



# Measuring the Impact of A Telemedicine Simulation On Medical Students

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# Disclosure

- Drs. Palmer and Biagioli's work is also supported by a the American Board of Internal Medicine Foundation Putting Stewardship into Medical Education and Training grant. Title: Teaching Stewardship using Primary Care Simulation Education. PI: Biagioli
- Dr. Palmer is on the Board of the Telehealth Alliance of Oregon (TAO), a statewide membership organization focused on education and policy pertaining to the use and implementation of telehealth in Oregon.
- Consent for publication of student photos on file at OHSU Family Medicine.

# Objectives

Upon completion of this session, participants should be able to:

- List specific clinical skills that a telemedicine OSCE can best measure.
- Describe the process for implementing a similar OSCE in their own program for both remote and on-campus learners.
- Describe the impact the TeleOSCE has on a student's knowledge of, attitude towards and confidence in telemedicine.

# The TeleOSCE

- Primary care, rural-focused clinical simulation
- Required formative assessment for core FM clerkship (OHSU)
  - Kaiser Napa Solano FM Residency
  - UT Health San Antonio
  - U South Dakota
  - OHSU PA Program
  - U of Central Florida (pilot)
- Occurs via an online simulated telemedicine interface (Adobe Connect)
- In-person and online only setups

# TeleOSCE Scenarios

- Foot Sore- Rural
- Trouble Sleeping- Rural
- Knee Pain- Rural, ABIM
- Sinusitis- Urban, ABIM

# Learning Competencies

- Clinical knowledge
- Socio-economic knowledge
  - Transportation issues
  - No pharmacy
  - Poor access to fresh food
- Patient-centered use of technology
  - Intentional “stumbling blocks”
- The “how” is more important than the “what”

Chat 16 (Everyone)



**Don Baker**

Isaac Siegfried

## Student Scenario 10-29-13.pdf

Full Screen

Clinic visit  
Patient Name: Don Baker  
Med. Rec. No.: 24998

## ▼ Hosts (1)



Ryan Palmer 

▼ Presenters (1)

Isaac Siegfried

▼ Participants (2)

Don Baker 

 Lisa D 

Clinic visit  
Patient Name: Don Baker  
Med. Rec. No.: 24998

**S:** This is a 74 year old male with complaint of a sore on his right big toe.

PMH: Diagnosed in his 50s with Type II diabetes.

Rx:

1. Insulin shuts 2 times per day.  
AM: 10 units of regular, 20 units of NPH  
PM: 6 units of regular, 12 units of NPH
2. glucophage 1000 mg bid

Habits: Drinks approximately one to two beers a week. Has never smoked cigarettes or used any recreational drugs. Except for the medications for your diabetes, patient does not take any medicines regularly.

**Family history:** Mother and father both died of natural causes in their early 90s. Father had Type II diabetes and Mother had no health conditions. Has a younger sister who lives in Boise and is healthy with no conditions. No other history of illness in the family.

## Files 12

[illegible]



Dr. Baker



Dr. Baker

## Attendee List (1)

Dr. Baker	
• Hinds (1)	
• Ryan Palmer	
• Prescriptions (1)	
• Ryan Palmer	
• Prescriptions (1)	
• Ryan Palmer	
• Prescriptions (1)	
• Ryan Palmer	
• Prescriptions (1)	

## Student Scenario 10.29.13.pdf

Full Screen

## File 12

Name:	Size:
Dr. Baker 10.29.13.pdf	14 KB
Tool pic.jpg	63 KB

ear old male with chronic Type II  
aker's primary care physician, Dr.



