

Telemedicine in Pediatric Training: An EPA and Results of a Pilot National Curriculum for Pediatric Trainees

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Drs. Fitzgerald and Paradise Black received grant funding from Children's Miracle Network to develop a curriculum for telemedicine in pediatric training

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**BEST
CHILDREN'S
HOSPITALS**

U.S. News & WORLD REPORT

RANKED IN
8 SPECIALTIES
2021-22

UFHealth
shands children's hospital

2019 general needs assessment

- Query of APPD General Discussion group 7/16/2019: 3 responses
- Literature review:
 - Telemedicine utilized in pediatrics, but uptake slow
 - Limited data in the literature on
 - Effective use
 - Curricula in pediatrics
 - Curricula models in other specialties



Targeted Needs Assessment:

Response rate: 43% (468/1076)
Telemedicine pre-COVID: 14.6%
Telemedicine post-COVID: 87.6%
Curriculum important: 71%
Have curriculum: 31%
Developed quickly: 63%
Adequate: 39.4%

Working “Backwards”



Spring 2020

Approached by the ABP to develop a Pediatric Telemedicine Entrustable Professional Activity

Lead our team to the use of “Backward Design” for our curriculum

Developing the EPA forced us to consider the ultimate learning goals for our trainees first before the curriculum was developed.

Summer 2020

EPA became the background for our curriculum objectives

Fall 2020

Objectives were finalized and mapped to the Pediatric Milestones 1.0

Curriculum content was developed based on these objectives and assessment measures

Backwards Design EPA to objectives



Scope of Practice → Scope of Practice
→ Exam techniques

Professionalism

Special Populations

Access to Telemedicine Care

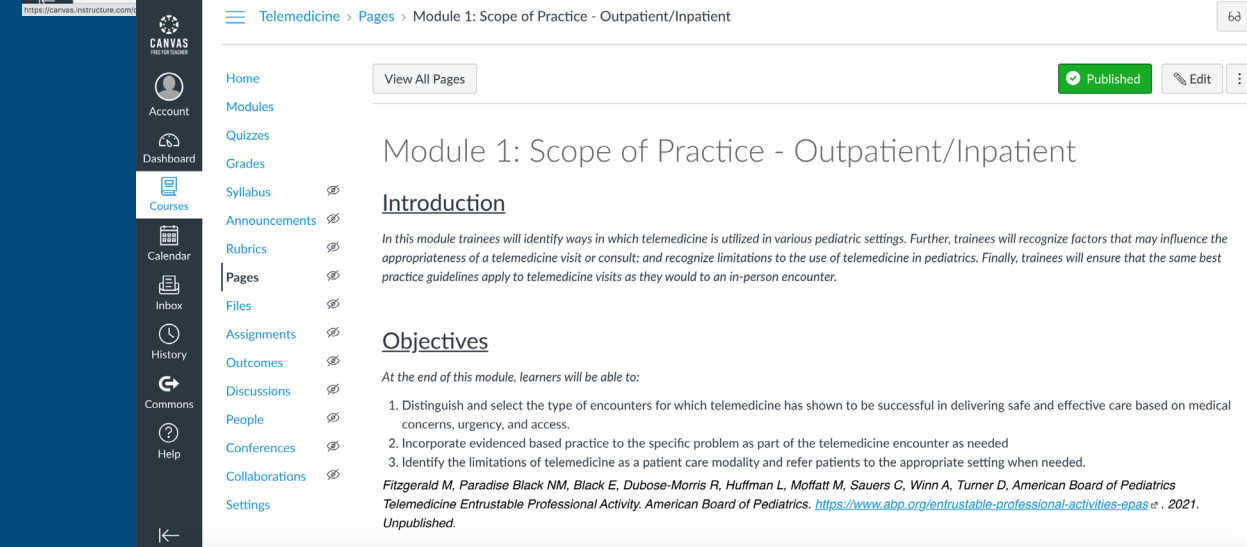
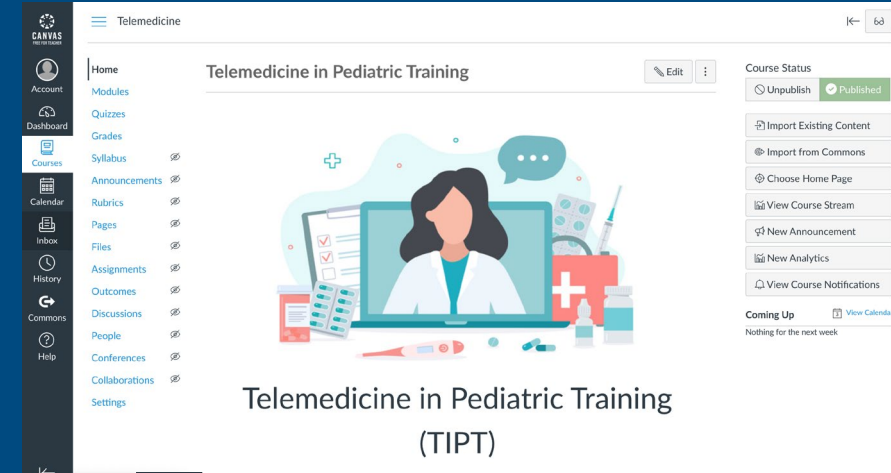
Documentation and Billing

