

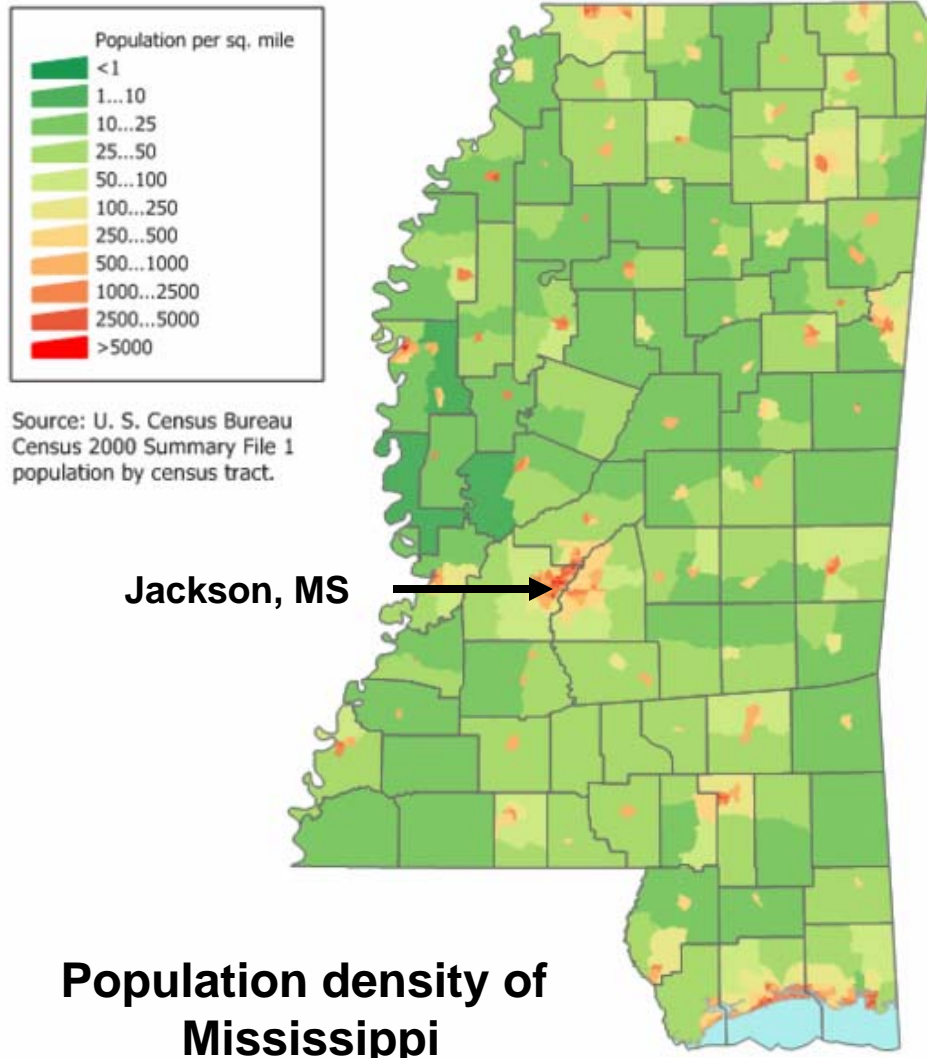
“TeleSimulation”: A Tool for Nurse Practitioner Education and Evaluation

