Supplemental Digital Appendix 1

Framework for the Observation of a Telemedicine Visit, From a COVID-19 Clinical Curricular Innovation at Harvard Medical School, 2020

This framework was developed by local faculty experts to help students to observe specific aspects of the clinical encounter to support the course learning objectives.

| Observation Elements          | Guiding Questions                                                                                                                                 |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Technical                     | • In what specific ways do you think the clinician-patient relationship may be different, if at all, in a virtual visit compared to a visit in person? |
|                               | • Were there aspects of the visit that were enhanced by the virtual modality? If so, in what ways?                                               |
|                               | • Were there aspects of care that were compromised due to lack of an in-person visit? If so, in what ways?                                        |
|                               | • What surprised you about the visit?                                                                                                           |
|                               | • What was most challenging about this visit? For the patient? For the clinician? For you as the student?                                         |
|                               | • Are there strategies or technologies that you think might improve telemedicine as a more useful modality in the future?                    |
|                               | • What else comes to mind?                                                                                                                      |
| Informed Consent              | • Aspects discussed                                                                                                                               |
| Confidentiality               | • Others involved in the visit                                                                                                                   |
|                               | • Privacy                                                                                                                                          |
| Communication                 | • Relationship building                                                                                                                         |
|                               | • Clarity                                                                                                                                          |
| Medical Decision Making       | • History and physical exam                                                                                                                     |
|                               | • Assessment and evaluation                                                                                                                     |
|                               | • Impact of the platform on decision making                                                                                                      |
Supplemental Digital Appendix 2

HMS Telemedicine Curriculum, Module 5: Small Group Discussion and Written Assignment

Final Assignment Themes/Challenges

For your group, please choose ONE of these challenges, or craft your own:

1. **Telemedicine and Relationships**

   Telehealth modalities have the potential to make it challenging for students to develop meaningful bonds with patients especially if they have never previously met. This could impact trust and the student’s ability to meaningfully contribute to clinical care. It may also alter the relationship between students and faculty preceptors/attendings. How do you think virtual patient care interactions impact students’ relationships with both patients and preceptors and what steps can be taken to mitigate any potentially negative effects?

2. **Telemedicine and Healthcare Disparities**

   Patient care through telemedicine virtual visits requires access to technology (communication devices, reliable internet, home health monitoring devices, etc.). Lack of access to these technologies impacts certain socioeconomic groups, those with vulnerable health status, homelessness and persons with disabilities more than others. Concerns about confidentiality and privacy may also impact some groups who may already be marginalized by the healthcare system. In what ways might we be able to positively impact these challenges at the individual level? At the systems level?

3. **Telemedicine and Medical Student Education**

   Much of clinical learning takes place at the bedside or clinic. With students physically removed from hospitals and clinics, students are missing face to face encounters with patients, clinic preceptors and ward attendings. This has the potential to negatively impact learning. Using telemedicine technologies, how can students be active participants in the patient care team? How can preceptors best interact with students and ambulatory patients to both allow for some student autonomy as well as create teaching opportunities?

4. **Telemedicine Best Practices**

   With the rapid adoption of telemedicine visits for ambulatory care, many physicians who have never previously had any training in virtual visits are quickly learning how to best conduct these types of visits. From what you have studied and experienced to date with telemedicine visits, what do you see as the most important priorities for establishing best practices? What care system supports (workflows, personnel, equipment, etc.) do you think faculty need to optimize the practice of medicine with telehealth modalities? What role can students take to support best practices? What technologies might be used (such as patient monitoring devices) to support patient care?
5. Telemedicine and the Future

Prior to COVID-19 telehealth modalities were gradually increasing in popularity and slowly gaining traction. With the sudden explosion of telemedicine to mitigate the risks associated with the current pandemic, telemedicine has experienced precipitous growth. As a result of this rapid adoption of telemedicine, most experts believe that it will continue to be a very important and significant adjunct to face to face visits into the future even after the pandemic. What role do you foresee for telemedicine in your future careers and how do you think medical schools should prepare students? How do you recommend telemedicine be taught and where in the curriculum would you place it?

Student Final Assignment Topics (n, %) and selected examples of student responses

Medical Education (6, 9.4%)
- Potential to increase patient/provider continuity
- Video feedback with preceptors on virtual physical exam
- Conducting virtual home visit training, triage for in person visit
- Creating time for student with patient and with preceptor

Relationships (11, 17.2%)
- Building student-preceptor relationships
- Generational differences between ‘digital natives’ and older preceptors
- Importance of observation of the home environment
- Increased involvement of patients’ caregivers
- Creating a trusting environment on screen, demonstrate care and competence

Other (6, 9.4%)
- Improving no show rates
- School nurses for pediatric telemedicine visits
- Palliative care via telemedicine

Best Practices (12, 18.8%)
- Involving interprofessional team
- Patient guidelines and instructions
- At Home Telemedicine Tech kit
- Communication: Empathy and Confidentiality
- Triage protocols for triggering in person visits
- Screen sharing virtual wipe board for patient education

Disparities (21, 32.8%)
- Patients with limited English proficiency
- Telehealth for homeless patients, immigrant population
- Rural, indigenous patients and the ‘digital divide’
- Assessing telehealth access/literacy at hospital discharge
- Device donation, sharing or lending programs
- Seeing patient’s home environment
- Real time closed captioning
- Finding safety and privacy with electronic surveys, chats
- Unique needs of geriatric patients, victims of interpersonal violence
- Regulations for treatment of opioid use disorder
- Need to enhance broadband nationally

Future Trends (8, 12.5%)
- Medical training on explaining and interpreting physical exam maneuvers remotely
- Electronic stethoscopes
- Canvassers to help with visits
- Virtual huddles for interprofessional teams and learners