

## **Rapid Utilization of Telehealth in a Comprehensive Cancer Center as a Response to COVID-19**

Peter E. Lonergan, MD<sup>1\*</sup>; Samuel L. Washington III, MD, MAS<sup>1\*</sup>; Linda Branagan, PhD<sup>2</sup>; Nathaniel Gleason, MD<sup>3,4</sup>; Raj S. Pruthi, MD, MHA<sup>1</sup>; Peter R. Carroll, MD, MPH<sup>1</sup>; Anobel Y. Odisho, MD, MPH<sup>1,2,4</sup>

\*Equal contribution

<sup>1</sup>Department of Urology, Helen Diller Family Comprehensive Cancer Center, University of California, San Francisco, California

<sup>2</sup>Telehealth Resource Center, University of California, San Francisco, California

<sup>3</sup>Division of General Internal Medicine, University of California, San Francisco, California

<sup>4</sup>Center for Digital Health Innovation, University of California, San Francisco, California

Corresponding Author:

Anobel Y. Odisho, MD, MPH  
Department of Urology  
University of California, San Francisco  
550 16th St  
San Francisco, CA 94143  
Email: Anobel.Odisho@ucsf.edu

Keywords: telehealth; COVID-19; video visit; oncology

Word count: 625

## **Abstract**

**Background:** The emergence of the coronavirus disease 2019 (COVID-19) pandemic in March 2020 created unprecedented challenges in the provision of scheduled ambulatory cancer care. As a result, there has been a renewed focus on video consultations as a means to continue ambulatory care.

**Objective:** To characterize the increase in video visits at the University of California, San Francisco Comprehensive Cancer Center in response to COVID-19 and compare demographics/appointment data from January 1, 2020 and in the 3 weeks after transition to video visits.

**Methods:** Demographics and appointment data (dates, visit types, and departments) were abstracted from the Electronic Health Record reporting database. Video visits were performed using a HIPAA-compliant video conferencing platform with a pre-existing workflow.

**Results:** In 17 departments and divisions at the Cancer Center, 2,284 video visits were performed in the pre-COVID-19 period (average  $208 \pm 75$  per week) and 3,015 performed in the 3-week post-COVID-19 period (average  $1,005 \pm 149$  per week). The proportion of video visits increased from 7-18% to 54-68%, between the pre- and post-COVID-19 periods without any disparity based on race/ethnicity, primary language, or insurance

**Conclusions:** In a remarkably brief period of time, we rapidly scaled the utilization of telehealth in response to COVID-19 and maintained access to complex oncologic care at a time of social distancing.

## **Introduction**

The emergence of the coronavirus disease 2019 (COVID-19) pandemic in March 2020 created unprecedented challenges in the provision of scheduled healthcare and, in particular, ambulatory cancer care. The rapid spread of COVID-19 has renewed focus on telehealth<sup>1</sup>, including video consultations<sup>2</sup>, as a means of continuing ambulatory care without increasing the risk of potential exposure for patients, clinicians, and staff.

The University of California, San Francisco (UCSF) Health established a Telehealth Program in 2015 and offers video visits in all practices. In response to the evolving pandemic, leadership challenged the organization to transition all in-person clinic visits, beginning March 15, 2020, to video visits with exceptions only for specific, urgent cases. Here we report initial data on the rapid expansion and utilization of telehealth throughout a Comprehensive Cancer Center in response to the COVID-19 pandemic.

## **Methods**

Demographics and appointment data (dates, visit types, and departments) were abstracted from the Electronic Health Record reporting database. The pre-COVID-19 period was defined as January 1 to March 14, 2020, prior to the transition, and the post-COVID-19 period as the three weeks following the transition. All video visits were performed using a HIPAA-compliant video conferencing platform (Zoom Video Communications Inc, San Jose, CA) with a pre-existing workflow (Supplementary Figure 1).

## Results

Across 17 departments and divisions at the Cancer Center, 2,284 video visits were performed in the pre-COVID-19 period (average  $208 \pm 75$  per week) and 3,015 performed in the post-COVID-19 period (average  $1,005 \pm 149$  per week) (Table 1 and Supplementary Figure 2). Figure 1 shows the weekly proportion of video, in-person clinic, procedure, and phone visits since January 1, 2020. The proportion of video visits increased from 7-18% to 54-68%, between the pre- and post-COVID-19 periods.

Post COVID-19, first clinic encounter (24.9% vs 18.3%;  $p < 0.001$ ), first video visit (62.2% vs 46.2%;  $p < 0.001$ ), and MD-provided visits (82.9% vs 67.3%;  $p < 0.001$ ) increased without any disparity based on race/ethnicity, primary language, or insurance (Table 1). Increased post COVID-19 utilization was noted for patients in urban areas (93.2% vs 88.7%;  $p < 0.001$ ).

## Discussion

We demonstrate a rapid expansion (from  $<20\%$  to 68%) in telehealth use in a Comprehensive Cancer Center over a remarkably brief time period in response to COVID-19 without differences by race or insurance. Medicare telehealth visits have increased by more than 25% annually for the past decade<sup>3</sup>, yet absolute adoption numbers remain low and fragmented with concerns about potentiating disparities in healthcare access<sup>4</sup>.

