Telehealth Education: Impact on Provider Experience and Adoption

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Background

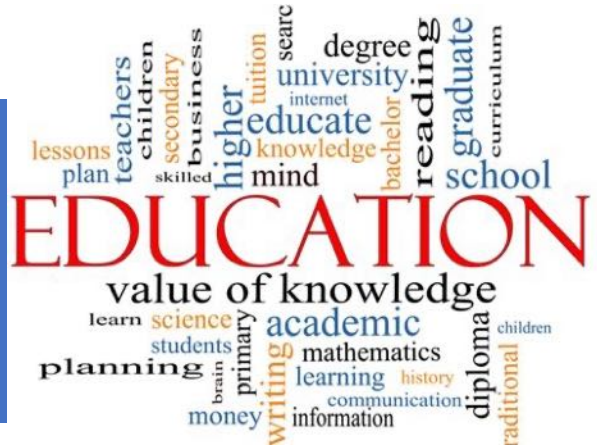
Prior to COVID-19 provider adoption of telehealth was slower than expected

The pandemic thrust providers into using telehealth, often without education or training

Lack of education and training has been cited as a barrier to telehealth adoption

Provider acceptance of telehealth is considered the key factor to the successful operation and continuation of telehealth services

Background



Lack of education may affect the quality of the telehealth encounter as well as the provider and patient experience

Provider satisfaction with telehealth may be correlated with the type and method of telehealth education received

Provider dissatisfaction with telehealth may affect utilization

Few institutions of higher learning for healthcare providers integrate telehealth into the curriculum and little is known about how practicing providers are educated on telehealth

Background

- Assessing the quality of telehealth (Chuo et al, 2020) includes evaluation of :
  - Health outcomes
  - Health delivery (quality and cost)
  - Individual provider/patient experience
  - Program implementation and KPIs
- DNP prepared APRNs are positioned well to evaluate and improve the quality of telehealth
- Determining the most effective methods of telehealth education to support provider adoption, improve the quality of the telehealth encounter and the patient-provider experience is key to enhancing telehealth care

Purpose

- To identify what type of telehealth education and telehealth education modalities practicing healthcare providers receive and to determine if there are differences in perceived usefulness, perceived ease of use (self-efficacy), perceived knowledge, satisfaction and frequency of actual use of telehealth based upon the type or modality of telehealth education received

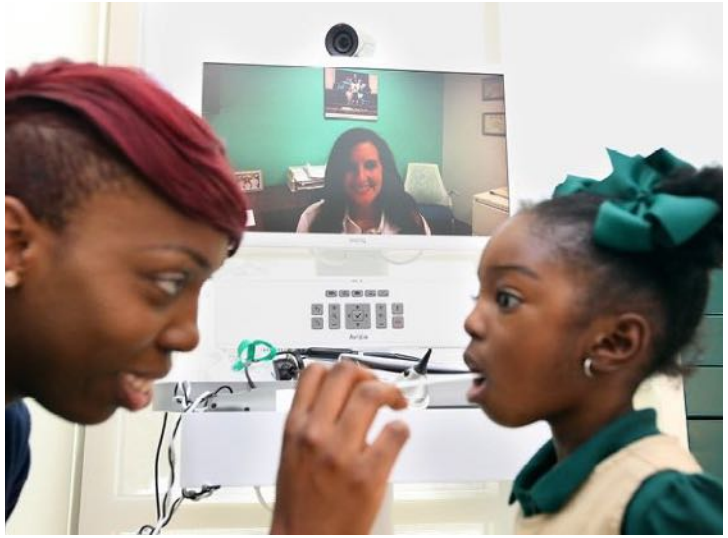


Image Credit: MUSC Health, used with permission.

Evidence-Based Research Questions

1. **What type of telehealth education do practicing providers receive prior to providing care virtually?**

Image Credit: Stockfresh

Evidence Based Research Questions

2. Is there a significant difference:

Type of Telehealth Education

No education

Formal education

Vendor driven education

On the spot orientation

Related to Telehealth Provider

Perceived usefulness

Self-efficacy

Perceived knowledge

Satisfaction

Actual use of telehealth

Type of Telehealth Education *Modality*

Didactics

Experiential simulation

Clinical/hands-on training

Telehealth project development

Written instructions only

Methods: Site

Conducted through Old Dominion University

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Methods: Sample

- Total of 224 participants
- Inclusion Criteria
  - Health care provider who has ever practiced via telehealth
- Exclusionary Criteria
  - Participants who were not healthcare providers
- Purposive sampling
  - National Consortium of Telehealth Resource Centers (NCTRCs)
  - Center for Telehealth and e-Health Law (CTeL)
  - School-Based Health Alliance (SBHA)
  - Supporting Pediatric Research on Outcomes and Utilization of Telehealth (SPROUT)