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Agenda

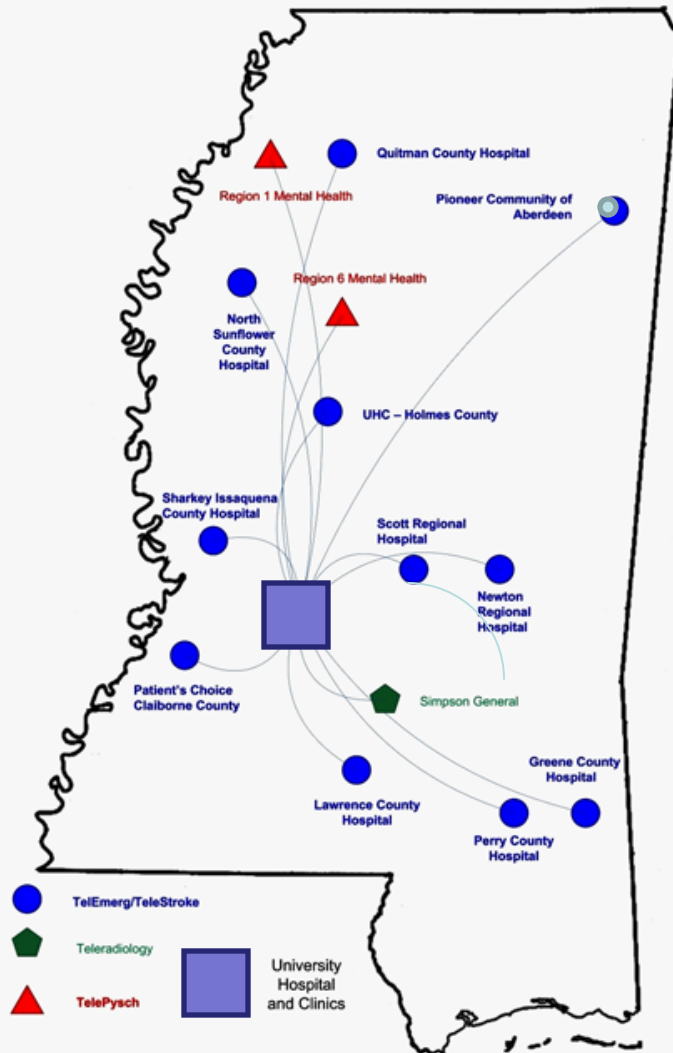
- **TelEmergency**
 - Training of TelEmergency nurse practitioners
 - Certification and continuing education
- **Telesimulation**
 - Set-up
 - Educational benefits
- **Telesimulation scenarios**
 - Objectives
 - Examples
- **Future development**

What is TelEmergency?



- Links NP and board certified emergency medicine physician via TelEmergency
- Provides EM specialist to remote areas of Mississippi
- Golden Hour of Trauma

Progress

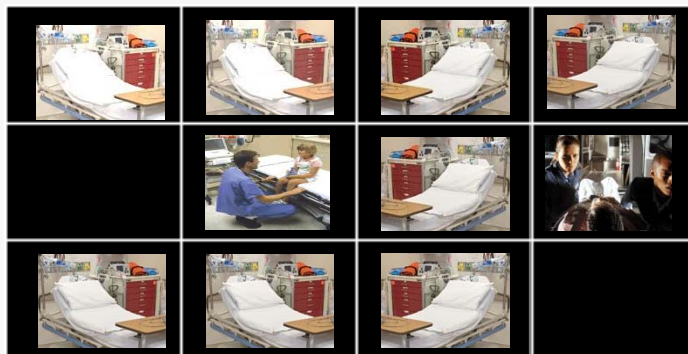


- Operation began October 1, 2003
- Approximately 2,000 patients per month
- 13 hospitals in operation currently
- 150,000 patients seen to date
- 31 Nurse Practitioners
- 16 EM physicians

TELEMERGENCY



Operations



- **TelEmergency System Activation**
- **NP or MD activated**
- **Stat vs. consult activation**
- **Hospital placed in queue**
- **Consult activated**
 - **Audio-Visual Interaction**

Control room



Nurse Practitioners in Mississippi



- Regulated by the Board of Nursing
- Scope of practice
- National certification
- BOML regulations
- Limitations to scope of practice
- Education, competency and PI plan



Regulations for TelEmergency

XXVII. REGULATIONS PERTAINING TO EMERGENCY TelEmergency WITHIN THE STATE

A. SCOPE/PURPOSE

These regulations apply to only those individuals licensed to practice medicine or osteopathic medicine in the State of Mississippi and who are performing duties as employees of the University of Mississippi Medical Center. This regulation does not authorize any communication across state lines.

B. DEFINITIONS

For the purpose of Article XXVII only, the following terms have the meanings indicated:

"Physician" means any person licensed to practice medicine or osteopathic medicine in the State of Mississippi.

