An Innovative, Longitudinal Approach to Teaching Telemedicine Competencies to Clinical Learners

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Disclosures

• This project is funded by HRSA grant
• Ryan Palmer and Anna Wickham are consultants for Kennedy & Company Educational Strategies, LLC.
How many have implemented or are planning on implementing telemedicine training in your own programs?
Session Objectives

• *Explain* how AAMC competencies can be used by educators to address gaps in medical education training to and meet growing clinical need.

• *Describe* the educational innovations this team used to address ten core AAMC competencies and evaluate teaching effectiveness and learner progress.

• *Integrate* at least one concept or method from today into your telemedicine curriculum at your institution.
# AAMC Competencies

<table>
<thead>
<tr>
<th>AAMC Competency Domain</th>
<th>AAMC Telehealth Competencies (paraphrased for brevity)</th>
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</thead>
</table>
| **Patient safety and appropriate use of telehealth** | • Explain the uses, benefits, and limitations of telehealth  
• Integrate telehealth technologies into care encounters  
• Explain the role and responsibilities of telehealth team members  
• Describe when and how to escalate a care encounter |
| **Data collection and assessment via telehealth** | • Obtain a history and exam during a real or simulated encounter  
• Explain the importance of patient generated data to telecare |
| **Communication via telehealth** | • Develop an effective rapport with a patient during a virtual encounter  
• Evaluate and optimize the virtual exam room  
• Explain how to integrate patient social supports into the care encounter |
| **Ethical practices and legal requirements for telehealth** | • Describe the legal, privacy, and regulatory issues governing telehealth  
• List the components of a telemedicine informed consent  
• Describe the professional requirements and ethical challenges  
• Describe the potential conflicts of interest that can arise with telehealth |
| **Technology for telehealth** | • Describe the equipment required for telemedicine and virtual visits  
• Describe the technical limitations and minimum infrastructure requirements  
• Describe the potential technology failures and mitigation strategies |
| **Access and equity in telehealth** | • Explain the implicit and explicit biases that can affect the quality of telehealth  
• Explain how telehealth can impact healthcare equity and describe ways to mitigate gaps in care  
• Assess patients’ needs, capabilities, barriers, and culture when considering telehealth |

6 Domains, 20 competencies, 3 tiers
Background: Course & Funding

Health Systems Science in Practice (HSSP) Course for MS3 and PA2

Tribal Rural Underserved Oklahomans (TRU-OK) grant from HRSA

Telemedicine technology

Policies and governance

Webside manner

Virtual exam

Digital workflow

Patient safety

Telemedicine Training Program
Telemedicine Training Program

- Telemedicine technology
- Policies and governance
- Webside manner
- Virtual exam
- Digital workflow
- Patient safety
Telehealth Curriculum

• Telehealth sessions based on TeleOSCE simulation with standardized patients
  • 3 TeleOSCE cross-walking medicine and telemedicine topics
    • Hypertension + webpage manner + technology failures
    • Mental health + workflow + patient safety
    • Medication reconciliation + team care + social determinants

• 3 Teleskills stations teaching exam techniques
  • Vital signs and ear-nose-throat exam
  • Skin exam and store-and-forward technology
  • Musculoskeletal exam and concussion assessment

• 10 AAMC competencies repeated over simulations
  • Selected based on relevance to learner and course objectives
  • Competencies available in appendix
TeleOSCE case: Format & Scenario

- Mental health and patient safety
- Standardized patient
- Assessment of depression and suicidal ideation
  - Interpret data
    - Review past PHQ-9
    - Administer C-SSR
  - Make a diagnosis
  - Recommend treatment
- Webside manner
  - Camera adjustments
  - Empathy
Project and Evaluation

Research Question: Is formative telehealth simulation an effective method to improve telehealth competence for medical/PA students?

H1: Most learners (over 60%) will improve their competence in the 10 identified core AAMC competencies over the year by participating in the TeleOSCE and TeleSkills lab activities

- Entrustment scales on each assessment
  - 3-point scale, modeled on CEPAER (2 point scale) and OHSU (3 point scale)
  - Not yet entrustable, approaching entrustment, entrustable
- Competencies repeated over each simulation to track progress
  - TeleOSCE- 8 unique competencies
  - TeleSkills -2 unique competencies
  - Two crossover competencies for both
Project and Evaluation

H2: Most learners (over 60%) will find the TeleOSCE and TeleSkills a satisfactory method for learning telehealth competencies.
  • Tool: Learner satisfaction survey at end of each simulation

H3: Learner’s knowledge of, attitude towards, and confidence in telemedicine will significantly improve over the year.
  • Tool: “OHSU” survey
    • Published survey administered (1) before; (2) during; (3) after curriculum.
    • Matched learners longitudinally
Evaluation Dashboard: Competency Progression