Image: Stockfresh, used with permission

Methods: Institutional Review Board (IRB)

- Old Dominion University IRB
  - Exempt
    - Anonymous
    - Minimal risk to subjects
    - Does not put subjects at risk of criminal or civil liability or of damaging their financial standing , employability, educational advancement or reputation
- American Academy of Pediatrics IRB
  - Exempt

Image: Stockfresh, used with permission

Methods: Sample

- *Demographics*

Total 224	N	Percentage
Age	Mean age 49 years	
Gender		
Male	46	20.5
Female	178	79.5
Education Level		
BS or Lower	19	8.5
Masters	126	56.3
Doctorate	79	35.3

Methods: Sample

- *Demographics*

	N	Percentage
Role		
APRN	47	21
MD/PA	45	20.1
Allied Health Professional	33	14.7
Behavioral Health Provider	86	38.4
Other	13	5.8
Practice Site		
Hospital	54	24.1
Community Health Center	48	21.4
School-Based Health	89	39.7
Private Practice	22	9.8
Other	11	4.9
Years Practicing Telehealth		
0 to 1 year	153	68.3
>1 year to 5 years	37	16.5
>5 years to 10 years	17	7.6
>10 years	17	7.6

Methods: Sample

- *Demographics*

Telehealth Education	N	Percent
Received Telehealth Education	160	71.4
Never Received Telehealth Education	64	28.6

Telehealth Education Type	N	Percent
Formal University Education	16	7.1
Vendor Education	82	36.6
On the Spot Education	98	43.8

Modality	N	Percent
Didactic	57	25.4
Experiential Simulation	48	21.4
Clinical Hands On Training	80	35.7
Telehealth Project Development	45	20.1
Written Instructions Only	67	29.9
Online Continuing Education Program	80	35.7

Methods: Tool

- Anonymous 63 item REDCap quantitative survey
- Perceived Usefulness and self-efficacy measured with Technology Acceptance Model (TAM)
- Researcher developed instrument used to assess perceived knowledge, satisfaction and frequency of actual use
  - Validated by five telehealth experts from three different states
    - Face and content validity
    - Readability
    - Ease of use

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Methods: Tool

- Reliability was established for each researcher developed scale using Cronbach's Alpha
  - Perceived Knowledge α=.972
  - Satisfaction α=.893
  - FAU α=.734

Methods: Tool

Demographics
Multiple Choice = 9

Telehealth Satisfaction
Likert Scale = 5
Free Text = 1

Telehealth Evaluation
Multiple Choice = 4

Telehealth Education
Multiple Choice =3
Free text=1

User Experience (Technology Acceptance Model)
Likert Scale =12

Perceived Telehealth Knowledge
Likert Scale=20
Multiple Choice=1

Telehealth Utilization
Likert Scale=6
Free Text =1

Methods: Procedure

- REDCap survey was distributed to practicing health care providers via email through the listservs of four national organizations
  - Reminder email sent 1 week later
  - Final reminder email sent 2 weeks later
- Introductory letter accompanied the survey
- Consent implied by completion of the survey
- Data stored securely in a password protected computer and data set

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Analysis and Results

- Data Collapsed to:
  - No telehealth education
  - Vendor education
  - On the spot education
  - Written instructions only
  - On-line education

Analysis and Results

Outcomes	None x (sd)	Vendor x (sd)	On the Spot x (sd)	Written x (sd)	On-line x (sd)
Usefulness	24.9 (10.5)	31.3 (8.8) *	29.3 (8.3) *	29.7 (8.9) *	30.5 (9) *
Self-Efficacy	26.7 (10.7)	31.6 (8.2) *	30.7 (8.2) *	31.1 (8.3) *	31.6 (8.4) *
Knowledge	57.3 (21.8)	72.9 (15.4) *	68.2 (17.3) *	70.6 (17.5) *	72.3 (17.1)*
Use	9.9 (4.1)	11.9 (4.8) *	11.3 (3.9) *	11.1 (4.5)	11.9 (4.4) *
Satisfaction	15.0 (5.4)	18.2 (4.1) *	17.6 (4.2) *	17.7 (4.6) *	18.5 (3.8) *

*Differences (*t-test)* between type education versus no education indicates ($p \leq .05$)