# Methodology and Data Collection

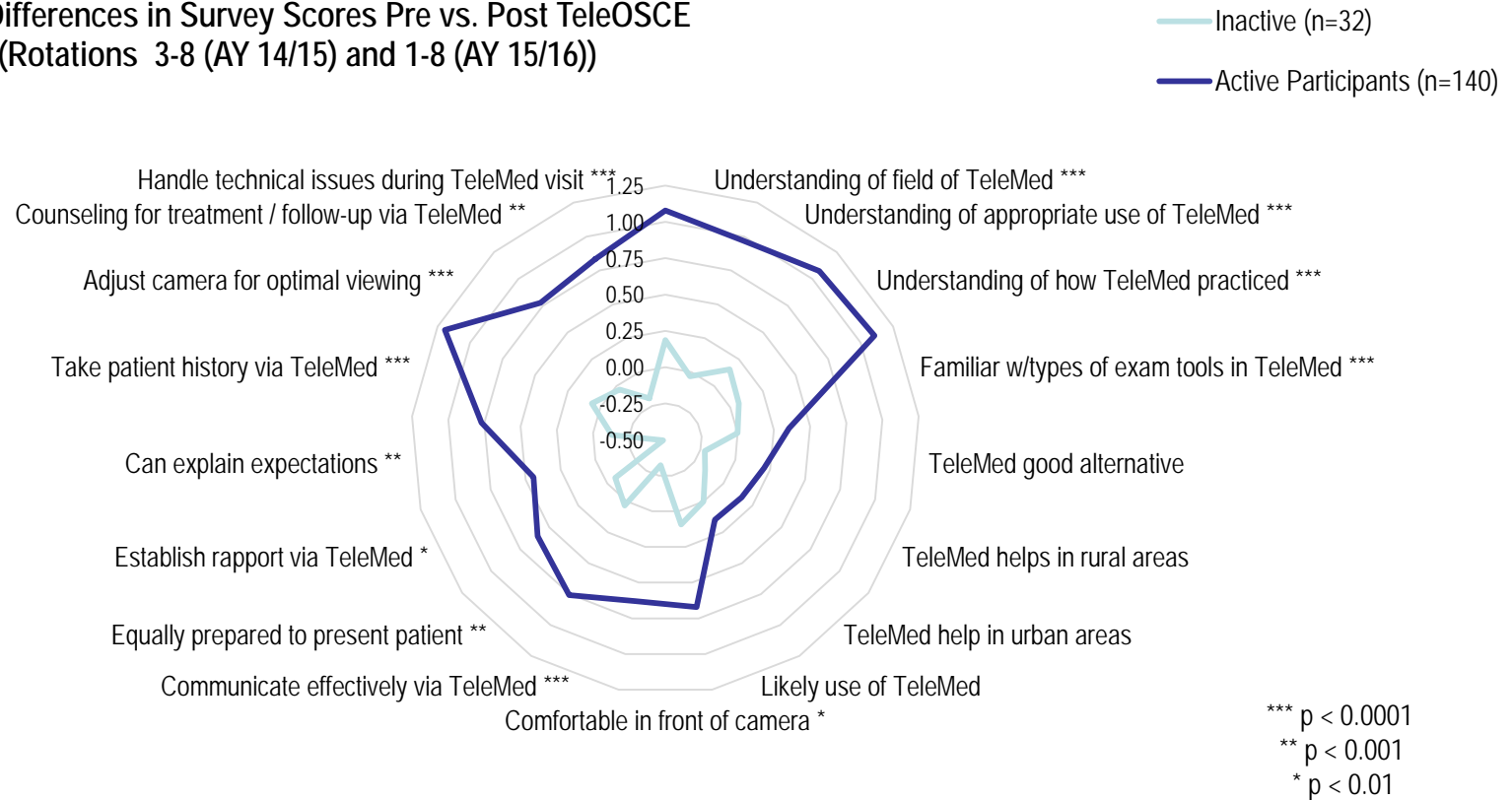
- Longitudinal study, pre-post survey
- Survey
  - Developed by UC Davis, adapted at OHSU
  - Student perception of telemedicine confidence, knowledge, attitude
  - 17 questions with Likert scale responses
- Data collection (2014-16)
  - Pre: week one
  - Intervention: Week 2
  - Post: Week 5
- N=172
  - 140 Active
  - 32 Inactive

# Results

Type of Question	Question	p value
Knowledge	Understanding of field of TeleMed	$p < .0001$
Knowledge	Understanding of appropriate use of TeleMed	$p < .0001$
Knowledge	Understanding of how TeleMed practiced	$p < .0001$
Knowledge	Familiar w/types of exam tools in TeleMed	$p < .0001$
Confidence	Communicate effectively via TeleMed	$p < .0001$
Confidence	Take patient history via TeleMed	$p < .0001$
Confidence	Adjust camera for optimal viewing	$p < .0001$
Confidence	Handle technical issues during TeleMed visit	$p < .0001$
Confidence	Equally prepared to present patient	$p < .001$
Confidence	Can explain expectations	$p < .001$
Confidence	Counseling for treatment / follow-up via TeleMed	$p < .001$
Confidence	Comfortable in front of camera	$p < .01$
Confidence	Establish rapport via TeleMed	$p < .01$
Attitude	TeleMed helps in rural areas	$p \leq .05$
Attitude	TeleMed as good alternative to face-to-face	
Attitude	TeleMed help in urban areas	
Attitude	Likely use of TeleMed	

# Results

## Mean Differences in Survey Scores Pre vs. Post TeleOSCE (Rotations 3-8 (AY 14/15) and 1-8 (AY 15/16))



# Conclusion and Next Steps

- Participating in TeleOSCE improved Knowledge of and Confidence in telemedicine.
- Attitudes improved in active group, non-significant
- Limitations: Small control, self-reported data, non-validated survey
- Next steps: Expand survey to other TeleOSCE implementations

# Discussion

## Questions:

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