"TelEmergency" is the diagnosis or treatment of human injury, illness and diseases using interactive audio, video or data communications by electronic or other means.

"TelEmergency medicine" is a unique combination of TelEmergency and the collaborative/supervisory role of a **physician Board certified in emergency medicine**, and an appropriate skilled health professional (**Nurse Practitioner or Physician Assistant**).

C. BOARD REVIEW

The same requirements as outlined in Article XIII shall apply.

D. COLLABORATIVE/SUPERVISING PHYSICIAN LIMITED

No physician practicing TelEmergency medicine shall be authorized to function in a collaborative/supervisor role as outlined in Article XIII unless his or her practice location is a **level 1 hospital trauma center** that is able to provide continuous twenty-four hour coverage and has an existing air ambulance system in place. **Coverage** will be authorized only for those **emergency departments** of licensed hospitals who have an **average daily census of thirty (30) or fewer Acute Care/Medical Surgical occupied beds** as defined by their Medicare Cost Report.

NP scope of practice



- **Family NP**
- **Successful performance of ED procedures**
- **Obtain DEA certificate**

TelEmergency NPs



The screenshot shows the top portion of the TelEmergency website. At the top left is the University of Mississippi Medical Center logo. To its right are navigation links for Education, Health Care, and Research, along with a search bar labeled 'Search UMMC'. Below this is a dark blue header bar with the text 'WELCOME TO TELEMERGENCY'. On the left side of this header is a vertical menu with the following items: 'TelEmergency Faculty', 'Organizational Chart', 'Project Information', 'Nurse Practitioners', 'Institutions', 'Education', 'Application', 'TelEmergency Training', and 'Contact Us'. To the right of the menu, there is a circular logo for the 'TelEmergency Association of Nurse Practitioners' and the text 'Training' and 'Telemergency Training Program'.

- **Recruitment**
- **Initial education**
- **Continuing Education**
- **Performance Improvement**

TE NP education

- **Initial training**
 - **Didactic: lecture series, followed by test**
 - **Clinical practice: min of 135 h**
 - **Cadaver Lab: invasive emergency medicine procedures**
 - **Simulation Lab: skill training and scenarios-based training**
- **Continuing Education: 4 days/year**
 - **Case-based workshops: trauma, cardiovascular, pediatrics...**
 - **Airway skill training**
 - **ACLS and PALS scenarios on high-fidelity simulators**
 - **TeleSimulation**

