Standardized Training for Treatment and Symptom Management

Thursday, May 17 • 9:45–11 am

Note one action you’ll take after attending this session: ____________________________________________

1. A Pilot Study: Standardized Patient Simulation as an Active Learning Strategy in Oncology Symptom Management
   Sherry Burrell, PhD, RN, CNE
   Villanova University
   Villanova, PA

2. Standardizing Excellence: Validating Chemotherapy Administration Competence Through the Use of Simulation
   Lindsay Nemec, MSN, RN
   Froedtert and the Medical College of Wisconsin
   Milwaukee, WI

3. Filling in the Gaps of Chemotherapy Education: Creation of a Chemotherapy Simulation Class
   Christin Reddy, MSN, RN, OCN
   Hospital of the University of Pennsylvania
   Philadelphia, PA

4. Improving Chemotherapy Safety Through Development of an Innovative Annual Chemotherapy Education Program
   Kristen Bink, MSN, RN, AGCNS-BC, OCN
   University of Minnesota Physicians
   Minneapolis, MN
A Pilot Study: Standardized Patient Simulation as an Active Learning Strategy in Oncology Symptom Management

Sherry A. Burrell, PhD, RN, CNE
Assistant Professor
Villanova University
M. Louise Fitzpatrick College of Nursing

Disclosures

• Author Information
  – Sherry A. Burrell & Jennifer G. Ross, Villanova University
  M. Louise Fitzpatrick College of Nursing

• Potential Conflicts of Interest
  – The presenter received an honorarium for revising a medical-surgical nursing textbook chapter for Wolters Kluwer Health.

• Funding
  – Villanova Institute for Teaching and Learning (VITAL)
Background and Significance

- Nurses who care for patients with cancer require specialized knowledge and skills (Kuhrik et al., 2008).
- Symptom management is a core role of the oncology nurse (Brown, 2015).
- Simulation-based learning experience is effective in enhancing registered nurses' knowledge and skills (Kuhrik et al., 2008; Simmers, 2014).
- No research has examined the effect of standardized patient (SP) simulation on oncology symptom management knowledge and skills in nursing students.

Purpose

- To evaluate the effectiveness of SP simulation in enhancing senior baccalaureate nursing students' ability to connect evidence-based symptom management principles gained in theory learning sessions to simulated oncology clinical practice.

Methods: Design and Setting

- Design
  - Longitudinal, Mixed Methods
- Setting
  - Catholic University in the United States
Methods: Simulation Development

- Formative Evaluation
- Overall Goal:
  - Application of evidence-based assessment, counseling and education principles
- Two Scenarios:
  - Outpatient Setting
  - Expert Review
- SP Training

Methods: Simulation Implementation

- Two 20-Minute SP Simulation Scenarios:
  - Students participated in both scenarios in groups of two or three in the role of the registered nurse or observer.
- Structured 40-Minute Debriefing:
  - Following each scenario
  - Debriefing for Meaningful Learning Method (Dreifuerst, 2012)

Methods: Simulation Evaluation

- Pre-Learning Sessions, Pre-Simulation, & Post-Simulation:
  - Evidence-Based Oncology Symptom Management
    - Knowledge
    - Self-Perceived Confidence and Competence
- Post-Simulation Only:
  - Student Perceptions of SP Simulation
  - Student Satisfaction and Confidence in Learning
    - National League for Nursing Instrument (Jeftines & Riggs, 2006)
Findings: Sample Characteristics

- Sample:
  - One section of senior seminar nursing students (N=9)

- Sample Characteristics:
  - Age: 21.0 ± 0
  - Gender: 100% Female
  - Race: 77.8% White
  - Ethnicity: 88.9% Non-Hispanic / Non-Latino

Findings: Self-Perceived Competence

Pre-Learning Sessions  M= 24.11 ± 6.91 (15-38)
Pre-SP Simulation         M= 31.11 ± 4.07 (25-36)
Post-SP Simulation       M= 36.89 ± 2.94 (33-40)
Change Over Time        F(2,16)= 23.21, p < 0.001

