From Bedside to Webside: Telemedicine for Health Educators

Blake Lesselroth, MD MBI FACP
Department of Medical Informatics

Kristin Rodriguez, MPH LSSGB
Director, OU-SCM Simulation Center

Katrina Meyers, MSW LMSW
Manager, OU-OKC Simulation Center

Lin Goldston, MHA CPHQ
Director, OU-OKC Simulation Center

Margaret Robinson, MEd
Assistant Director, Office of Interdisciplinary Programs
Learning Objectives

✔ Define telemedicine, telehealth, and mHealth

✔ Describe nationwide trends in telemedicine education

✔ Compare bedside manner to “webside” manner

✔ Describe strategies to complete an online physical exam

✔ List stakeholders and strategies to teach telemedicine at OU
Telemedicine and Telehealth

Definitions:
- Telemedicine: Health information technology for direct care delivery over a distance.
- Telehealth: Health information technology used over a distance.
- eHealth: Health information technology in any context.
- mHealth: Health information technology deployed in a mobile environment.

Activity:
- Telemedicine: Simulation centers, interprofessionalism.
- Telehealth: Educational initiatives, best practices.
- eHealth: Activity.
- mHealth: Activity.

Conclusions:
## Telemedicine and Telehealth

**Telehealth**: remote healthcare services including non-clinical services; (1) provider training; (2) administrative meetings; (3) continuing medical education; (4) supply-chain tracking; (5) monitoring\(^1,2\)

**Telemedicine**: remote diagnosis and treatment of patients by means of telecommunications technology; (1) real-time appointments; (2) store-and-forward messaging; (3) diagnostic outsourcing; (4) chronic illness management; (5) acute care monitoring\(^1,3-4\)

**mHealth**: health apps accessed using mobile technology; considered a subcategory of *telehealth* and *telemedicine*

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1. Hersh et al, Health Systems Science, 2017
2. Thomas et al, Telemedicine eCoding Guide, 2019
Community eHealth Ecosystem

- mHealth
- Virtual Health
- Consumer eHealth

Learning Objectives
Definitions
Ecosystem
Trends
Activity
Best practices
Educational initiatives
Activity
Simulation centers
Inter-professionalism
Activity
Conclusions
Pandemic Impact on Trends

• 5% of encounters at Stanford Primary Care were virtual in 2019; by spring 2020, 90% of encounters (232 visits/day) were virtual\(^1\)

• American Well (AmWell) reported telemedicine visits up 2000% in March 2020; usage of their app up 158%\(^2\)

• VA reported a 200% jump in telemedicine visits for 2020; in 2019, 900,000 veterans used Video Connect App\(^4\)

• University of New Mexico project ECHO and partners sponsored Telemedicine Hack peer-to-peer learning

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1. Artandi et al, NEJM Catalyst, 2020
2. Schoenberg, AmWell, 2020
3. Eddy, HIMSS, 2019
Trends in Telemedicine Education

<table>
<thead>
<tr>
<th>Year</th>
<th>Pre-Clerkship</th>
<th>Clerkship</th>
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<tbody>
<tr>
<td>2013-2014</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>2014-2015</td>
<td>25</td>
<td>35</td>
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<td>2015-2016</td>
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<tr>
<td>2016-2017</td>
<td>35</td>
<td>45</td>
</tr>
<tr>
<td>2017-2018</td>
<td>40</td>
<td>50</td>
</tr>
</tbody>
</table>

n = total number of schools including telemedicine
N= total number of schools participating in survey

1. AAMC, 2020
2. Waseh, JMIR Med, Ed 2019
Trends in Telemedicine Education

Proportion of US medical schools with telemedicine curriculum by state
Data compiled from LCME Annual Medical School Questionnaire 2017