Results

Any education, regardless of the type of education, was significantly better than no education

Those that received education from vendors or online scored better in all categories than those that received written or on the spot education

Results

No significant difference between those that received education through written materials and those that had no education on their frequency of actual use of telehealth

The most effective methods of education for increasing a provider's score on perceived usefulness and perceived knowledge was vendor education and online education

Conclusions

- Providers that received telehealth education had significantly higher scores than those who had no education on perceived usefulness, self-efficacy, perceived knowledge, frequency of actual use and satisfaction with telehealth
- The most effective methods of education for increasing a provider's score on perceived usefulness and perceived knowledge was vendor education and online education
- It would be important to understand what characteristics of vendor or online education make them most effective
- Both methods require greater preparation for delivery and may potentially provide for more interaction between the learner and the equipment

Limitations

- COVID-19 survey fatigue
- Due to the pandemic, many providers may have been required to use telehealth. Actual utilization reported may not reflect true provider adoption
- Limited generalizability to all healthcare providers due to small number of participants from certain occupations
- Few participants had received telehealth education in their academic training, so this group was excluded from the analysis

Limitations

- The study did not assess years in practice.
- It is possible that some respondents had been in practice for many years and therefore attended academic programs prior to the expanded implementation of telehealth.
- This may explain the lack of inclusion of telehealth education in academic programs reported in the study.