Note: “Sally Smith” is a pseudonym
Evaluation Dashboard: Learner Satisfaction

TeleSim Satisfaction by Question

<table>
<thead>
<tr>
<th>Session</th>
<th>Q17</th>
<th>Q18</th>
<th>Q19</th>
<th>Q20</th>
<th>Q21</th>
<th>Q22</th>
<th>Q23</th>
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Evaluation Dashboard: Student Perceptions around Telehealth

OHSU Survey Results Over Time

<table>
<thead>
<tr>
<th>Date</th>
<th>Sim Topic</th>
<th>Category</th>
<th>Question</th>
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<tbody>
<tr>
<td>16-Jul-22</td>
<td>Hypertension/Tech Failure</td>
<td>Knowledge of</td>
<td>I have a good general understanding of hypertension and technology</td>
</tr>
<tr>
<td>21-Jan-22</td>
<td>Susceptibility/Patient Safety</td>
<td>Knowledge of</td>
<td>I have a good understanding of patient safety</td>
</tr>
<tr>
<td>10-Jun-22</td>
<td>Med Rec</td>
<td>Knowledge of</td>
<td>I am familiar with the types of examinations</td>
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<tr>
<td></td>
<td></td>
<td>Confidence in</td>
<td>I feel comfortable speaking in front of the video chat</td>
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<tr>
<td></td>
<td></td>
<td>Confidence in</td>
<td>I feel equally prepared to present on the video chat</td>
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<tr>
<td></td>
<td></td>
<td>Confidence in</td>
<td>I would be able to establish rapport on the video chat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Attitude of</td>
<td>I think telemedicine is a good alternative</td>
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<tr>
<td></td>
<td></td>
<td>Attitude of</td>
<td>I think telemedicine will help doctors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Attitude of</td>
<td>I think telemedicine will help decrease</td>
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<tr>
<td></td>
<td></td>
<td>Attitude of</td>
<td>I will likely use telemedicine in my practice</td>
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<tr>
<td></td>
<td></td>
<td>Confidence in</td>
<td>At the start of the visit, explain to the patient the telemedicine</td>
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<tr>
<td></td>
<td></td>
<td>Confidence in</td>
<td>Take a patient history via telemed</td>
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<tr>
<td></td>
<td></td>
<td>Confidence in</td>
<td>Conduct all or some components</td>
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<td></td>
<td></td>
<td>Confidence in</td>
<td>Adjust a telemedicine camera to n</td>
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<td></td>
<td>Confidence in</td>
<td>Provide counseling to the patient</td>
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<tr>
<td></td>
<td></td>
<td>Confidence in</td>
<td>Troubleshoot poor performance in n</td>
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<tr>
<td></td>
<td></td>
<td>Confidence in</td>
<td>Determine what scope of care is appropriate</td>
</tr>
</tbody>
</table>

Rating Scale

1. Strongly Agree/Very Confident
2. Agree/Somewhat Confident
3. Unsure/Neutral
4. Disagree/Not Very Confident
5. Strongly Disagree/Extremely Unco
Next Steps and Parting Thoughts

- Dashboard just up and running, preliminary outcomes encouraging
- 1 more TeleOSCE this academic year
  - Medication safety + social determinants of health
- 1 summative TeleOSCE testing station end of year
- 1 additional TeleOSCE in development
  - Virtual teams + domestic violence
- 2 additional TeleSkills in development
  - Cardiopulmonary exam
  - Abdominal exam
- Multi-institutional collaboration for AY 22-23
Thank You

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## Competencies Used in Curriculum

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<tr>
<td>Works with diverse patients and caregivers to determine access to technology to incorporate telehealth into patient care during real or simulated encounters.</td>
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<tr>
<td>Describes when patient safety is at risk, including when and how to escalate care during a telehealth encounter.</td>
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<tr>
<td>Defines how telehealth can affect health equity and mitigate or amplify gaps in access to care.</td>
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<tr>
<td>Develops an effective rapport with patients via real or simulated video visits, attending to eye contact, tone, body language, and non-verbal cues.</td>
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<tr>
<td>Assesses the environment during real or simulated video visits, such as attending to disruptions related to privacy, lighting, sound, and attire.</td>
</tr>
<tr>
<td>Obtains history (from patient, family, and/or caregiver) during a real or simulated telehealth encounter.</td>
</tr>
<tr>
<td>Conducts appropriate physical examination or collects relevant data on clinical status during a real or simulated telehealth encounter, including guiding the patient and/or tele-presenter.</td>
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<td>Explains equipment required for conducting care via telehealth at both originating and distant sites.</td>
</tr>
<tr>
<td>Explains the risk of technology failures and the need to respond to them.</td>
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<tr>
<td>Demonstrates knowledge of ethical challenges and professional requirements in telehealth.</td>
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</tbody>
</table>
References

- Telehealth Competencies Across the Learning Continuum
- Core Entrustable Professional Activities for Entering Residency
  - For example of competency scale
  - Access to “OHSU Survey” and information on TeleOSCE approach