Technology and Privacy

Team Based Care

Safety Considerations

- Module development
- Participants and recruitment
- Program evaluation: pre-and post trainee knowledge assessment and attitudes survey (TAM)
- Multi-site study January to April 2021
- UF IRB approval



Module 1: Scope of Practice - Outpatient/Inpatient

Introduction

In this module trainees will identify ways in which telemedicine is utilized in various pediatric settings. Further, trainees will recognize factors that may influence the appropriateness of a telemedicine visit or consult; and recognize limitations to the use of telemedicine in pediatrics. Finally, trainees will ensure that the same best practice guidelines apply to telemedicine visits as they would to an in-person encounter.

Objectives

At the end of this module, learners will be able to:

1. Distinguish and select the type of encounters for which telemedicine has shown to be successful in delivering safe and effective care based on medical concerns, urgency, and access.
2. Incorporate evidenced based practice to the specific problem as part of the telemedicine encounter as needed
3. Identify the limitations of telemedicine as a patient care modality and refer patients to the appropriate setting when needed.

Fitzgerald M, Paradise Black NM, Black E, Dubose-Morris R, Huffman L, Moffatt M, Sauers C, Winn A, Turner D, American Board of Pediatrics. *Telemedicine Entrustable Professional Activity*. American Board of Pediatrics. <https://www.abp.org/entrustable-professional-activities-epas> • 2021. Unpublished.



| Demographic | N | Percent |
|---------------------------------------|----|---------|
| Gender | | |
| Female | 83 | 76.9 |
| Male | 24 | 22.1 |
| Preferred not to answer | 1 | 0.9 |
| Postgraduate Year (PGY) Status | | |
| PGY1 | 29 | 26.9 |
| PGY2 | 36 | 32.4 |
| PGY3 | 19 | 17.6 |
| PGY4-7 | 24 | 28.3 |

- Over 100 participants at 40 institutions
- 92% completed all study components
- Resident distribution even across post-graduate years
- Combined residencies represented: child neuro and pediatric psychiatry
- Fellows represented: 10 subspecialties
- **66.6% (N=72) with less than 1 year of telemedicine experience**

- Knowledge assessment (paired t-test)
 - Pretest 69.3% and posttest 80% ($p < 0.0001$)
 - Less than 1 year experience with significant gains
 - Effect size moderate ($d = 0.66$)
 - No telemedicine experience, effect size large ($d = 0.95$)
 - Less than 1 year experience, effect size moderate to large ($d = 0.75$)
- Attitudes survey
 - Average sum of positive agreement increased pre vs post ($p < 0.0001$)
 - Effect size small-moderate overall for participants pre vs post ($d = 0.44$)
 - No telemedicine experience, effect size especially large ($d = 1.15$)
 - Perceptions of awareness of legal issues, effect size especially large ($d = 1.15$)
 - Perceptions of participant productivity and ability to deliver care, effect size moderate ($d = 0.53$)



- Not all fellowship specialties represented and small numbers
- Improve the reliability of knowledge assessment (KR20 = 0.11; test-retest correlation = 0.40)
- Convenience sample with self-enrollment
- Sample size not large enough to detect interaction effects between groups (e.g., novices versus more experienced)



- Improvement in knowledge*
 - Especially naïve or new to telemedicine
- Positive change in attitudes
 - Especially those naïve to telemedicine
- Need further study for fellowship specialties
- 92% completion rate- engagement

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Questions??