Findings: Mean Difference in Competence

<table>
<thead>
<tr>
<th>Comparison of Study Time Points</th>
<th>Mean Difference</th>
<th>Standard Error</th>
<th>Significance (p-value)</th>
<th>95% Confidence Interval</th>
<th>Lower End</th>
<th>Upper End</th>
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<tbody>
<tr>
<td>Pre-Learning Sessions</td>
<td>4.447</td>
<td>2.171</td>
<td>0.006</td>
<td>-1.220</td>
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<td>-9.958</td>
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<td>1.400</td>
<td>0.000</td>
<td>-2.940</td>
<td>-3.292</td>
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</table>

*p-values made to significance for multiple comparisons: Bonferroni correction
Findings: Self-Perceived Confidence

Pre-Learning Sessions  M= 24.44 + 5.64 (17-36)
Pre-SP Simulation         M= 30.44 + 4.56 (21-37)
Post-SP Simulation       M= 35.78 + 4.27 (28-40)
Change Over Time F(1,2,9,8)= 18.27, p = 0.001

Findings: Mean Difference in Confidence

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Mean Difference</th>
<th>Standard Error</th>
<th>Significance</th>
<th>95% Confidence Interval</th>
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<td>Pre-Learning Sessions</td>
<td>Pre-SP Simulation</td>
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<td>Post-SP Simulation</td>
<td>6.811</td>
<td>1.966</td>
<td>0.001</td>
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</table>

All tests used SP significance for multiple comparisons: Bonferroni correction.

Findings: Student Knowledge

Pre-Learning Sessions  M= 3.33 ± 1.23 (1-5)
Pre-SP Simulation         M= 3.56 ± 0.73 (3-5)
Post-SP Simulation       M= 4.00 ± 1.00 (3-6)
Change Over Time F(2,16)= 1.14, p = 0.345
**Findings: Student Perceptions**

Learning Satisfaction (N=5):  \( M = 23.40 \pm 2.07 \) (20-25)

Confidence in Learning (N=5):  \( M = 36.20 \pm 3.56 \) (32-40)

Simulation Perceptions:  \( M = 23.11 \pm 3.44 \) (15-25)

- **Theme One: Realistic Application**
  - “I found it helpful to apply these symptoms on an actual person. It made me think about the actual consequences of the symptoms.”

- **Theme Two: Enjoyable and Helpful**
  - “This was great! One of the best aspects of the seminar.”

- **Theme Three: Suggestions for Improvement**
  - “I would say I’d change the debriefing sessions to be a little more concise so there’s enough time for both groups to debrief quickly.”

**Limitations**

- Small Sample Size
- Lack of Sample Diversity
- Simulation Time Constraints
- Lack of Existing Instruments

**Discussion**

Implications:

- Due to the small and homogeneous sample, the findings must be interpreted with caution.
- Further research is needed to support and improve the generalizability of findings.

Conclusions:

- SP simulation holds promise, as an active learning strategy, to enhance undergraduate nursing students’ ability to apply evidence-based symptom management principles gained in the classroom to simulated oncology clinical practice.
Key Takeaways

- Nursing students lack the requisite knowledge and skill needed to effectively manage cancer symptoms in the clinical practice setting.
- SP simulation was associated with improved student competence and confidence with oncology symptom management principles and a high-satisfaction with and confidence in learning.
- SP simulation holds promise to enhance student competence and confidence with learning evidence-based oncology symptom management principles.