Several factors have likely enabled the rapid expansion of video visits at our institution. First, we had an established telehealth structure and workflow familiar to providers and practice staff. Second, UCSF made a strategic decision to provide Relative Value Unit (RVU) credit to providers for telehealth visits since 2015, irrespective of payer reimbursement. Third, new regulatory changes at federal and state level as a response to COVID-19 have reduced barriers, including the ability to see new patients (including Medicare beneficiaries) without a prior in-person visit to establish care and reimbursement for telehealth encounters by the Centers for Medicare & Medicaid Services (CMS) at parity with in-person visits beginning March 17, 2020<sup>5</sup>. Finally, CMS now permits providers licensed in any state to provide telehealth services across the country<sup>6</sup>. Limitations of this study include a lack of qualitative and outcomes data, although outside the scope of this analysis.

Pandemics pose unique challenges to healthcare delivery. Here we report our experience in rapidly scaling the utilization of telehealth in response to COVID-19 and maintaining access to complex oncologic care at a time of social distancing. In many health systems, there will undoubtedly be many lessons learned from this “natural experiment”, which has the potential to permanently change care delivery patterns.

## References

1. Hollander JE, Carr BG. Virtually Perfect? Telemedicine for Covid-19. *N Engl J Med*. 2020. [DOI: 10.1056/NEJMp2003539]
2. Greenhalgh T, Wherton J, Shaw S, Morrison C. Video consultations for covid-19. *BMJ*. 2020;368:m998.
3. Mehrotra A, Jena AB, Busch AB, Souza J, Uscher-Pines L, Landon BE. Utilization of Telemedicine Among Rural Medicare Beneficiaries. *JAMA*. 2016;315(18):2015-2016.
4. Wilcock AD, Rose S, Busch AB, et al. Association Between Broadband Internet Availability and Telemedicine Use. *JAMA Intern Med*. 2019. [DOI: 10.1001/jamainternmed.2019.2234]
5. Medicare Telemedicine Health Care Provider Fact Sheet. <https://www.cms.gov/newsroom/fact-sheets/medicare-telemedicine-health-care-provider-fact-sheet>. Accessed March 30, 2020.
6. COVID-19 Emergency Declaration Health Care Providers Fact Sheet. <https://www.cms.gov/files/document/covid19-emergency-declaration-health-care-providers-fact-sheet.pdf>. Accessed March 30, 2020.

## **Author Contributions**

Dr. Odisho had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Concept and design: Odisho, Lonergan, Washington.

Acquisition, analysis, or interpretation of data: Odisho, Lonergan, Washington.

Drafting of the manuscript: Lonergan, Washington.

Critical revision of the manuscript for important intellectual content: All authors.

Statistical analysis: Odisho, Washington, Lonergan

Administrative, technical, or material support: Branagan.

Supervision: Carroll, Pruthi, Odisho

## **Conflict of Interest/Disclosures**

Dr. Odisho was a consultant for VSee from December 2019 to January 2020.

## **Funding/Support**

None

## **Additional Contributions**

None

**Table 1. Demographics of patients who had video visits pre- and post-COVID-19**

	<b>Pre-COVID-19 (n = 2,284)</b>	<b>Post-COVID-19 (n = 3,015)</b>	<b><i>P</i></b>
Age, yr (Median, IQR)	64.3 (54.9 - 71.5)	64.2 (53.6 - 72.1)	0.92
Female (%)	844 (37)	1366 (45.3)	<0.01
Ethnicity/Race			<0.01
White	1606 (70.3)	1,866 (61.9)	
Black/African American	78 (3.4)	118 (3.9)	
Hispanic	215 (9.4)	289 (9.6)	
Asian	197 (8.6)	461 (15.3)	
Other/Unknown	188 (8.2)	280 (9.3)	
English Primary Language	2,212 (96.9)	2,807 (93.1)	<0.001
Interpreter requested	84 (3.7)	211 (7.0)	<0.01
Marital Status			0.34
Married/Partnered	1,580 (69.2)	1,972 (65.4)	
Single/Separated	373 (16.3)	552 (18.3)	
Unknown/Declined	108 (4.7)	154 (5.1)	
Patient Residence			<0.001
Urban	2,026 (88.7)	2,810 (93.2)	
Rural	255 (11.2)	202 (6.7)	
Payor			0.14
Commercial	929 (40.7)	1,272 (42.2)	
Medicare	1,077 (47.2)	1,327 (44.0)	
Medicaid	224 (9.8)	344 (11.4)	
Self-pay	32 (1.4)	42 (1.4)	
First Clinic Encounter	417 (18.3)	751 (24.9)	<0.001
First Video Visit	1,054 (46.2)	1,875 (62.2)	<0.001
Provider Type			<0.001
MD	1,538 (67.3)	2,499 (82.9)	
Physician Assistant/Nurse Practitioner	746 (32.7)	516 (17.1)	

Abbreviations: IQR, interquartile range



**Figure 1. Relative weekly trends in clinic encounters, stratified by visit type.** The proportion of in-person visits, procedural visits, video visits and phone visits from the weeks beginning December 30, 2019 to March 30, 2020 with March 16, 2020 denoting the institution-wide transition to video visits in response to COVID-19.

