From Bedside to Webside:

Telemedicine for Health Educators

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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

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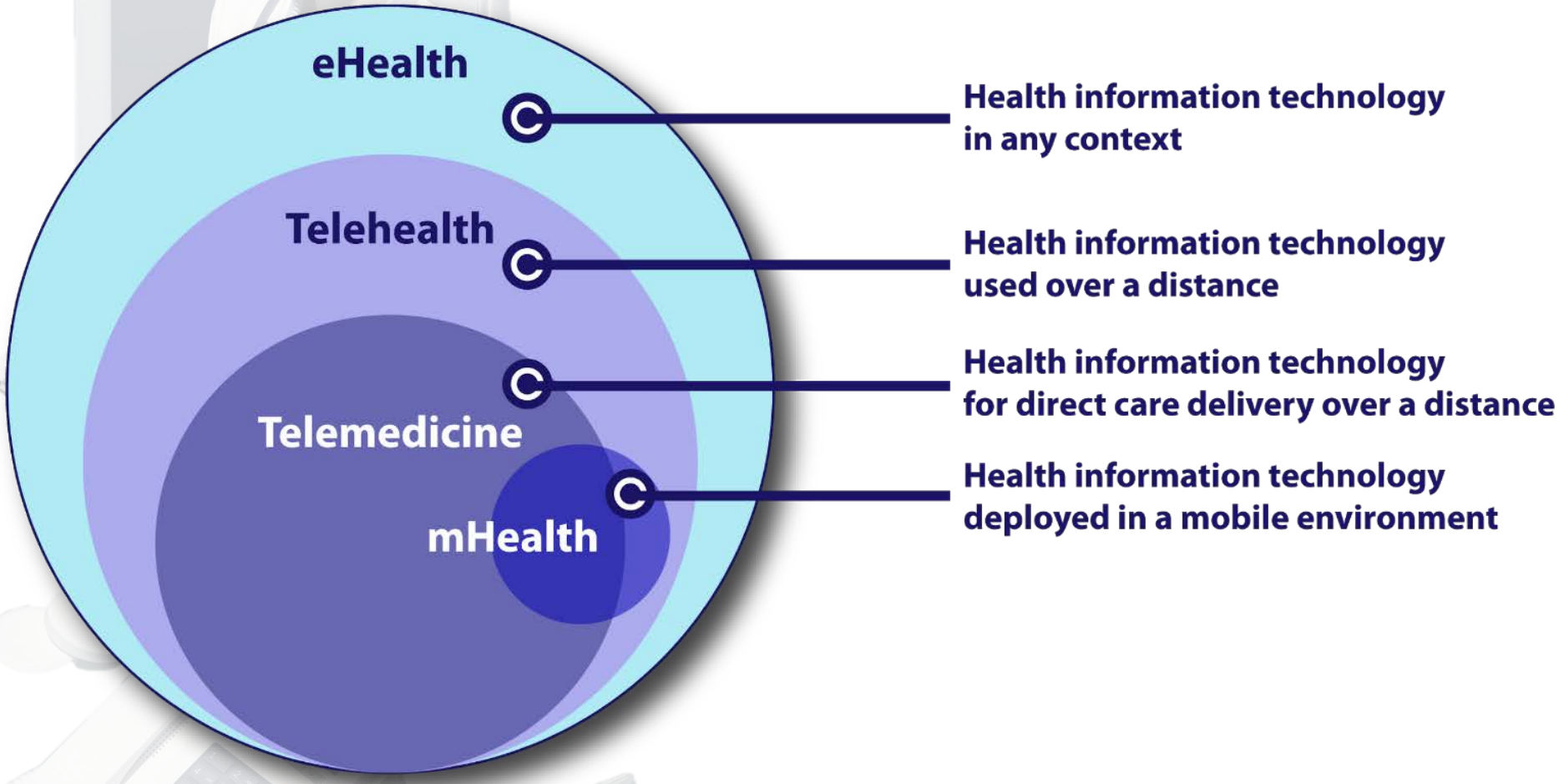
Telemedicine and Telehealth



van Dyk – Int J Env Res Pub Health, 2014

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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**

1. Hersh et al, Health Systems Science, 2017
2. Thomas et al, Telemedicine eCoding Guide, 2019
3. Payne, Clin Info Board Rev, 2014
4. American Telemedicine Association, 2012

