UNIVERSITY OF TEXAS ARLINGTON

Project SOAR
Virtual simulation to support emergent rural obstetric care

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Disclosures

- This project was supported in part by a grant from The Center for Rural Health and Nursing, University of Texas at Arlington College of Nursing and Health Innovation.

Session Objectives

By the end of this session, participants will be able to :

- discuss how to assess community stakeholders' learning needs, current practices for obstetric care, and perceptions regarding the need for high-quality obstetric care.
- describe the steps to design a tailored, health equity-focused obstetric simulation-based training program for generalist nurses.
- describe the steps to pilot and evaluate the health equity-informed OB simulation-based training program.

Introduction and Purpose

- In the United States, about 60% of pregnancy-related deaths are preventable
- In Texas, approximately 89% of pregnancy-related deaths are preventable
- There are persistent rural-urban disparities in maternal mortality and morbidity

Introduction and Purpose

- Obstetric emergencies increase risk of maternal mortality
- In 2018, **48.6%** of Texas counties were maternity care deserts with no birth center, no obstetricians and no hospital offering labor and delivery care
- Maternity care deserts in rural communities have resulted in a significant shortage of nurses prepared to provide emergent obstetric care, potentially resulting in poor patient outcomes

Study Objectives

- Assess community stakeholders' learning needs, current practices for OB care, and perceptions regarding the need for high-quality OB care
- Design a tailored, health equity-focused OB simulation-based training program
- Pilot and evaluate the health equity-informed OB simulation-based training program

The Rural Connection

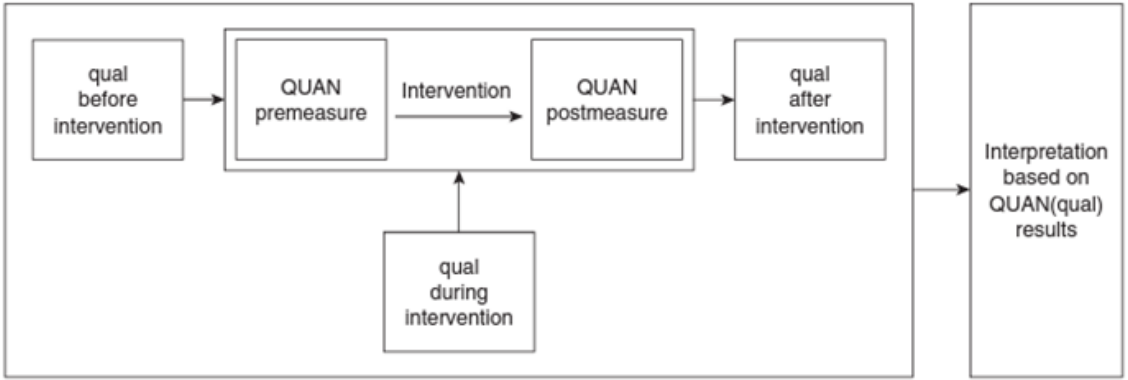
- 254 number of counties in Texas
- 133 are considered rural
- 48.6% of Texas counties are considered maternity care deserts with no obstetric care
- Jack County- population 8472
- Faith Community Hospital- 41 beds-inpatient care, minor surgical care, obstetric care, and outpatient clinic care

Our Community Partner

Study Design and Methods

Embedded experimental mixed-method design

- Qualitative descriptive and quantitative cross-sectional pre-post-test design



Focus Group Methodology

- 8 focus groups were conducted using a semi-structured interview guide
  - 7 with nurses and care providers
  - 1 with community stakeholders
- 2 individual interviews were conducted
- Data were recorded and transcribed for analysis

Focus Group Findings

All stakeholder agreed that there is a need for additional training opportunities for obstetric emergencies

Nurses and other stakeholders indicated the most important topic areas for training:

- Postpartum Hemorrhage
- Shoulder Dystocia

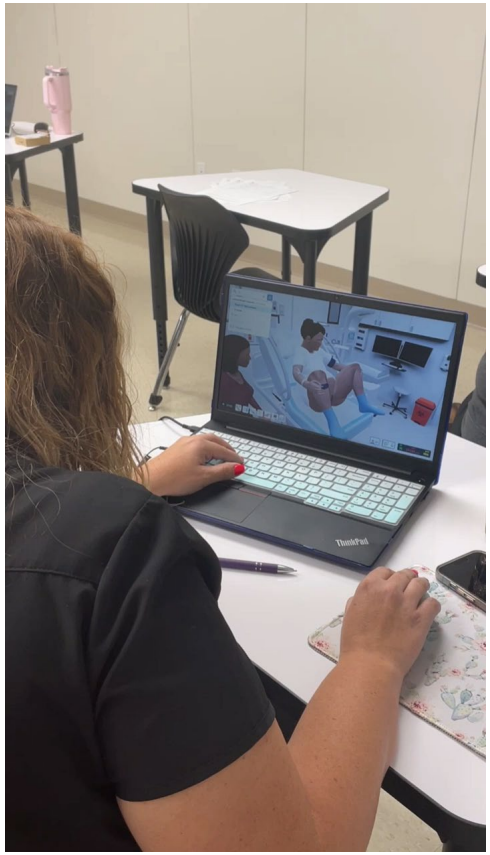
Simulation

Aligned with the INACSL Healthcare Simulation Standards of Best Practice

- Prework
- Prebriefing
- Simulation including pre and post quiz
- Debrief
- Repeat simulation and post quiz
- Debrief