Using TeleSimulation scenarios as an evaluation tool for NPs

Evaluate

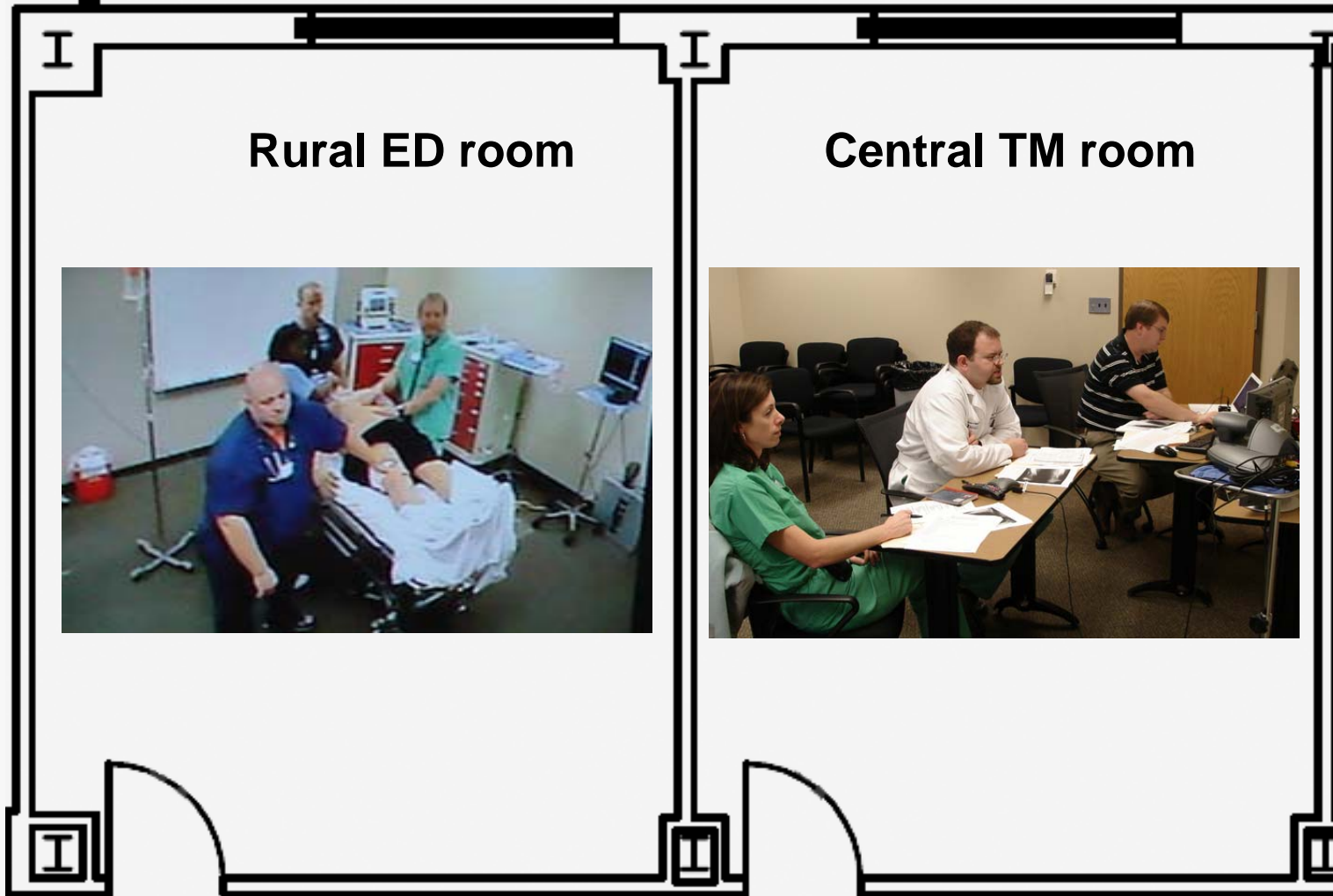
1. History taking and physical exam skills
2. Clinical **decision making**
3. Proper **utilization of TelEmergency system**
4. Procedural skills
5. EMTALA and **transfer issues**
6. Ability to lead a team
7. Taking and following **directions** from
TelEmergency physician

What is “TeleSimulation” ?



- **Training and assessment tool** designed for **TelEmergency participants** (NPs, residents, physicians)
- NPs are in “**rural ED site**” **room** with a simulated patient
- Consulting emergency medicine physician are in “**central TelEmergency site**” **room**
- They communicate through the **teleconferencing setup** identical to TelEmergency

