



RESIDENT ARTICLE

Telemedicine Surge in the Midst of the COVID-19 Pandemic: Residents' Perspectives on Incorporating Telemedicine Training

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SETTING AND PROBLEM

The development of community spread SARS-CoV-2, the virus known to cause COVID-19, poses health risks to our patients and healthcare workers, including residents and fellows, herein referred to as “trainees.” A sustainable method is needed to continue providing patient care and maintaining trainee education while reducing risk of exposure to the virus.

Telemedicine is a useful and now commonplace technology for the delivery of healthcare in the pediatric setting and is an important resource in the response to emergencies, such as the COVID-19 pandemic.^{1,2} The pandemic catalyzed the implementation of telemedicine at University of Florida (UF) Health to address the issue of continuing patient care and reducing viral exposure, the daily count of telemedicine visits increased from approximately 20 per day to more than 1,000 per day between March 23 and April 16, 2020. Although telemedicine was not previously incorporated in our trainee education, we hypothesized trainees would quickly learn to conduct virtual encounters and perform them effectively in response to the pandemic.

INTERVENTION

In a single, large pediatric department, a system was developed to rapidly implement telemedicine visits into our trainees' clinics. This involved enabling the appropriate technology at clinic sites, setting up algorithms for patient scheduling, and ensuring that all trainees were registered for our telemedicine platform. Trainees helped develop and disseminate PDF and video guides on conducting visits, appropriate “screen-side manner,” best practices, documentation, and billing. Approximately one month after the implementation of telemedicine encounters, an online and Institutional Review Board (IRB) approved survey of pediatric trainees was conducted to assess their experiences with telemedicine encounters and attitudes towards incorporating telemedicine into trainee education.

OUTCOMES TO DATE

A review of our aggregate pediatric visits from March 23 to April 23, 2020, showed 19% of visits were performed through telemedicine. Of the total 88 pediatric trainees, 51 (58%) responded to the pediatric trainee experience survey from April 30 to May 2, 2020, (41 residents and 10 fellows responded; Table 1) A total of 77% of respondents had not performed a telemedicine visit prior to March 23, 2020, but 78% had performed at least one visit since its onset. Of those who had performed telemedicine (Table 2), only 40% agreed or strongly agreed that they received adequate telemedicine training. Moreover, 75% stated that they see themselves incorporating telemedicine into their future and 75% agreed that telemedicine was an effective use of their clinical time. Of the respondents who had not performed telemedicine to date, all agreed or strongly agreed they would be interested in observing or participating in telemedicine visits in the future. Furthermore, 82% of respondents indicated that telemedicine usually or always allowed them to provide effective patient care and 77% stated that they usually or always received positive feedback from patients/families at the end of the encounter. Lastly, 85% of those who had performed telemedicine and 80% of respondents who had not performed telemedicine agreed or strongly agreed that a formal telemedicine curriculum for trainees would be beneficial.

DISCUSSION

Given the rapid adoption of telemedicine at our institution as telemedicine laws and policies shifted in response to the COVID-19 pandemic, we anticipate a permanent presence of telemedicine in pediatrics in the future. Thus, telemedicine should be included in pediatric trainee education to prepare for independent clinical practice. Our survey of pediatric trainees indicates significant interest in a formalized telemedicine curriculum, and a largely positive reception of telemedicine as a clinical modality by both trainees and patients. Resident respondents largely felt that more telemedicine education was needed and desired. We plan to develop, implement, and evaluate a formal telemedicine curriculum for pediatric trainees in order to provide comprehensive and standardized education on this method of healthcare delivery.

REFERENCES

1. Burke BL, Hall RW. Telemedicine: pediatric applications. *Pediatrics*. 2015;136(1):e293-308.
2. Bashshur R, Doarn CR, Frenk JM, et al.. Telemedicine and the COVID-19 pandemic, Lessons for the future. *Telemedicine e-Health*. 2020;26(5):571-573.

LEVEL OF TRAINING	PGY-1	PGY-2	PGY-3	Fellow	Total	
Respondents / # of trainees per level of training	13/18 (72.2%)	16/18 (88.9%)	12/16 (75%)	10/36 (27.7%)	51/88 (58%)	
PREVIOUS PARTICIPATION IN TELEMEDICINE	Yes	No				
	40 (80%)	10 (20%)				
TELEMEDICINE SETTINGS	Before COVID	After COVID				
Acute Clinic	0	8 (100%)				
After Hours Clinic	0	6 (100%)				
Continuity Clinic	1 (2.9%)	33 (97.1%)				
Subspecialty Clinic	2 (11.2%)	15 (88.2%)				
In Patient Setting	0	7 (100%)				
Other	3 (75%)	1 (25%)				
NUMBER OF TELEMEDICINE ENCOUNTERS DURING TRAINING	None	1 - 5	6 - 10	11 - 15	16 - 20	20 +
Before COVID	26 (78.8%)	7 (21.2%)	0	0	0	0
After COVID	0	16 (41%)	4 (10.3%)	2 (5.1%)	3 (7.7%)	14 (35.9%)

Table 1: Demographics and Responses of Resident Survey Participants

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I received adequate training/education when I began performing telemedicine visits.	3 (7.5%)	9 (22.5%)	12 (30%)	13 (32.5%)	3 (7.5%)
I received adequate guidance (e.g., troubleshooting) when I began performing telemedicine visits.	1 (2.5%)	3 (7.5%)	14 (35%)	18 (45%)	4 (10%)
The technology involved in telemedicine enhanced my learning experience.	3 (7.5%)	3 (7.5%)	9 (22.5%)	17 (42.5%)	8 (20%)
Incorporating telemedicine visits into my clinical practice was a seamless experience.	1 (2.5%)	8 (20%)	9 (22.5%)	20 (50%)	2 (5%)
I feel comfortable using telemedicine without direct supervision (ie. supervisor attended telemedicine visit with you).	0	2 (5%)	1 (2.5%)	24 (60%)	13 (32.5%)
I feel confident training others on the use of telemedicine.	0	7 (17.5%)	9 (22.5%)	14 (35%)	10 (25%)
I see myself incorporating telemedicine into my future clinical practice.	1 (2.5%)	2 (5%)	7 (17.5%)	16 (40%)	14 (35%)
A formal telemedicine curriculum for pediatric trainees would be beneficial. (respondents are trainees who performed at least 1 telemedicine encounter to date)	0	1 (2.5%)	5 (12.5%)	17 (42.5%)	17 (42.5%)
A formal telemedicine curriculum for pediatric trainees would be beneficial. (respondents are trainees who have not performed a telemedicine encounter to date)	0	0	2 (20%)	5 (50%)	3 (30%)
Evaluation of Telemedicine	Never	Seldom	About Half the Time	Usually	Always
Participating in telemedicine encounters was an effective use of my clinical training time.	0	6 (15%)	4 (10%)	16 (40%)	14 (35%)
The supervision I received with the telemedicine visits was similar to supervision on in-person visits.	0	4 (10%)	4 (10%)	14 (35%)	18 (45%)
Telemedicine allowed me to provide effective patient care.	1 (2.5%)	2 (5%)	4 (10%)	23 (57.5%)	10 (25%)
The technology used during telemedicine visits worked well.	0	0	5 (12.5%)	26 (65%)	9 (22.5%)
I have received positive feedback from patients/families at the end of my telemedicine visit.	1 (2.6%)	5 (12.8%)	3 (7.7%)	19 (48.7%)	11 (28.2%)

Table 2: Trainee Satisfaction with Telemedicine