References


Standardizing Excellence: Validating Chemotherapy Administration Competence Through the Use of Simulation

Lindsay Nemec, MSN, RN
Clinical Nurse Educator

Disclosures

• I have no relevant financial interests or relationships to disclose with commercial entities that produce, market, resell, or distribute health care products or services that are used by patients.
Objectives

• Describe our process for implementing a simulation based chemotherapy competency for inpatient and outpatient oncology infusion staff
• Discuss the benefits and challenges of using simulation as a form of competency validation

Froedtert & the Medical College of Wisconsin

• Located in Milwaukee, Wisconsin
• Cancer Service Line is comprised of:
  – Inpatient oncology units
    • 70 beds
  – Outpatient Cancer Network
    • Five locations across Southeastern Wisconsin

Acknowledgements

• Cancer Service Line staff
  – Rebecca Martin, BSN, RN, OCN, BMTCN
  – Colleen McCracken, BSN, RN, CMSRN, CHPN, OCN
  – Denise Portz, MSN, RN, ACNS-BC, AOCNS
  – Acicia Hopf, MSN, RN

Thank You!
**Background**

- “Train the trainer”
- Lacked consistency and reliability

**Simulation Center**

**Collaboration**

- Standardized patient scenarios
  - Inpatient
    - RICE regimen
  - Outpatient
    - AC regimen
Collaboration

- Clinical environment

- Epic Team

Planning the Simulation

- Competency checklist
- Automatic failure points
  - Performs independent double check
  - Verifies two patient identifiers
  - Applies proper PPE
  - Verifies IV/CVAD patency and blood return
Successful Completion

- Demonstrate 80% of the competency checklist steps
- Self identify mistakes

Evaluation

- 263 nurses participated in the competency simulation
- Survey

Evaluation – Survey Results

- Survey completed by 106 nurses (40% response rate)
  - 98% believe it's important to have a standardized method for validating chemo competency
  - 82% agreed that the simulation allowed them to self identify discrepancies in their own practice
  - 84% learned from any mistakes made during their simulation
Evaluation – Survey Results

- Level of confidence pre and post simulation
  - 70% had a high or very high rating before and after the simulation
  - 16% saw an increase in their confidence level

- Years of Oncology Infusion Experience
  - Less than one year: 16.0%
  - 1-2 years: 22.6%
  - 3-5 years: 17.9%
  - 6-10 years: 19.8%
  - Greater than 10 years: 23.6%

Evaluation – Survey Results

- Nurses’ satisfaction with simulation
  - Average overall rating 4 out of 5 stars
  - 14% people rated the simulation at 1 or 2 stars
  - 58% had no prior experience with simulation

Benefits

- Simulation is easily replicated for use in future years
- Focus on different aspects of chemotherapy administration depending on the drug regimen simulated
  - Different routes of administration
  - Vesicant administration
  - Administration of highly reactive drugs
Benefits
- Time away from patient care activities
- Standardized process
  - Noted discrepancies:
    - Variations in the use of PPE
    - Safe practices regarding connecting and disconnecting IV tubing

Challenges
- Time requirement for creation of a simulation
- Staffing

Takeaways
- Simulation provides a way to standardize validation of chemotherapy administration for all nurses across clinical settings
- Highlighted discrepancies can be addressed
- Creating a simulation experience allows for modification in subsequent years to focus on different key elements of chemo administration
Acknowledgements

• Sim Center staff
  – Jessica Rotier, MSN/Ed, RN, CHSE, CMSRN, CNE
  – Shannon Schonenberg, M.A.Ed
• Epic Beacon team
  – Kim Harris, BA, CCRP
  – Sarah Trapp
  – Meg Johnson, BS

References

Filling in the Gaps of Chemotherapy Education: Creation of a Chemotherapy Simulation Class

Christin Reddy, MSN, RN, OCN
Hospital of the University of Pennsylvania

Disclosures

• I do not have anything to disclose.
Acknowledgements

My wonderful education support team at HUP:
• Kristen Bink, MSN, RN, AGCNS-BC, OCN
• Theresa Gorman, MSN, RN, AOCNS, BMTCN
• Kristen Maloney, MSN, RN, AOCNS
• Rachel Mea, MSN, RN, OCN
• Amy Moore, MSN, RN, ACNS-BC, AOCNS