Study Implications

Utilization &
Sustainability

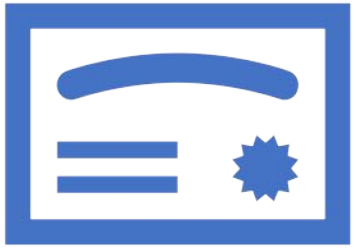
Quality

Experience

Study Implications

Education Models

Competencies



Certification

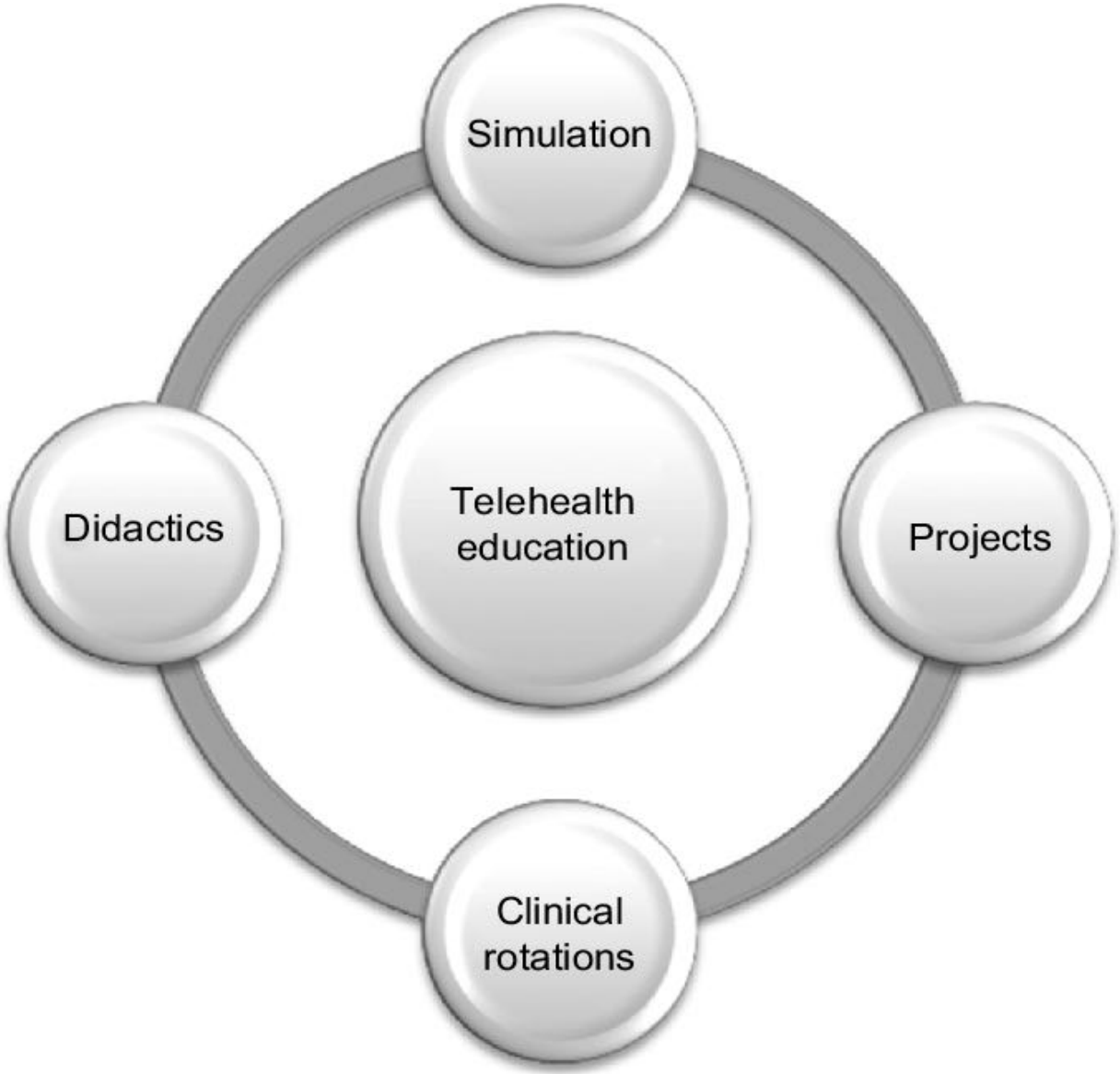
Future Directions

- Future exploration of the data will focus on the characteristics of the education that are most effective
  - What characteristics of vendor and online education make them most effective?
- Replication of the study with a larger sample size and a larger number of participants who have had formal education will allow for analysis of those who receive telehealth education in the academic setting

What Now?

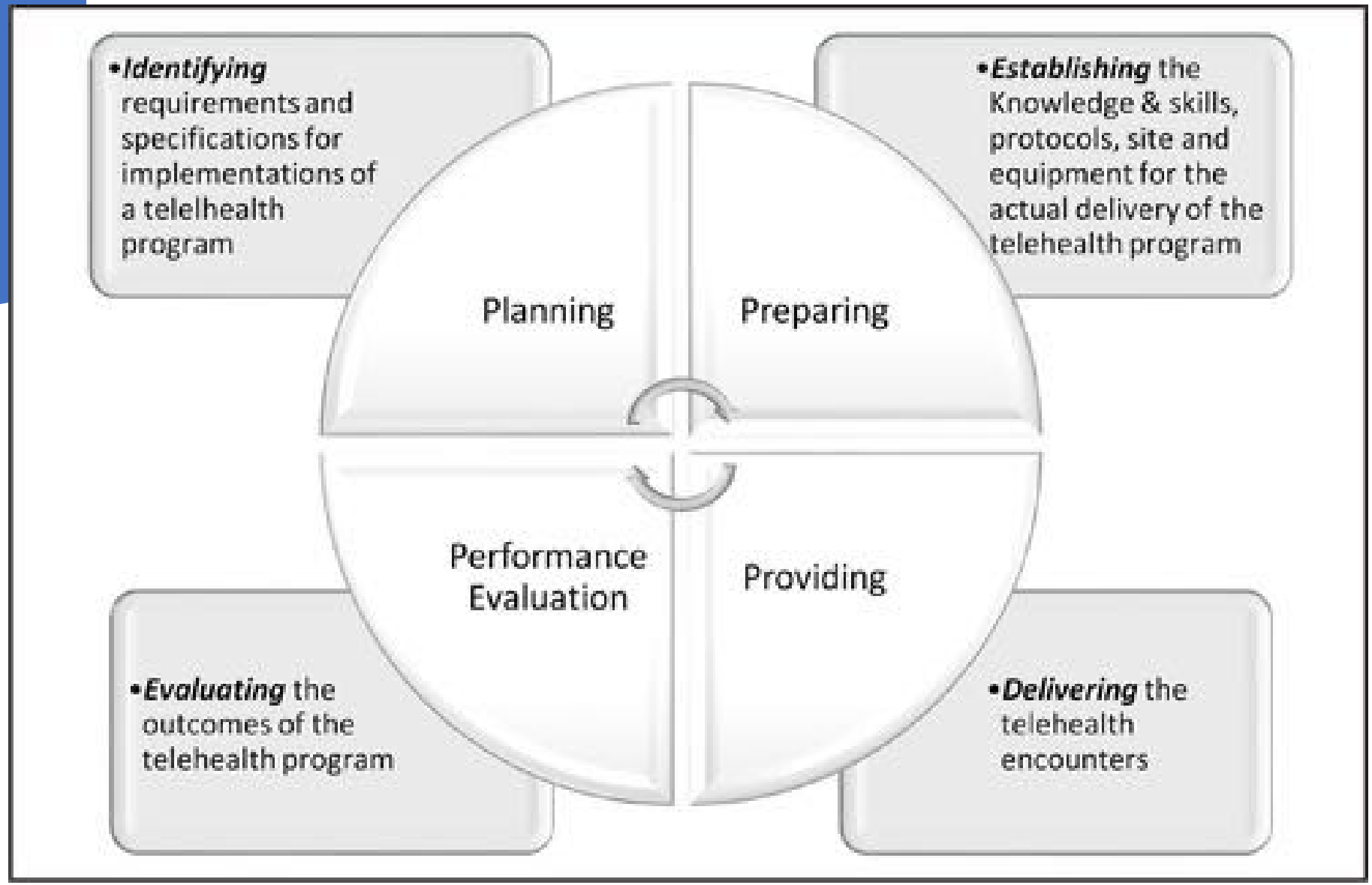
- DNP prepared APRNs need to take the lead
- Develop and implement telehealth education in both academic and practice settings to:
  - Ensure the quality of the telehealth encounter
  - Enhance the patient-provider experience
  - Ensure provider adoption
  - Increase utilization
  - Ensure sustainable programs