TeleSimulation room set-up



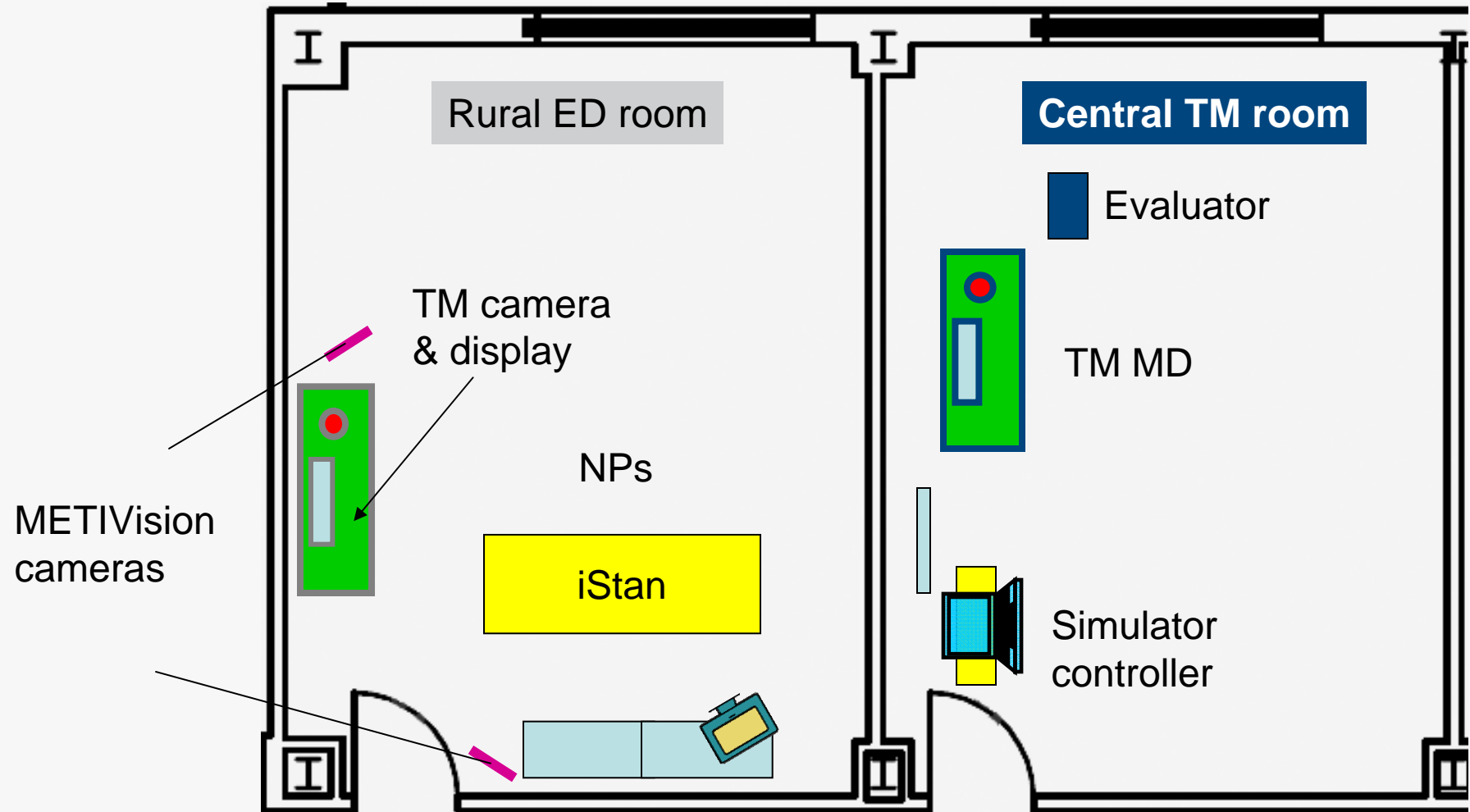
Equipment need



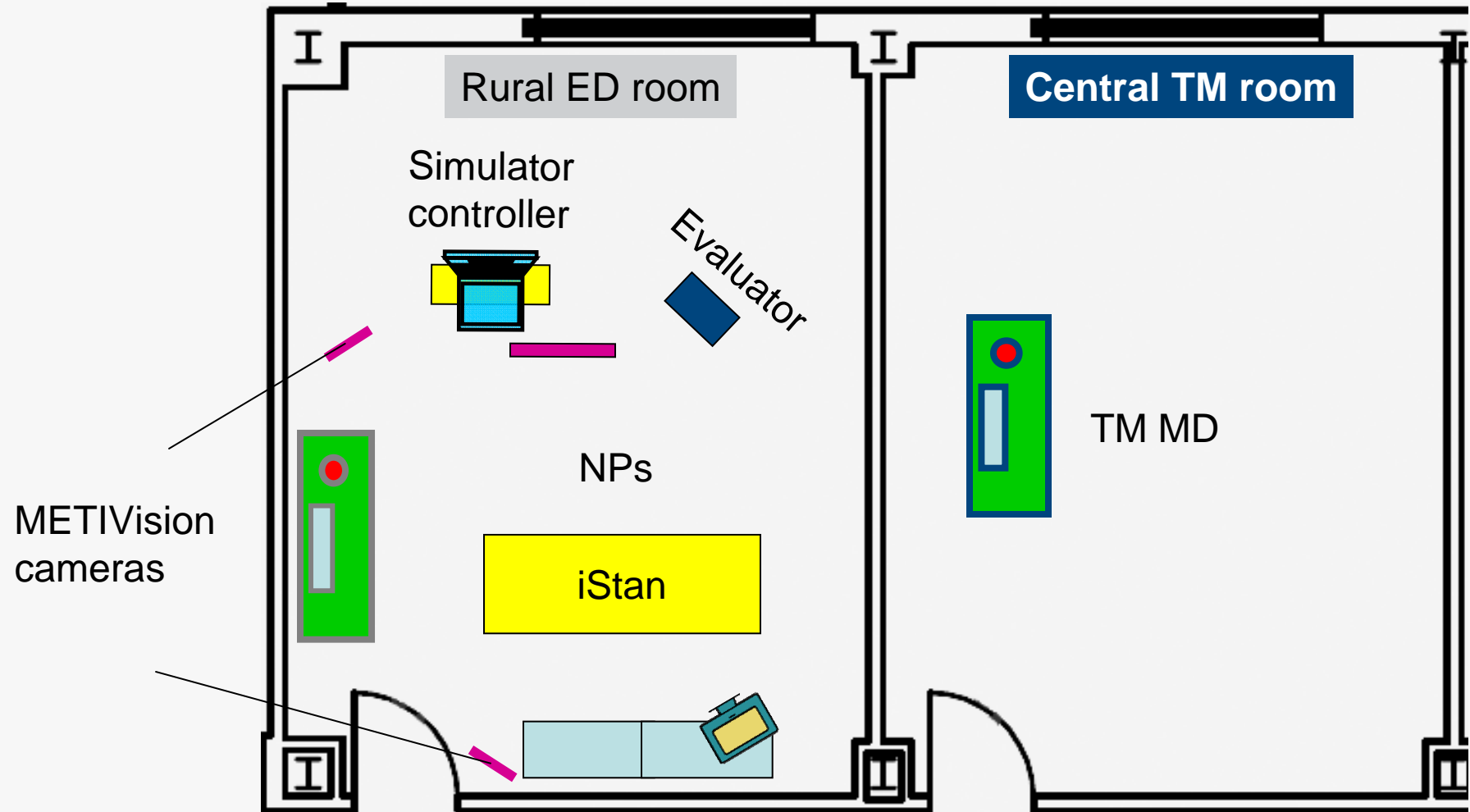
Polycom® VSX™ 7000e

- **METI simulator**
 - iStan
 - METIMan
 - PedECS
- **Video connection for simulator controller**
 - METVision
 - Web cam
- **Video conferencing equipment**
 - Remote and physician site
- **Internet connection**

TeleSimulation room set-up for NP training



TeleSimulation room set-up for Telemedicine physician training



Why “TeleSimulation” ?



- **Training directly addresses competencies required in TelEmergency practice**
- **Easy, flexible set-up**
- **Can train NPs at their own rural ED**
- **Can be used to test new TelEmergency sites**

Creating TeleSimulation scenarios

- **Scenarios were based on actual TelEmergency cases**
- **4 core scenarios were developed**
- **Each core scenario is designed to address utilization of TelEmergency and emphasize one or more competencies**
 1. History taking and physical exam
 2. Clinical knowledge and decision making
 3. Airway management
 4. Team work and knowledge of the medical system



Scenario 1: Joe Belliere

- **Designed to evaluate history and physical exam taking**
 - Obtain an appropriate history
 - Perform physical exam
 - Gather appropriate clinical data: EKG and labs
 - Obtain TelEmergency consult and give an appropriate report

Scenario 1: Joe Belliere



- **32 y.o. male presents with chest pain**
- **Patient is a low risk patient with GERD/atypical chest pain.**
- **Scenario: Standard man with mild tachycardia**
- **Appropriate outcomes are**
 - admit to observation chest pain unit**
 - discharge with very close out-patient follow up**

Scenario 1: Evaluation



Accuracy of H&P

Is the history what the patient actually said?