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• Beth Smith, MSN, RN-BC

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• Michelle Biala, BSN, RN, OCN
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• Lisa DiGico, BSN, RN
• Pamela Engle, MSN, RN, OCN
• Rachel Klinger, BSN, RN, OCN
• Samantha Ludwig, BSN, RN, OCN
• Ashley Stallworth, MSN, RN, OCN

The Hospital of the University of Pennsylvania (HUP)
• Located in Philadelphia, PA
• 789 bed quaternary academic medical center
• Part of the University of Pennsylvania Health System
• Magnet designated since 2007
• Annually recognized as one of the nations best by U.S. News & World Report in its Honor Roll of best hospitals.

<table>
<thead>
<tr>
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<th>Number</th>
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<tr>
<td>Professional Nurses</td>
<td>1,980+</td>
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</table>
**Oncology at the Hospital of the University of Pennsylvania**

- 5 inpatient acute care oncology units
- 122 inpatient beds
- Around 200 oncology nurses
- Oncology RNs onboarded in 2017: 59

**Importance of Chemotherapy Education**

- High risk medication
- Complex treatment options
- Safety for nurses, patients and other staff
- Constant changes and additions to chemotherapy agents
- Ensure competency in chemotherapy verification and administration

**Identifying a Gap in Knowledge**

- Transition to online ONS/ONCC Chemotherapy Biotherapy Certificate Course
- Loss of in person hospital based course
- Lack of education on specific institution policies & procedures
- Need for hands on training for use of closed system transfer device chemotherapy tubing and electronic documentation
Building the Class

• **Who:**
  - Team of educators and clinical nurse specialists
  - Clinical nurse champions
  - Audience: new to practice and new to oncology nurses as well as chemotherapy certified nurses on non-oncology units

• **What:**
  - 4 hour class: 2 hours lecture, 2 hours hands on practice
  - Highlighting important aspects of online ONS course
  - Providing institution specific education on policies, procedures, expectations and documentation

• **When & Where:**
  - Monthly class
  - Location: classroom equipped with computers & with adequate space for hands on practice with chemo tubing

Course Objectives

• Review the chemotherapy order verification process
• Review the chemotherapy administration process
• Demonstrate administration of continuous and secondary chemotherapy
• Demonstrate administration of IV Push chemotherapy
• Review safe handling of chemotherapy and spill management

Course Plan

• Chemotherapy Verification & Practices Specific to UPHS Policies
• Chemotherapy Administration
• Safe Handling:
  • Administration Safety & Spill management
  • The Learning Curve – Tips & Resources
• Simulation: Hands on practice
Challenges

- Change from paper to electronic documentation
- Training of new clinical nurse champions
- Addressing variations in practice
- Logistics

Successes

- Increasing confidence of novice, new to oncology and non-oncology nurses
- Leadership roles for clinical nurses as champions
- Creating collaboration across nursing units
- Standardization of practice

Impact of Course

- Novice new graduate nurses
- Experienced nurses new to oncology
- Chemotherapy certified nurses on non-oncology units
- 2016: 64
- 2017: 60
Impact of Course

March 2016‐December 2017 Overall Nurse Evaluation of Chemo Simulation Course: 4.9/5

Comments from nurses attending the simulation course:

• "I feel much better about chemo after seeing it in practice & then working on it in simulation"
  "Great hands on experience, lecture was very helpful."

• "Excellent program for new oncology nurses! Especially info regarding best practices/policy versus what is done on the floor! Practice setting up chemo tubing was very important & helpful!"
  "Great class, good pace & instructor. Feel very good after this class about administering chemo"

• "Very helpful in going over the process of hanging chemo in my practice. Very engaging – I liked that it was hands on & I was able to go through the administration process. Very well put together."
  "This program gave me the knowledge I need to safely administer chemo and the proper way to hang"
  "Helps to make us more comfortable giving chemo for the first time"

Discussion

• Have other institutions encountered similar education gaps with moving to the online ONS/ONCC Chemotherapy/Biotherapy Certificate Course?
  • What have you done to fill these education gaps?
  • Do you feel a similar class is needed or would be beneficial in your setting?
  • How are other institutions handling education and training for non oncology nurses?

