Transformation from Traditional Clinical Teaching and Learning to Virtual: Positive Experiences from a Sub-internship during COVID-19

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Background

- In March 2020, traditional medical education was disrupted due to the COVID-19 pandemic.
- Opportunities for patient-facing learning on wards and clinics became limited due to the need for conservation of personal protective equipment.
- A concurrent spike in demand for contactless healthcare led to a nationwide shift to telehealth appointments for an array of outpatient services.
- Little research has been conducted on best practices for inclusion of learners in patient care during the abrupt shift from on-site to virtual care.
- We transformed a traditional, 4-week sub-internship in pediatric and adolescent gynecology to a predominantly virtual rotation.

Objective

To describe our approach to inclusion of a medical student in patient care during a pandemic by converting a multi-site sub-internship to a primarily telehealth-focused rotation.

Methods

- Each week included three days of telemedicine.
- Student was assigned patients in advance to study the patients' conditions and prepare interview questions.
- Once connected virtually with the patient by utilizing the Haiku phone application, the student independently collected the history from the patient.
- After the history, the student left the encounter to formally present the patient to the attending on a separate virtual call.
- The attending physician and student rejoined the patient to communicate the differential diagnosis and plan.
- At the end of each day, the attending and student engaged in a feedback session to assure continuous improvement.
- One day per week the student participated in surgical cases on site with PPE provided by the hospital and protective eyewear provided by the school.
- The student participated in 4 half-days of didactics virtually with residents as well as weekly Pediatric Surgery Grand Rounds on the Zoom platform for relevant topics.

Results and Conclusions

- Our experience shows that including learners in telehealth visits during a clinical rotation offers a safe way to further medical student education during a pandemic.
- Providing guided practice in delivery of virtual health care offers learners skill development in an arena heretofore rarely utilized but now critical for a rising physician.
- In the future, conducting quantitative analysis and qualitative surveys with key stakeholders providing and receiving innovative virtual medical education could bolster the development of formal methods for teaching virtual patient care skills.

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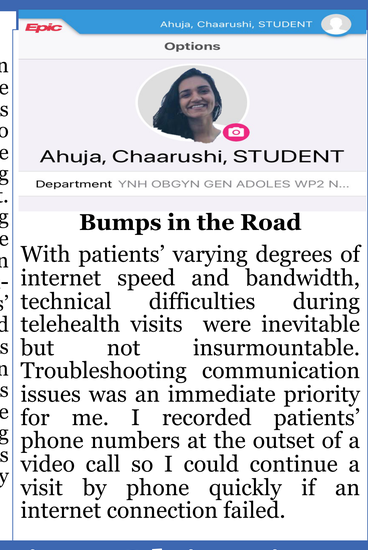
Student Perspective

Invaluable Skills Learned

While miniscule aspects of the conversation changed, I believe that learning telehealth gave me invaluable skills. I interviewed adolescents while they were at home and learned how to navigate assessing safety in situations where privacy was compromised. I practiced building trust without physical proximity to the patient. Basic principles we learn in school about building connections with patients while relying on subtle cues to guide our interactions are uprooted when students are thrust into telehealth visits. With in-person visits, I am able to pick up patients' restlessness or nervous behaviors and respond accordingly. Over a videocall, however, all that is seen are oft-pixelated facial reactions. This is even more challenging with young pediatric patients who may not want to sit still in front of the camera. Repeated guided practice of building rapport with patients without these physical cues quickly built my confidence in providing quality virtual care to patients.



Bumps in the Road

With patients' varying degrees of internet speed and bandwidth, technical difficulties during telehealth visits were inevitable but not insurmountable. Troubleshooting communication issues was an immediate priority for me. I recorded patients' phone numbers at the outset of a video call so I could continue a visit by phone quickly if an internet connection failed.

In cases of patients' audio failing, I kept paper and marker handy to communicate questions visually. Given the changing landscape with increased uptake in telehealth, I am glad to have a repertoire of skills for continuing the momentum of a virtual patient encounter.

My Goals

Personally, I wanted to be able to do independent histories and come up with differential diagnoses, assessment and management for routine pediatric and adolescent gynecology concerns. By the end, I accomplished those goals.