Was **all** the pertinent history obtained?

Clinical competency

Was appropriate testing done?

Was the clinical information interpreted correctly?

Utilization of TelEmergency

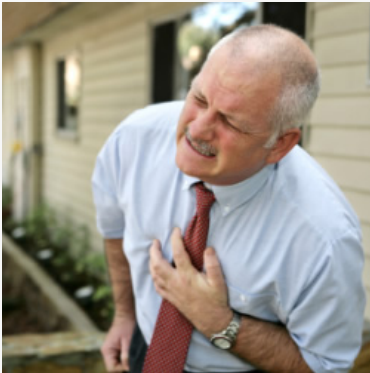
Was the presentation to TelEmergency organized?

Was patient disposition appropriate?

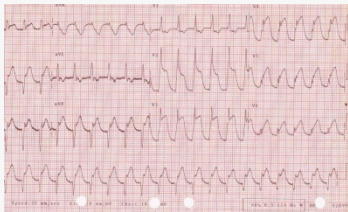
Scenario 2: Stanley Bublensky

- **Designed to test medical knowledge and system utilization**
 - Perform physical exam
 - Gather appropriate clinical data
 - EKG
 - Labs
 - Recognize inferior STEMI
 - Understand pathophysiology INFERIOR MI
 - Know STEMI treatment guidelines
 - Obtain TelEmergency consult and give an appropriate report

Scenario 2: Stanley Bublensky



- **65 y.o. male patient presents with chest pain and “bubble in the stomach”.**
- **Scenario: Inferior MI**
 - Begin to treat the chest pain
 - EKG: classic acute inferior STEMI
 - TelEmergency system is activated
 - Treatment and transfer options are discussed
 - Air transport may or may not be available



Scenario 2 Evaluation



- **Medical knowledge**
 - Was inferior MI recognized?
 - Did **inferior MI** dx affects treatment?
 - Was pathophysiological difference between anterior and inferior MI understood?
- **Systems utilization**
 - What are the STEMI treatment options?
 - Which ones are **available** at the given location within the correct timeframe?
 - What are the options to transfer the patient?

Scenario 3: Robert Shaker



- **Designed to test airway skills and airway decision making**
- **Patient presents with stable vital signs after an overdose**
- **Scenario flow**
 - Patient is initially stable students need to take a quick accurate pertinent history and physical
 - Suddenly the patient starts seizing
 - Seizures are resistant to treatment
 - Patient becomes hypoxic



Scenario 3 evaluation

- Was accurate pertinent **history obtained** before the seizures started?
- Was **seizure treated** appropriately?
- Was **hypoxia recognized**?
- Did they recognize the **need for RSI**?
- Was **TelEmergency activated**?
- Were appropriate **medications** given?
- Was the **airway managed** correctly?
- Were they able to **intubate**?
- Could they handle a **difficult airway**?



Scenario 4: John Doe

- Designed to test leadership skills
- Patient is a combative multi trauma patient
- Scenario flow
 - Presents with a large arterial bleed that needs immediate attention
 - Patient is extremely combative
 - Patient vomits
 - Patient gradually develops a **tension pneumothorax**
 - Transfer issues: helicopter not available due to weather, no other EMS unit available.



Scenario 4 Evaluation



- Did the NP **lead and direct** the team?
- Were **tasks assigned**?
- Were actions **recorded**?
- Were critical **actions prioritized** correctly?
- Was patient **reassessed**?
- Was **TelEmergency utilized** appropriately?
- Were **transfer issues** dealt with?

Feedback from the trainees



- Felt that the **scenarios were realistic** to what they have seen and will see in their practice.
- Students **wanted more** of this type of training
- The **debriefing discussions** were extremely helpful both to the students and TelEmergency physicians
- We **found out about problems** with local EMS and with hospital transfer problems that we were unaware of

The scenario starts



Activating TelEmergency



A little TelEmergency prompt



Intubating



Is the tube at the right spot?