Key Takeaways

• Intensive chemotherapy education and training utilizing multiple learning modalities is needed to ensure nurse competency and safety in chemotherapy verification and administration.

• Supplementing the ONS/ONCC Chemotherapy/Biotherapy Course with a chemotherapy simulation course focused on institution specific policy, procedure and documentation is one way to fill gaps in chemotherapy education.

• Continued evaluation of chemotherapy education is needed to identify learning needs and create new learning opportunities to ensure competency and safety for nurses administering chemotherapy.
Thank You

References


Improving Chemotherapy Safety through Development of an Innovative Annual Chemotherapy Education Program

Kristen Bink, MSN, RN, AGCNS-BC, OCN
Clinic Manager II
University of Minnesota Physicians

Disclosures

• Nothing to disclose
It takes a team

• Christin Reddy, MSN, RN, OCN
  – Oncology Nurse Educator
• Christina Harker, BSN, RN, OCN
  – Clinical Nurse IV
• Hospital of the University of Pennsylvania oncology nursing team—Thank you!

Objectives

• Review chemotherapy education recommendations
• Discuss gap around formal annual education
• Review one institution’s implementation

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<tr>
<td>Professional Nurses</td>
<td>1,800+</td>
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</table>
Significance

- 1.68 million new cancer cases in 2016 (NIH, 2017)
- Complex, ever changing therapies
- Stress of healthcare environment
- To Err Is Human (IOM, 1999)
- 650,000 patients receive chemotherapy annually in outpatient setting (CDC, 2017)

Background

- Oncology Nursing Society and American Society of Clinical Oncology Safety Standards 2016 (Neuss et al., 2016)
  - Domain 1: Creating a Safe Environment
  - At least annual ongoing continuing education requirements
  - Comprehensive education program
- USP 797 and USP 800
  - Practice and quality standards for handling hazardous drugs
  - Focus on patient safety, worker safety, and environmental protection
  - Initial training with annual component

Education

- Continual on the job learning
- Informal and formal

- Gap
  - Analysis of current state demonstrated gap in formal chemotherapy specific education
Intervention

• Small work group
• Developed structure for formal, annual chemotherapy-specific education
• Nursing focused
  – Pharmacy and provider collaboration
• Education department
  – Learning management system

Adult Learners

• Knowles’ adult learning principles (Pappas, 2013)
  – Experience and mistakes makes the basis for learning
  – Interest in learning concepts that have immediate relevance
  – Problem-centered approach

Structure

• Case study based
• Three themes:
  1. Frequent events
     • Review of event reporting including near misses
  2. Areas of high risk
     • Highlight a high risk, low volume skill
  3. New therapy
     • Constantly evolving pharmaceutical therapies
• Length of educational program
Year One Outline

- Oral chemotherapy administration
- Vesicant administration technique
- Pembrolizumab indications
- Event review

Outcomes

- Successful development of program!
- Assigned to over 280 chemotherapy certified nurses in 2017
- 100% completion rate

Lessons Learned

- Collaboration
- Evaluation
  - Unable to have formal evaluation of program
  - Informal feedback
    - Overall extremely positive
    - Needed to review the IV push vesicant administration guidelines
    - Liked details on newer chemotherapy agents
Key Takeaways

• Annual chemotherapy education is a necessary piece of a comprehensive chemotherapy educational program.
• Chemotherapy administration is a complex, ever-changing skill set that requires surveillance and ongoing education.
• Using templated case studies for annual chemotherapy education is one way to standardize educational offerings.

References

• The United States Pharmacopeial Convention. USP General Chapter <800> Hazardous Drugs- Handling in Healthcare Settings.