Learning Objectives

Rotation learning goals and objectives were met throughout the rotation with the combination of virtual visits, OR experiences, online didactics, and assigned reading.

Examples of objectives are listed below

1. Medical Knowledge

a. Identify the anatomic changes of the genital tract and breast that occur at different ages, including Tanner staging
b. Characterize the hormonal changes that occur as part of normal puberty
c. Summarize the principal disorders or conditions experienced by adolescent patients and the special implications for diagnosis and management of complex diseases as they pertain to adolescents (dysmenorrhea, pelvic pain, endometriosis, vulvovaginitis)
d. Formulate differential diagnoses and work up for postmenarchal females with abnormal uterine bleeding including work up for bleeding disorders
e. Diagnose, formulate differential diagnosis and treat primary and secondary amenorrhea
f. Characterize metabolic changes specific to Polycystic Ovary Syndrome, work up and diagnostic criteria of PCOS as well as formulate treatment plan
g. Describe appropriate follow up for a patient who has been treated for a pediatric gynecologic disorder
h. Map the components of provision of counseling and gynecologic care for teens with gender identity and sexual orientation differences

2. Patient Care (Clinical Skills)

A. Perform history-taking from a pediatric patient and one of her parents or caregiver
B. Apply laws of patient confidentiality during the provision of management services for an adolescent with a sexually transmitted infection
C. Apply laws of confidentiality while providing contraception to adolescents. Assess contraceptive needs of adolescent patients: counseling and administration in accordance with the state laws
D. Perform a focused physical examination appropriate for the patient's age, including:
   1. Demonstration of correct use of equipment
   2. Positioning
   3. Adjuncts to examination (utilizing parental support, Child's Life and Social Work services)
   4. Documentation of pertinent physical findings
E. Perform and/or interpret indicated tests to diagnose a specific gynecologic disorder in the pediatric patient:
   1. Microbiologic cultures of the lower genital tract
   2. Vaginoscopy (Surgical)
   3. Vaginal lavage
   4. Ultrasonography
   5. MRI

Patient Care (Clinical Skills) (Cont.)

F. Describe a forensic examination (including appropriate laboratory tests) for sexual abuse
   1. Describe mandated reporting law for sexual abuse in the physician's practice location
   2. Recognize clinical situations of sexual abuse requiring adherence with state specific regulations
   3. Apply the standards for diagnosis of sexual abuse and for maintenance of the chain of evidence
G. Perform and apply physical exam to characterize pediatric gynecologic disorders, including
   1. Tanner staging – breast and pubic hair
   2. Dermatologic exam (including but not limited to describing hirsutism, cystic acne, striea)
   3. Labial adhesions, prepubertal and postpubertal genital lichen sclerosus
H. Contrast current and forthcoming patient options for Preservation of Fertility in Females (Surgical)
   1. Embryo cryopreservation
   2. Oocyte cryopreservation
   3. Ovarian tissue cryopreservation
   4. Ovarian suppression/menstrual suppression
   5. Ovarian transposition
   6. Other considerations of fertility preservation options in females.

Attending Perspective

Logistical Obstacles

As faculty at a large academic department of Obstetrics and Gynecology, having a medical student is an integral part of my daily life. However, the COVID-19 pandemic created unique obstacles for providing patient care, as well as for teaching and learning. A major conundrum that crossed my mind was "How will I teach the medical student a differential without a proper physical exam?"

Overcoming Obstacles

Pediatric & Adolescent Gynecology, like many other ambulatory specialties, is uniquely positioned for telemedicine success as most patients do not need pelvic exams. Pediatric gynecologic exams are often limited to visual inspection of the perineum. In such cases, the patient or caregiver took photos of external genitalia from the comfort of their home and uploaded photos into a secure portal. Patients generally felt at ease doing so, and we were able to diagnose number of vulvar pathologies.

The Upside

The best moments of telehealth were when patients expressed gratitude for the opportunity to address their health concerns. By providing virtual patient care and including the student I was able to witness the student's progression in clinical knowledge, judgment and confidence. It also allowed me, despite the pandemic, to continue doing what I love: providing patient care and teaching medical students.