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Community eHealth Ecosystem

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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

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

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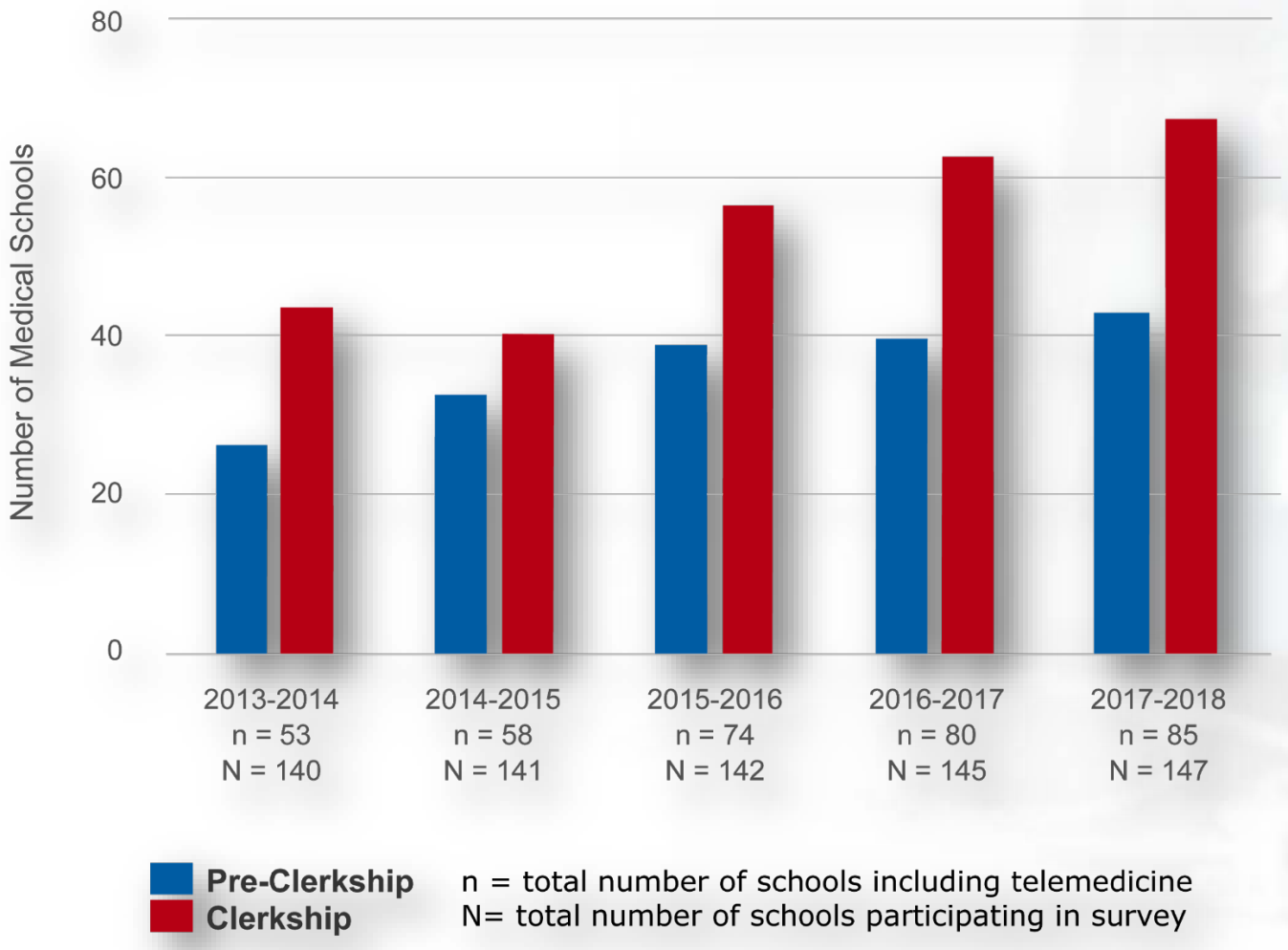
Trends in Telemedicine Education