1. LCME, 2017
2. Waseh, JMIR Med, Ed 2019
Topics in Telemedicine Education
# Activity: Online Resources

<table>
<thead>
<tr>
<th>Type</th>
<th>Sponsor</th>
<th>Description</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>National Consortium of Telehealth Resource Centers</td>
<td>A consortium of 12 regional and 2 national centers funded by HRSA; huge list of resources</td>
<td><a href="https://www.telehealthresourcecenter.org/">https://www.telehealthresourcecenter.org/</a></td>
</tr>
<tr>
<td></td>
<td>Center for Connected Health Policy</td>
<td>A clearinghouse of policies and regulations for telehealth administration</td>
<td><a href="https://www.cchpca.org/">https://www.cchpca.org/</a></td>
</tr>
<tr>
<td>Educational</td>
<td>TRAIN</td>
<td>Includes an online repository of Telemedicine Hacks Produced by University of New Mexico</td>
<td><a href="https://www.train.org/main/home">https://www.train.org/main/home</a></td>
</tr>
<tr>
<td></td>
<td>American Telehealth Association</td>
<td>A non-profit association that host a “learning center” with guidelines and toolkits</td>
<td><a href="https://www.americantelemed.org/resource/">https://www.americantelemed.org/resource/</a> * (for demonstration)</td>
</tr>
<tr>
<td></td>
<td>AAMC</td>
<td>A springboard site for educational resources in telemedicine (including MedEdPortal)</td>
<td><a href="https://www.aamc.org/data-reports/curriculum-reports/interactive-data/content-documentation-required-courses-and-elective-courses">https://www.aamc.org/data-reports/curriculum-reports/interactive-data/content-documentation-required-courses-and-elective-courses</a></td>
</tr>
<tr>
<td></td>
<td>Telehealth Village</td>
<td>Accredited online educational site sponsored by regional resource center and UVA</td>
<td><a href="https://telehealthvillage.com/home.aspx">https://telehealthvillage.com/home.aspx</a></td>
</tr>
<tr>
<td></td>
<td>Project ECHO</td>
<td>An innovation hub based at University of New Mexico with many learning programs</td>
<td><a href="https://hsc.unm.edu/echo/institute-programs/">https://hsc.unm.edu/echo/institute-programs/</a></td>
</tr>
<tr>
<td>Etiquette &amp; Exams</td>
<td>Old Dominion University</td>
<td>Online playlist of communication topics</td>
<td><a href="https://www.youtube.com/results?search_query=old+dominion+telehealth+etiquette+playlist">https://www.youtube.com/results?search_query=old+dominion+telehealth+etiquette+playlist</a></td>
</tr>
<tr>
<td></td>
<td>Old Dominion University</td>
<td>Online playlist of exam examples by organ system</td>
<td><a href="https://www.youtube.com/playlist?list=PLM0VF0yZsE6eRiWVQ-RwkmgruaF2DAON">https://www.youtube.com/playlist?list=PLM0VF0yZsE6eRiWVQ-RwkmgruaF2DAON</a> * (for demonstration)</td>
</tr>
<tr>
<td></td>
<td>Thomas Jefferson University</td>
<td>AMA PRA Cat I CME on telemedicine physical exam</td>
<td><a href="https://cme.jefferson.edu/content/telemedicine-providers-conducting-effective-telehealth-physical-exam">https://cme.jefferson.edu/content/telemedicine-providers-conducting-effective-telehealth-physical-exam</a></td>
</tr>
</tbody>
</table>
Telemedicine Best Practices: Basics

Organizational priorities
✔ Technology
✔ Security
✔ Reimbursement
✔ Training

Clinician priorities
✔ Communication
✔ Workflow
✔ Autonomy
✔ Safety

American Telemedicine Association, 2013
Best Practices: Communication

✔ Professional attire
✔ Simple background
✔ Proper lighting, quiet space
✔ HIPAA compliant space
✔ Two to three feet away from camera
✔ Eye contact; look into camera
✔ Headphones/headset on hand
✔ Think-aloud, especially if off-screen

American Telemedicine Association, 2013
Best Practices: Workflow

- Use a script
- Verify patient identity and your credentials
- Confirm contact information and call-back protocol
- Expectations regarding contact between session
- Verify patient location to
  1. comply with licensing laws;
  2. for emergencies and patient safety;
  3. protect privacy and confidentiality

American Telemedicine Association, 2013
Best Practices: Safety

✔ Be familiar with originating site emergency protocols

✔ **Emergency plan** with local emergency personnel, phone numbers, and available resources

✔ Consider engaging a family member or a community member (called a “Patient Support Person”)

✔ Be aware of any transportation limitations and have a plan

American Telemedicine Association, 2013
Telemedicine laws require informed consent similar to in-person care; information specific to videoconferencing.

Key topics include:

1. confidentiality risks inherent with technology;
2. plans and protocols;
3. processes for storing documentation and data;
4. expectations for billing and reimbursement;
5. conditions for an in-person referral.
Virtual Physical Exam

Obtaining Data
Videoconferencing

With Peripherals
- Procedures
- Diagnosis
- Treatments

Without Peripherals
- Mental health
- Education
- Follow up
- Social determinants
Virtual Physical Exam

**Philosophy**
- Virtual exams are an effectiveness and implementation issue
- The appropriate comparator is the alternative
- Might get more information than an office visit (context)
- Focus upon education and health literacy

**Practice**
- Direct observation at different camera angles
- Recruit patients and family members to assist
- Exam scripts and EMR templates specific to diseases and problem representation
- If an originating site, assistant with extender devices

Joshi, JeffConnect Program, Amwell 2020
Virtual Physical Exam

- Vitals: pulse, respiratory rate, blood pressure, temperature
- ENT: smartphone – head, neck, oropharynx, dental pain, lean forward
- Abd: palpating, jumping in place, supine positioning, rebound
- Pulm: breathing rate, inspiratory/expiratory time, peak flow, inhaler
- Card: edema check, neck veins
- Neuro: flashlight – cranial nerve exam, grip strength, standing and gait
- Msk: joint inspection, joint range of motion, provocative manoeuvres
- Skin: visual inspection, blanching, flaking, tenting
- Psych: memory, behavior, mental status
Local Educational Initiatives

SIMULATIONS
A library of high-fidelity simulations with standardized patients designed to teach interdisciplinary care.