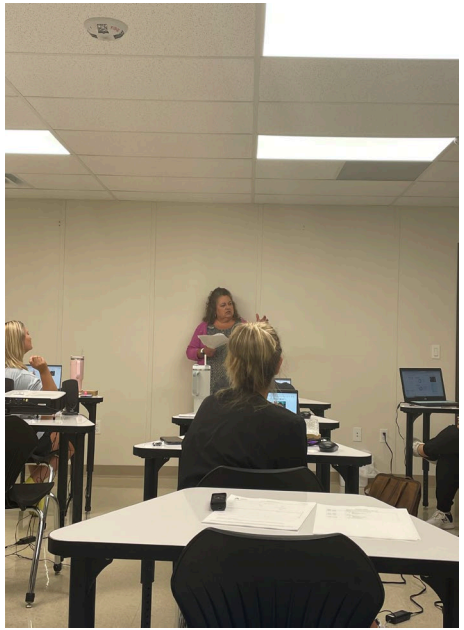
Simulation

- Commercially available screen-based virtual simulation product
- Repeated simulation design
- Three 4-hour training sessions
- 19 participants- mix of OB trained and generalist nurses
- Post partum hemorrhage and shoulder dystocia



Debriefing

- Synchronous debriefing
- Led by qualified debriefer
- Plus/Delta with a little GAS
- Combination of debriefing questions within the platform and health equity focused open ended questions



Simulation Evaluation

- Performance scores within the software
- Simulation Effectiveness Tool- Modified (SET-M)
- Workshop questionnaire

Results

N=19 participants from the 3 training sessions

Race

- 95% Non-Hispanic White
- 11% Hispanic
- 5% American Indian or Alaska Native

Gender

- 89% identified as women
- 11% identified as men

Experience

- 79% had 5 or fewer years of experience

Education

- 47% had a BSN

Specialty

- 68% were working as a labor and delivery nurse

KIRKPATRICK'S FOUR-LEVEL TRAINING EVALUATION MODEL

Reaction
Did nurse learners find the training enjoyable and relevant?

Learning
Did nurse learners acquire the intended knowledge, skills, and confidence?

Behavior
Did nurse learners indicate intentions to apply what they have learned?

Results
Did the intended outcomes occur as a result of the training?

REACTION

- **95%** reported the training met or exceeded their expectations
- **95%** reported this type of training would be beneficial for other rural nurses
- **90%** reported that the hospital should continue to invest in similar trainings

LEARNING

KNOWLEDGE CHANGE

- **A significant improvement in knowledge scores**, from average pre-quiz score (52%) to post-quiz attempt 1 (42%) and attempt 2 (72%) (*t*=5.69, p<.001).
- **A significant improvement in scenario attempts**, from attempt 1 (51%) and 2 (70%), (*t*=5.04, p<.001)

CONFIDENCE AND COMPETENCE

- On average, participants 'somewhat agreed' or 'strongly agreed' that simulation training helped increase their confidence and competence to respond to similar scenarios

BEHAVIOR

- **100%** reported intentions to apply their knowledge or skills in the next 3 months
- All nurse learners received simulation license for training purposes

Challenges and Limitations

- Technology
- Missing data
- Mixed level of learners

Impact/Benefits for the Participants

- Nurse learner access to 11-scenario package of virtual simulations (12 months0
- Debriefing
- Increased knowledge of care of the emergent obstetric patient

Impact on the Rural Community

- Cost effective, sustainable strategy for training generalist nurses
- Training addressed health disparities and evoked discussion related to impact on the community
- Potential to improve outcomes in emergent obstetric situations

Implications for Practice

- Train the trainer potential
- Use of the virtual scenarios in orientation to the obstetric unit
- Use of the virtual scenario content to conduct live in-situ simulations within the facility

Future Directions

- During the simulation training sessions, additional needs for rural facilities were identified
- Potential for future collaborations with our rural partner
- Project provided an instructional strategy for rural hospitals to educate nursing staff on low frequency/high acuity events to improve patient outcomes

Our Team

Acknowledgements

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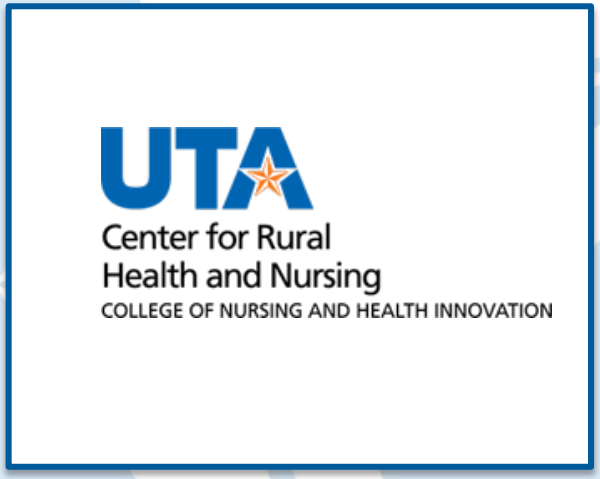
Faith Community Health System

All stakeholders and participants who participate in this project



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Thank you!