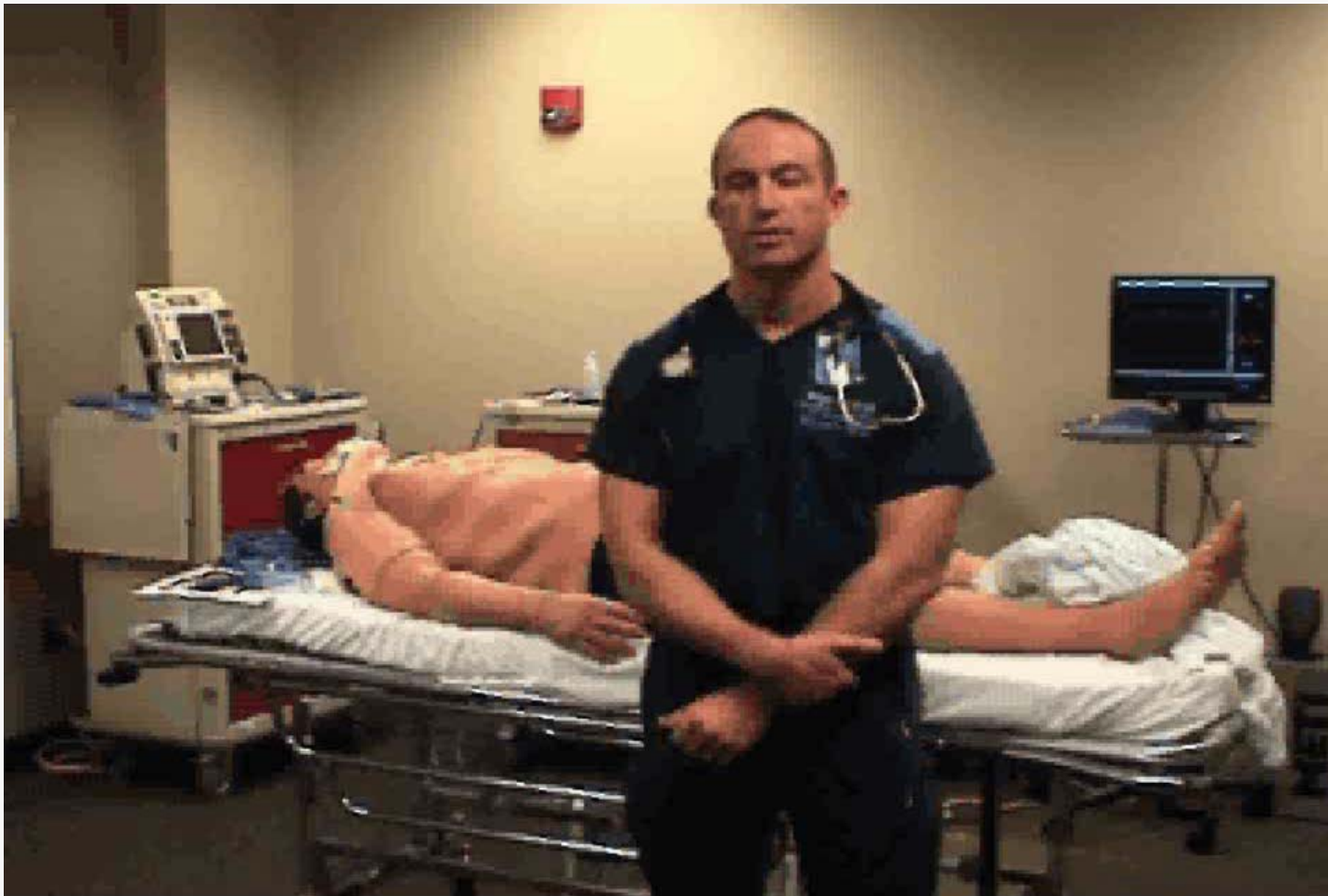
What happened?



Transfer



Feedback



Future plans



- **More core scenarios are being tested and added**
- **Improving audiovisual recording for debriefing**
- **UMMC committed to expand Telemedicine services**
- **Plan to use Telemergency set-up to train Telemedicine physicians.**

Questions?