SKILLS WORKSHOPS
Incorporation of skills labs in Health Systems Science & Practice and Student Academy.

INTENSIVES & ROTATIONS
Opportunities to participate in electives, selectives, sub-internships, and other rotations to gain advanced training and experience.

COMMUNITY MEDICINE
Content that addresses the Community Medicine educational program objectives and addresses the social determinants of health.

COMMUNITY PARTNERSHIPS
Community partnerships and intercollegiate collaboration to leverage the knowledge and expertise of other programs.

TELEMEDICINE EDUCATIONAL PROGRAM

DIDACTICS
A series of modules that cover fundamentals, technology skills, communication techniques, and implementation strategies.

INFRASTRUCTURE
Structures that engage stakeholders and support continuous quality improvement. This includes a curriculum committee, an educational evaluation plan, and a research agenda.

CLINICAL CLERKSHIPS
Hands-on practice opportunities. This may include dedicated Bedlam virtual care clinics and integration of students into specialty clinic workflows.
Virtual Physical Exam

How do we teach and assess the physical exam?

Auscultation-Posterior Chest

Diaphragm Only.

Breath Deep In and Out Through Mouth.

2 Levels on Each Side, 4 locations

Compare right and left
Local Educational Initiatives

- Pivot from face-to-face encounters to virtual encounters...in about 2 weeks
- Tele-encounters are here to stay -- curricular modifications
- Opportunities to collaborate and deliver across geographic distances
- Opportunities for development of novel simulations
Activity: Sample Simulation

Demonstration of virtual physical exam components
  ○ Switch to VLC player

Musculoskeletal exams can be performed as well!
Simulation Centers

✔ Simulation centers exist on all three campuses
  ○ Tulsa: OU-Tulsa Simulation Center, Schusterman Center
  ○ OKC: Clinical Skills Education and Testing Center (CSETC), Garrison Tower
  ○ Norman: School of Social Work Simulation Center, Anne and Henry Zarrow School of Social Work

✔ Collectively, we serve:
  ○ Medicine, PA, Nursing, Social Work, Allied Health, Dentistry, Pharmacy, Education, Haruv USA, OU Physicians-Tulsa, external agencies
Inter-professional Education: IPE Virtual Simulation Activities

✔ SAME/FAME - Center for Learning & Leadership / UCEDD Model for community-informed simulations

✔ Nursing Mental Health Simulations - virtual Fall 2020 Opportunities for IPE involvement
  SBIRT, Depression (Risk Assessment), Psychosis, Pediatric Anxiety, Dementia - Role of the Caregiver

✔ Trauma Simulation - virtual Summer 2020 Collaboration between:
  • Office of Diversity Equity & Inclusion (ODEI)
    High School students interested in Health Professions - TRU-OK community - tribal, rural, underserved communities of Oklahoma
  • OUHSC PA program
    PA Learners
  • Inter-professional Education (IPE), Office of Interdisciplinary Programs (OIP)
  • Clinical Skills Education & Testing Center (CSETC)
Inter-professional Education

Trauma Simulation Teaser:
Simulation Looks Different Virtually

✔ Short skills practice sessions - recorded or not recorded
✔ Longer in-depth sessions (Social Work, CAMS) - recorded or not recorded
✔ Use of recordings and/or presentations with larger groups remotely (Trauma Simulation)
✔ IPE Group Simulations
  • Virtual Delivery
  • What are best practices?
    o What does Telehealth look like for each profession and together?
    o What is the Zoom Etiquette with a large IPE Learner group?
    o Pre-session planning? Post-session planning/follow up?
Opportunities for Inclusion in IPE Simulation

✔ Consider broad case ideas to be inclusive of other professions
  • Build out your Learning Objectives (3) & Learner Tasks (3)
    o Learning Objectives: What are you wanting them to gain educationally from this simulation?
    o Learner Tasks: What should they do or achieve during the simulation i.e. where to go/what to consider when engaging the SP?

✔ Connect with your Colleagues in other programs to develop cases together
  • Existing organic connections - who do you present with, communicate with, etc.? 

✔ Contact IPE
  • Contact us via e-mail and we can provide support with case develop
  • We are here to encourage case development and offer support
Conclusions

• Telehealth, telemedicine, and mHealth are rapidly changing the care delivery ecosystem

• Climate characterized by new skills and new expectations; communication and exams

• OU needs to teach, model, and evaluate new competencies

• Chance to experiment, learn, and contribute to the future landscape in health education