1. AAMC, 2020
2. Waseh, JMIR Med, Ed 2019

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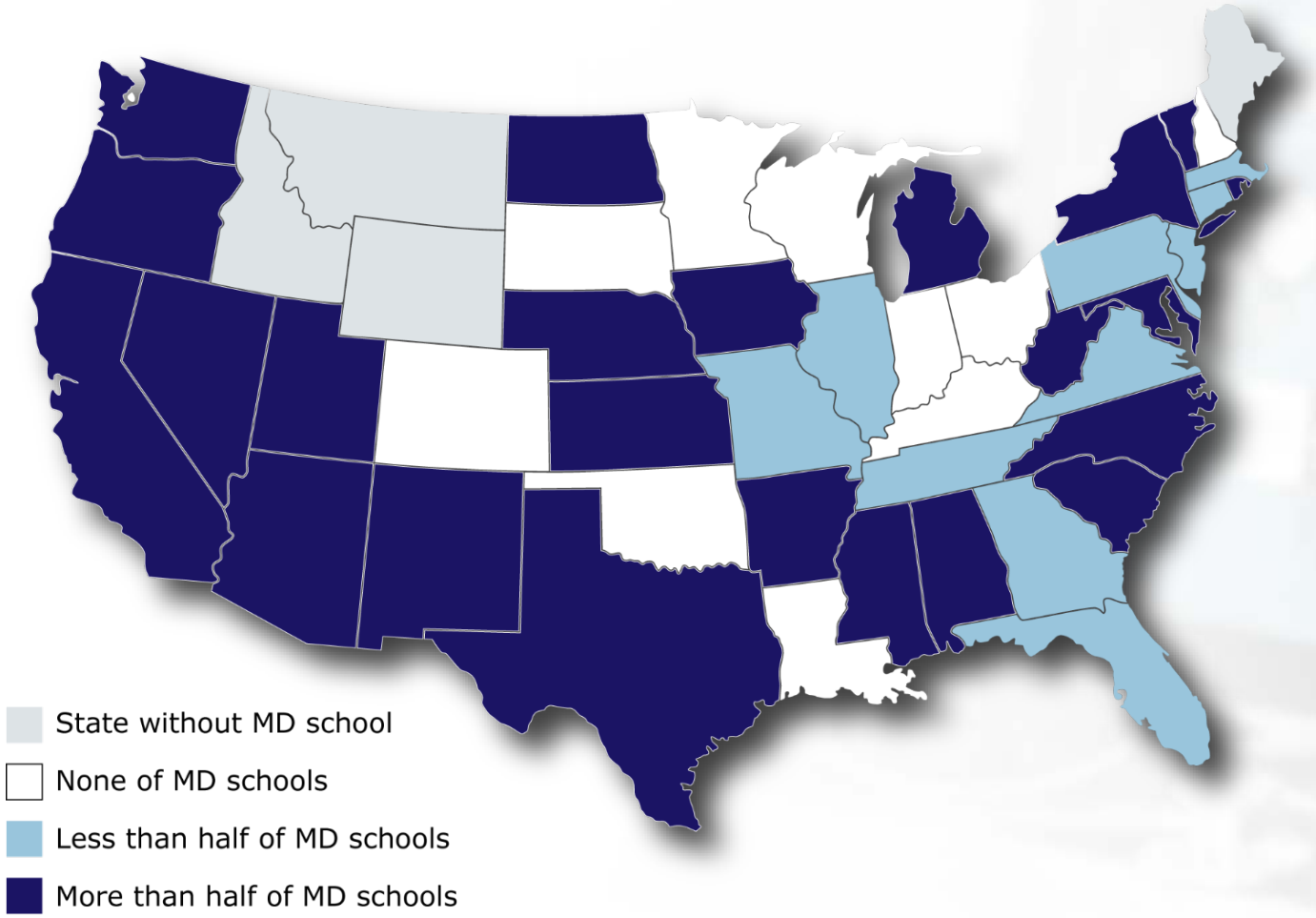
Trends in Telemedicine Education

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

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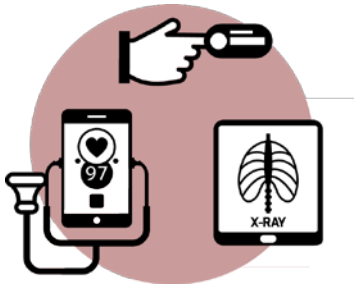
Topics in Telemedicine Education

