

Effectiveness of Standardized Patient Simulation Scenarios and EHR Documentation to Improve the Clinical Competence of Graduate Nurses

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Disclosures

Conflict of Interest

- Rosanne von Reyn (author) reports no conflict of interest
- Kathleen Ellis (author) reports no conflict of interest
- Lori Halverson (author) reports no conflict of interest
- Tamera Sutton (author) reports no conflict of interest
- Nancy Smith (author) reports no conflict of interest
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Successful Completion

- Attend 90% of session
- Complete online evaluation

Objectives

Upon completion of this presentation, participants will be able to:

1. Discuss the gap that exists between education and practice in the development of clinical competence of Graduate Nurses.
2. Identify the benefits of utilizing simulation to enhance the development of clinical competence in Graduate Nurses.
3. Describe the significance of incorporating a component of Electronic Health Record documentation into the simulation scenario.

The gap between education and practice

- Increasing acuity of hospitalized patients poses a unique challenge in the orientation of Graduate Nurses (GN) to their role and the development of their competence
- Current transition programs do not adequately prepare the GN for their new role
- Emphasis on designing innovative initiatives during the GN internship to promote clinical competence



Current internship

8 weeks (2 days per week)

Currently 3 sessions – Spring, Summer, Fall

- Classroom lectures / guest speakers
- Group activities
- Case studies
- Skills stations
- Computer lab / education / EKG

Competence

“Competence is one’s *actual ability* to successfully perform what is required to achieve a favorable outcome in a clinical context.”
(Andreatta, P. & Lori, J. 2014)

Bridging the gap

Simulation facilitates replication of patient care situations without the patient safety risk

Current research demonstrates higher level of support for the use of simulation in nursing programs

Collaboration between nursing schools and hospital employers could create more effective transition programs

Review of the Literature

Use of human patient simulators in nursing education gained momentum in the 1990's (Nehring & Lashley, 2004)

Institute of Medicine report encouraged the use of simulation to promote interdisciplinary learning experiences (IOM, 2010)

National Council of State Boards of Nursing research study on the effects of simulation in nursing programs (Hayden, J.K. et al., 2014)

Review of the Literature

Role of simulation in nursing education for the development of competency (Alinier, Hunt, & Gordon 2004)

Lasater's qualitative study on the use of high-fidelity simulation to support competence in nursing students (Lasater, 2007)

Human patient simulation has been introduced in nurse residency programs to increase competence, confidence and readiness into practice (Beyea, Slattery, & von Reyn, 2010)

Everett-Thomas study evaluated the impact of weekly simulation sessions on overall clinical performance in a new graduate nurse residency program (Everett-Thomas et al., 2014)