Best Practices for Telehealth Education



(Rutledge et al., 2017)

Four P's of Telehealth



(Rutledge et al., 2021)

The Essentials: Core Competencies for Professional Nursing Education

INCLUDE A SECTION ON INFORMATION TECHNOLOGY

DO NOT ESTABLISH SPECIFIC COMPETENCIES FOR APRN TELEHEALTH EDUCATION

DO NOT INCLUDE DETAILED GUIDELINES ON TELEHEALTH EDUCATION

Questions?

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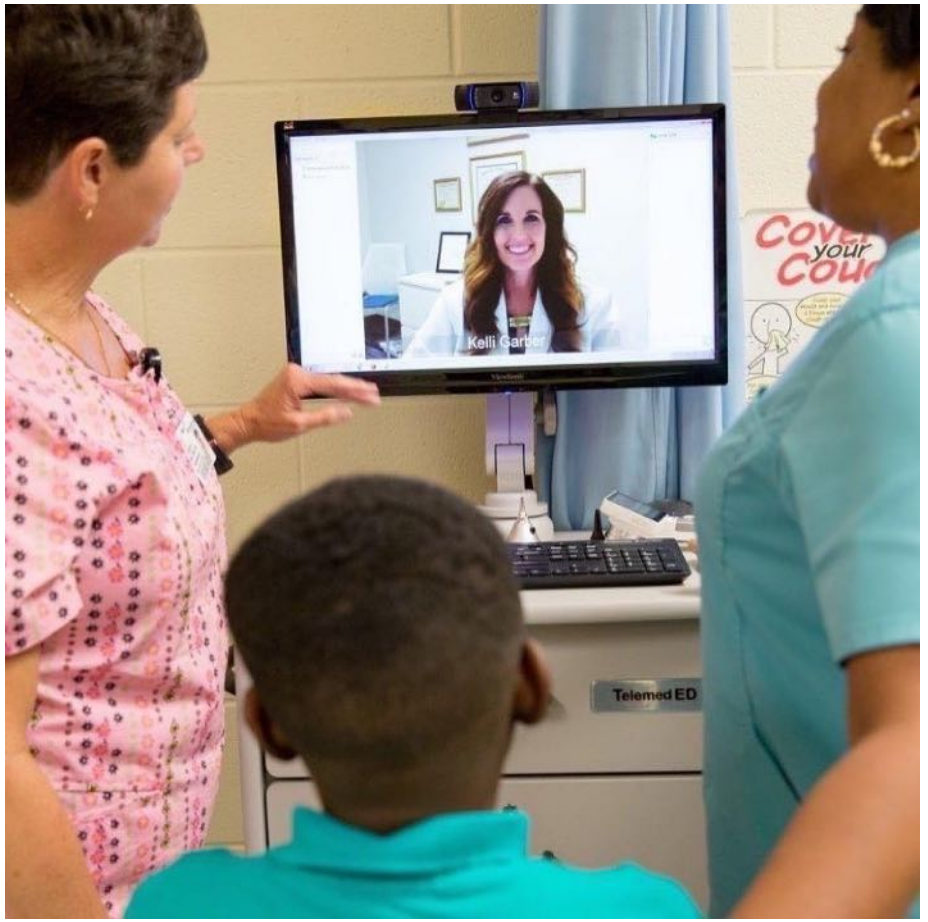

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