Foundations

Communication



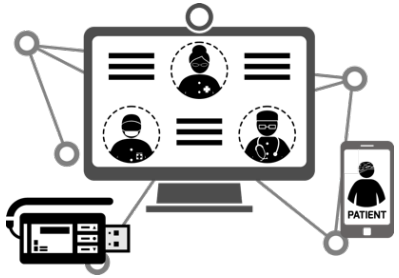
Physical Exams

Policies & Governance

Workflow

Care Coordination

Social Determinants



Tech Platforms

Value & Quality

Innovation

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Activity: Online Resources

Type	Sponsor	Description	Link
General	National Consortium of Telehealth Resource Centers	A consortium of 12 regional and 2 national center funded by HRSA; huge list of resources	https://www.telehealthresourcecenter.org/
	Heartland Telehealth Resource Center	A one-stop shop of resources serving Oklahoma, Kansas, and Missouri	http://heartlandtrc.org/covid-19/ * (for demonstration)
	Center for Connected Health Policy	A clearinghouse of policies and regulations for telehealth administration	https://www.cchpca.org/
Educational	TRAIN	Includes an online repository of Telemedicine Hacks Produced by University of New Mexico	https://www.train.org/main/home
	American Telehealth Association	A non-profit association that host a “learning center” with guidelines and toolkits	https://www.americantelemed.org/resource/ * (for demonstration)
	AAMC	A springboard site for educational resources in telemedicine (including MedEdPortal)	https://www.aamc.org/data-reports/curriculum-reports/interactive-data/content-documentation-required-courses-and-elective-courses
	Telehealth Village	Accredited online educational site sponsored by regional resource center and UVA	https://telehealthvillage.com/home.aspx
	Project ECHO	An innovation hub based at University of New Mexico with many learning programs	https://hsc.unm.edu/echo/institute-programs/
Etiquette & Exams	Old Dominion University	Online playlist of communication topics	https://www.youtube.com/results?search_query=old+dominion+telehealth+etiquette+playlist
	Old Dominion University	Online playlist of exam examples by organ system	https://www.youtube.com/playlist?list=PLM0VF0yZsE6eRiWVQ-RwnkIqruaFzDAON * (for demonstration)
	Thomas Jefferson University	AMA PRA Cat I CME on telemedicine physical exam	https://cme.jefferson.edu/content/telemedicine-providers-conducting-effective-telehealth-physical-exam

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

Best Practices: Autonomy

- ✔ 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

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Virtual Physical Exam

Obtaining Data

Videoconferencing

With Peripherals

- Procedures
- Diagnosis
- Treatments

Without Peripherals

- Mental health
- Education
- Follow up
- Social determinants

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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

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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 manouvers
- Skin: visual inspection, blanching, flaking, tenting
- Psych: memory, behavior, mental status