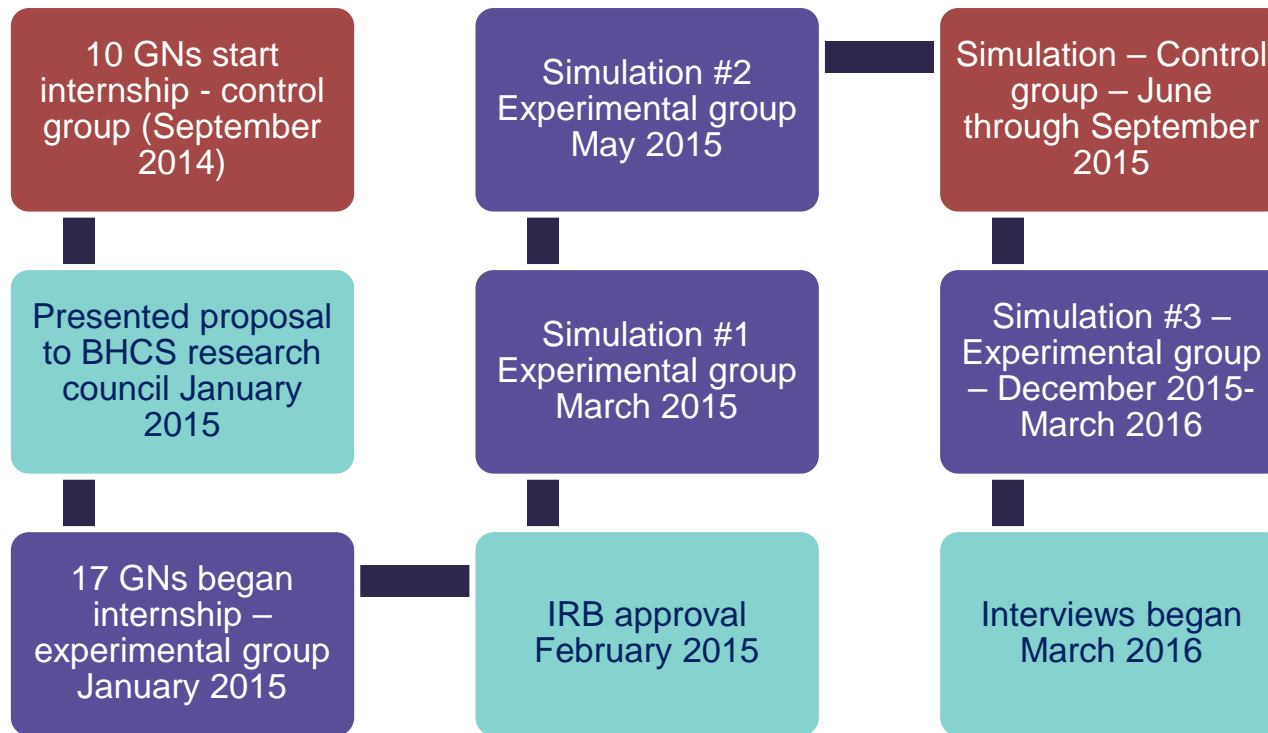
Purpose

Purpose: to determine if the introduction of standardized patient simulation scenarios used during new graduate nursing internship will improve clinical competence

Focus: utilizing patient simulation scenarios to promote clinical competence in the GN

Outcome : improve the clinical competence of the GN during their internship and facilitate transition into their new role

Timeline



Video of Katrina

We would like you to hear from one of our nurses who participated in our study:

<https://vimeo.com/162424289>

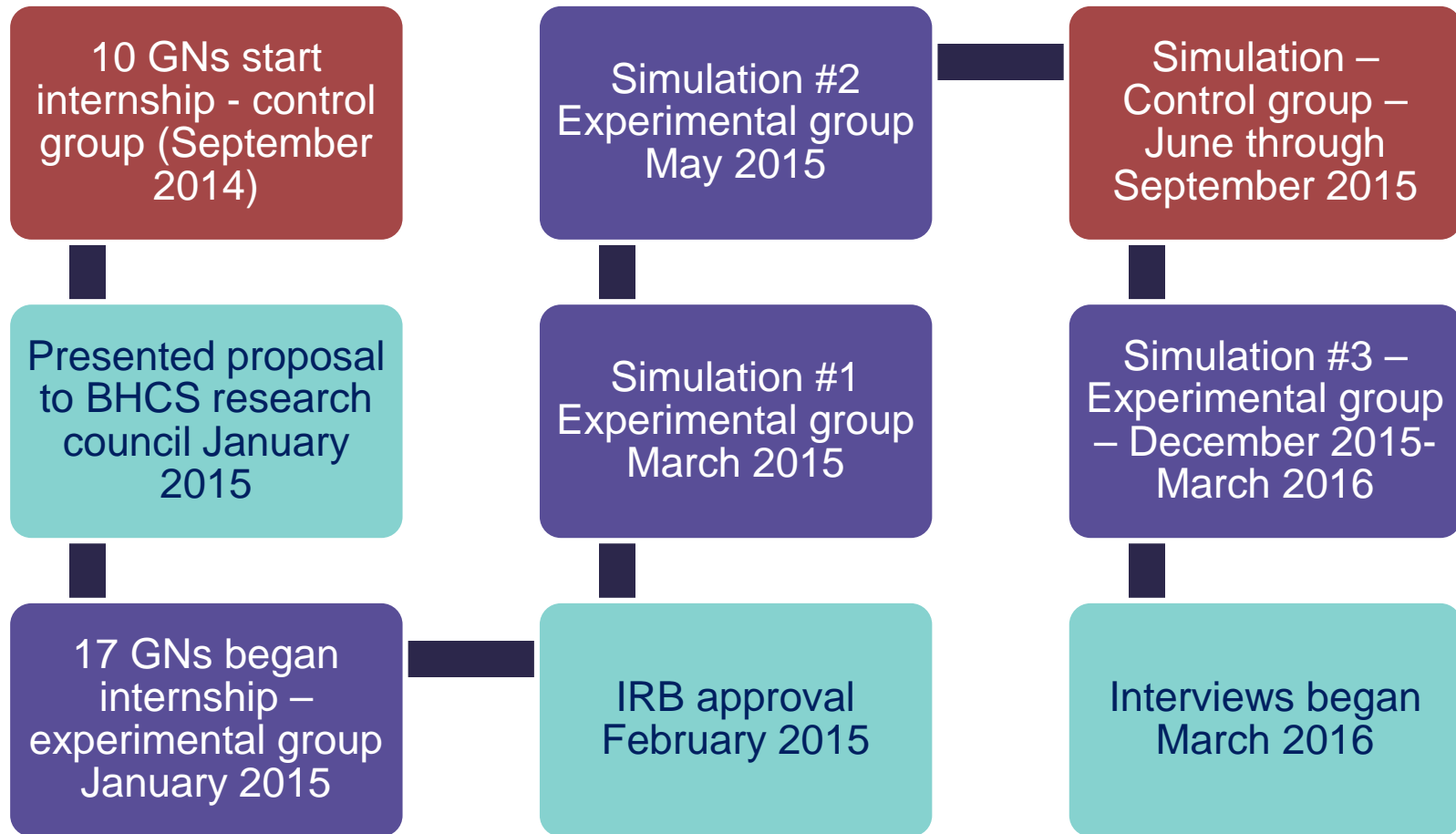
Role of Leadership

- Support from administration
- Financial considerations
- Location within the hospital / logistics

Project Development

- Timeline
- Control group
- Experimental group
- Manikin - low fidelity
- Location
- Supplies

Timeline



Collaboration with Schools of Nursing

- Smart Hospital – University of Texas at Arlington
- Scenarios
- Evaluation tools

Simulations in Nursing School

Limitations of their simulation exercises

- Time issue
- Charting system availability
- All hospitals use different systems

Impact of EHR Documentation

EHR Documentation—Is it a Big Deal?

- Onboarding
- Not Documented.....Not Done
- Reimbursed for outcomes
- Responsibility for efficient & accurate charting

Video of Eric

Here is the perspective of another new graduate:

<https://vimeo.com/162424335>

Scenarios

High Risk / Low Frequency

- Blood Transfusion Reaction
- Hypoglycemia Management
- Multisystem - CHF / Hypoglycemia

Simulating with the EHR

Why add the EHR to the simulation?

- Impacts most if not all clinical nurses
- Most simulation studies DON'T include the EHR
- Adds a layer of reality to a simulation scenario
- Provides an opportunity to teach complex workflows

What did it take to bring the EHR along?

GNs receive EHR training prior to the simulation

Utilized the 'TRAIN' environment

Built additional clinical components

- Medications
- Problem List
- Diagnostic Results (lab, radiology)

During the Simulation

GNs had access to a WOW (Workstation on Wheels)

Referenced the EHR to obtain additional patient information

Electronically documented clinically relevant information (vital signs, assessment findings, etc.)

Next Steps for Simulations

Seek approval to create a separate unit for simulation

Build a more robust patient profile for each scenario

Instruments – CCEI

The Creighton Competency Evaluation Instrument (CCEI)

- Used in the NCSBN National Simulation Study
- Developed to evaluate student performance and clinical competency with student nurses
- Cronbach's alpha > 0.90
- Content validity 3.78 – 3.89
- No reliability/validity data with use by registered nurses.
- Total score possible = 22

Used as a baseline for all simulation experiences in this study

Instruments - OSCE

Objective Standardized Clinical Evaluation

- Instrument initially developed by faculty at the UTA School of Nursing
- Our team designed each OSCE specifically for each simulation experience – there is no reliability and validity data for these tools.
- Total score possible = range from 22-57, depending on complexity of the simulation

CCEI + OSCE

Combined tools

- General tool with established reliability and validity
- Specific tool without established reliability and validity

Control group

4 of 10 GNs participated in the simulation.

