse responses were analyzed by 6 covariate groups:**

- **Age** (under 50 vs. over 50)
- **Gender** (Male vs. Female)
- **Diagnosis** (Cancer vs. Not cancer)
- **Distance** (Under 100 miles vs. Over 100 miles)
- **Electronic medium** (Computer/tablet vs. Phone)
- **Type of Visit** (New Patient vs. Follow-Up vs. Post-op)

**Convenience** and **Time:** no difference by groups

**Privacy**

- **Patients under 50 years old** had a greater proportion of **Better** responses
  **50%** (8/16) vs. **23%** (11/48), *P = 0.03*
- **New patients** had a greater proportion of **Better** responses
  **58%** (7/12) vs. **28%** (8/29) vs. **17%** (4/23), *P = 0.04*

**Assessment of condition**

- **Post-op patients** had a greater proportion of **Worse** responses
  **26%** (6/23) vs. **10%** (4/41), *P = 0.05*

**Overall quality**

- **Patients over 50 years old** had greater proportion of **Worse** responses
  **10%** (5/48) vs. **0%** (0/16), *P = 0.07*

***Other Results***

**Audio/Visual problem?**

- 89% None

**Can you foresee a scenario in which you prefer an in-office visit over telemedicine?**

1. **Non-cancer diagnosis** more likely than a cancer diagnosis
   **83%** (24/29) vs. **57%** (20/35), *P = 0.03*
2. **Post-operative patients** compared to all other patients
   **87%** (20/23) vs. **58%** (24/41), *P = 0.04*

**Time Comparison?**

- Mean telemedicine visit time = **40 mins**
- Mean estimated in-office visit time (includes travel) = **5 hrs**

## Key Takeaways

***CURRENT PROBLEM*:**

- There is a need to better understand the patient perception and satisfaction level of telemedicine visits in an orthopaedic oncology practice

***WHAT THIS STUDY ADDS*:**

- **Patient opinions are quite favorable**, with **convenience and time** being the **greatest perceived advantages of telemedicine**
- **84% of patients** reported telemedicine visits as the **same or better than** in-office visits with regards to **convenience, time, privacy, assessment of condition and overall quality**
- **Physical assessment of condition** was the **most common reported need for improvement**, namely by immediate **post-operative patients**

***FUTURE DIRECTION*:**

- A **standardized telemedicine musculoskeletal exam** for orthopaedic oncology patients may be useful to improve the assessment of physical condition in specific situations
  - **new soft tissue mass exam**
  - **local surveillance exam**
  - **post-op wound exam**

## Disclosures

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