Gustin et al., Old Dominion Univ, AMA 2020

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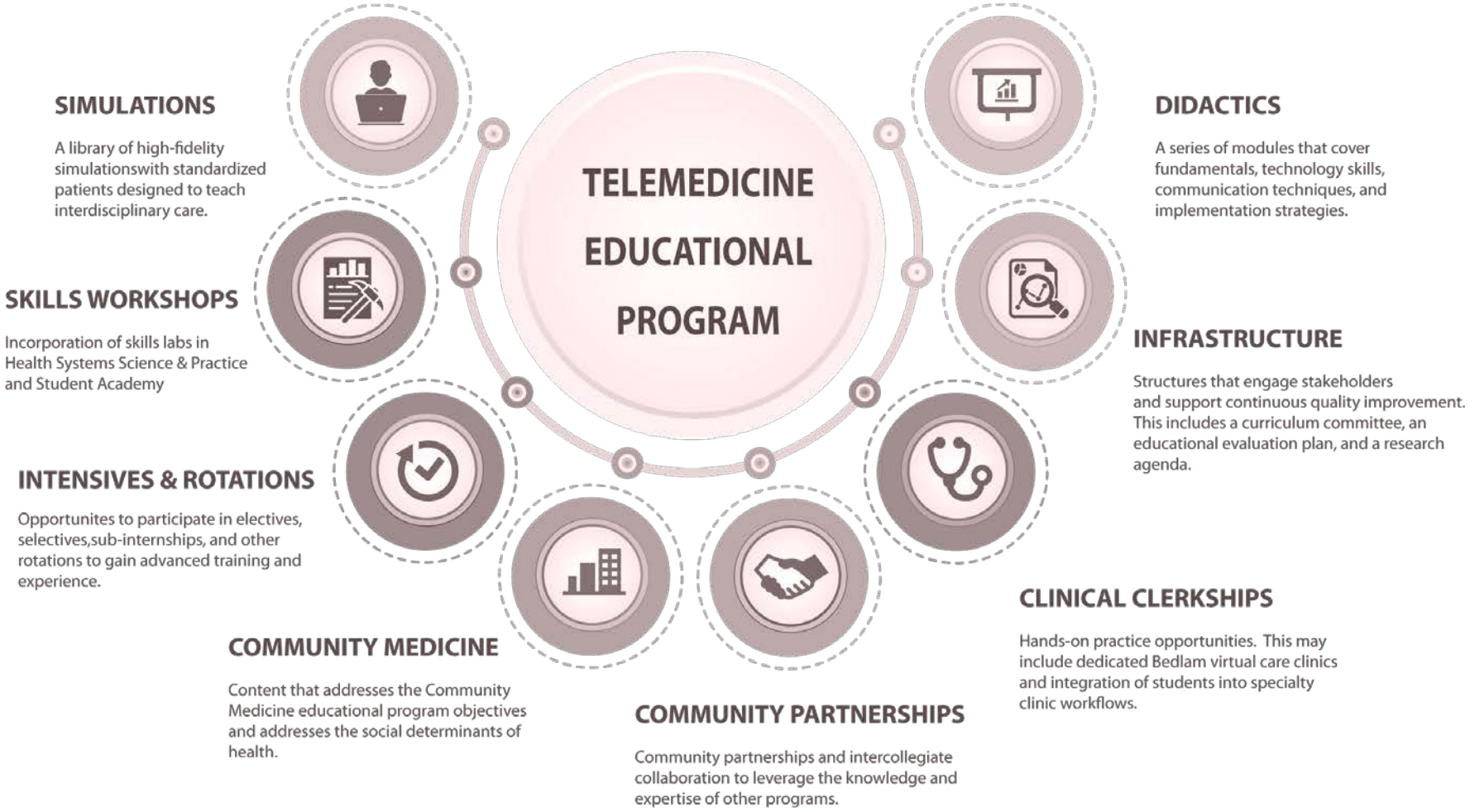
Local Educational Initiatives



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Virtual Physical Exam

How do we teach and assess the physical exam?

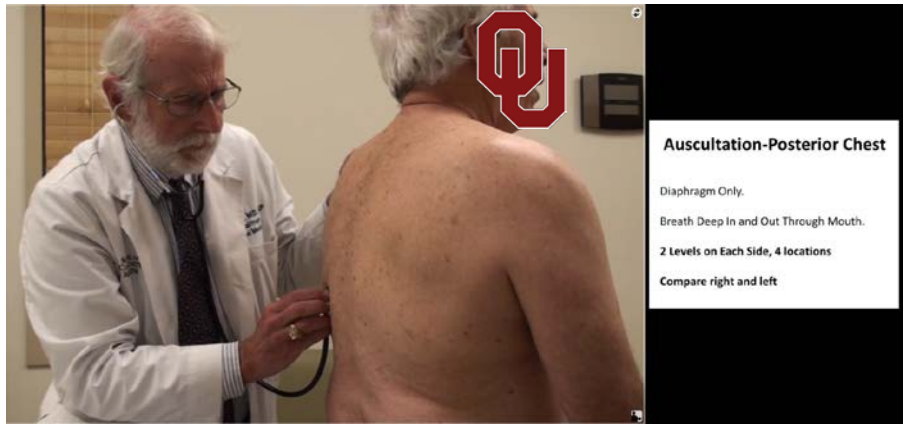
Auscultation-Posterior Chest

Diaphragm Only.

Breath Deep In and Out Through Mouth.

2 Levels on Each Side, 4 locations

Compare right and left



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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

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Activity: Sample Simulation

Demonstration of virtual physical exam components

- Switch to VLC player

Musculoskeletal exams can be performed as well!

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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

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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)

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Inter-professional Education

Trauma Simulation Teaser:

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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?
    - What does Telehealth look like for each profession and together?
    - What is the Zoom Etiquette with a large IPE Learner group?
    - Pre-session planning? Post-session planning/follow up?

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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)
    - Learning Objectives: What are you wanting them to gain educationally from this simulation?
    - 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

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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

Thank you!

Questions or Feedback

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