The following units were represented:

Oncology

Medical Surgical

PCU

ICU

Control Group results – CHF/Pneumonia

Four participants completed the only simulation

Scores on OSCE ranged from 34-49 (out of 57)

Scores on CCEI ranged from 11-21 (out of 22)

Interrater scores varied by 0-2 points

Experimental Group

17 of 17 GNs participated in the simulation.

The following units were represented:

Operating Room (4)

Labor & Delivery (2)

Oncology (2)

ICU (4)

PCU (1)

ED (1)

CUB (2)

Telemetry (1)

Experimental group results – Blood administration

Four groups (16 GNs) completed the simulation

Scores on OSCE ranged from 16 - 19 (out of 22)

Scores on CCEI ranged from 17 - 20 (out of 22)

One additional GNs arrived during debriefing – delays were due to their work responsibilities.

Interrater scores varied by 0-2 points.

Experimental Group Results - Hypoglycemia

Four groups (13 GNs) completed the simulation

Scores on OSCE ranged from 16 - 22 (out of 24)

Scores on CCEI ranged from 13 - 16 (out of 22)

One GN was a “no show”, three missed the simulation due to child care issues.

Interrater scores varied by 0-1 point.

Experimental Group Results – CHF/Pneumonia

Eight individuals completed this simulation

Scores on OSCE ranged from 32 - 46 (out of 57)

Scores on CCEI ranged from 7 - 21 (out of 22)

The two lowest scoring individuals worked in Labor and Delivery and the Operating Room.

Interrater scores varied by 0-3 points (exception: two scores varied by more than three using an alternate reviewer)

Comparing the control and experimental groups

| Group | OSCE average | OSCE percentage | CCEI average | CCEI percentage | Percent of group participating |
|--------------|--------------|-----------------|--------------|-----------------|--------------------------------|
| Control | 40.125 | 70.3% | 16.375 | 74.4% | 40% |
| Experimental | 39.812 | 69.8% | 16.375 | 74.4% | 100% |

Lessons Learned / Benefits - Participants

Participants:

- Verbalized what they were thinking - “critical thinking”
- EHR incorporated into the simulation experience
- Utilizing an actual patient room
- Treated the manikin as a “real” patient
- Immediately used the education in clinical practice
- Teamwork was effective for learning
- Interdisciplinary component in the simulation (physician, respiratory therapy, pharmacy, dietary, lab)
- Communication tools in addition to EHR

Lessons Learned / Benefits - Educators

Began a partnership with UTA

Groups of “2”

Gained experience with the research process

Gained a dedicated Simulation Room in the hospital

Lessons Learned / Limitations

- Tis the Season (summer vacations, holidays, working nights)
- “Should we stay or should we go”
- EHR – updated training site
- Clinical experience or lack of
- Patient’s first – scheduled to work
- Groups of “4”
- Participant’s past experience with simulation in nursing school

Future Opportunities

- “Make the impossible – possible” (expansion to multiple rooms/ additional manikins)
- “Spread the love” – continue with all RN hospital wide simulations with inclusion of the EHR
- “Two is Better than One” – continued collaboration with schools of nursing (UTA)
- “Keep Trucking Along” – continue with future GN internships and additional research projects
- Grants....Grants...Grants

Comments from the GNs:

- “You won’t believe but I had a patient with hypoglycemia the day after our simulation....and I knew what to do.”
- “I had no clue where to chart that.”
- “I worked nights but I made time to come in for this.”
- “I would like to see more scenarios of things that we do not see so often.”
- “This was a helpful way to learn.”
- “All GNs need this simulation experience for learning.”

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