

# Room of Errors: An Active Learning Strategy to Reinforce Safety in the Nursing Program

Christina Lawver<sup>1</sup>, Shauna Keil<sup>1</sup>

<sup>1</sup>(Department of Nursing, Fort Hays State University, United States of America)

---

## **Abstract:**

**Background:** *Fostering nursing students to begin assessing potential errors, in addition to recognizing and prioritizing concerns regarding identified errors upon entering a patient's room. This active learning strategy promoted nursing students to identify and correct these preventable errors, therefore, increasing patient safety and outcomes.*

**Materials and Methods:** *Each group of students was read a script and were given five minutes to identify and write down as many errors as observed. Next, students prioritized the top three errors that cause concern, the rationale for each concern, and three potential findings that could result in a medication error.*

**Results:** *Students were able to identify forty of the forty-two possible errors, The lowest number of errors that a nursing student recognized was eight and the highest number of errors discovered was twenty-two.*

**Conclusion:** *The Room of Errors is a fun and exciting way to actively engage nursing students while allowing the students to identify and prioritize errors thus applying critical thinking skills in a safe learning environment. Moreover, this activity can assist nursing faculty to identify specific patient safety interventions that need to be reinforced and evaluate student knowledge regarding patient safety and their prospective role in it.*

**Key Words:** *Nursing Students; Active learning strategies; Patient safety; Error identification*

---

Date of Submission: 28-04-2022

Date of Acceptance: 10-05-2022

---

## I. Introduction

Creating a safer healthcare system will depend on the ability of nurses to fully use their knowledge and skills to identify, interrupt, and correct medical errors to prevent patient harm<sup>1</sup>. The healthcare environment requires that nurses practice to the full extent of their education, experience, and role to keep patients safe and avoid errors<sup>2</sup>. The ability to recognize common and preventable errors is important to improve patient outcomes and improve safety.

Errors are actions that fail to meet their desired outcome<sup>3</sup>. Errors include actions that cause physical or psychological harm and may also be referred to as adverse events<sup>4</sup>. Errors can range from medication errors to falls to acquiring an infection or pressure ulcer. Errors may prolong hospitalization, result in death, increase cost of care, and increase suffering<sup>4</sup>. Nurses should link nursing practice to fundamental improvements in patient safety and quality care<sup>5</sup>. Nursing faculty at a rural Midwestern university wanted to help students become aware of the types of errors that can occur in practice and implemented a Room of Errors activity. This teaching project was chosen to help students recognize errors in the clinical setting. Many errors are preventable, and increased awareness may decrease errors in practice.

A Room of Errors is an activity where students assess a patient setting and determine what is incorrect and could contribute to patient safety concerns. A Room of Errors is also called a room of horrors in some literature. The first identified use of a Room of Errors was an activity on Quality and Safety Education for Nurses (QSEN) in 2009 by an instructor at South Dakota University<sup>6</sup>. A Room of Errors is a way to educate students about the hidden dangers commonly found in a clinical setting and allows students an opportunity to investigate a clinical environment with multiple errors that may cause patient harm<sup>7</sup>. Errors can include medication errors (wrong patient, allergies to medication), risk factors for falls, inappropriate hand hygiene, inappropriate isolation precautions, risk factors for skin breakdown, broken equipment, inappropriate patient monitoring, and more<sup>4</sup>.

A Room of Errors is flexible and practical, making it easily adapted to different learning goals and settings<sup>8</sup>. This teaching activity has been used in a variety of settings with different environmental focuses that all have the same goal of bringing awareness to potential safety hazards in the healthcare setting. Examples ranged from pediatric patients<sup>9</sup> to a focus in the operating room<sup>10</sup> to a 'Crib of Horrors'<sup>11</sup> in an emergency room<sup>12</sup>.

Many examples in the literature include activities designed for interprofessional collaboration of healthcare disciplines. This included nursing students, medical students, faculty, staff nurses, pharmacists, and

respiratory therapists<sup>4</sup>. Nurses and nursing students interact with patients, families, providers, respiratory therapy, physical and occupational therapy, case management, lab technicians, nursing aides and more. Each group can contribute to patient safety or cause patient harm. A “Room of Horrors” at a healthcare system found that participants stated the activity was both educational and beneficial<sup>8</sup>. The activity is a feasible and effective way to introduce and reinforce safety-focused content<sup>13</sup>.

Many studies used the same room for all students, but another study set up three rooms with identical errors<sup>13</sup>. Faculty could also design an activity using a group of rooms that each have different errors. For example, one activity utilized four patient rooms that each had a different focus such as risks for the patient care, fall risks, and environmental risks<sup>14</sup>. A Room of Errors activity is flexible depending on the needs of the participants and the limitations of the setting.

Students take both didactic and clinical courses. Clinical courses include simulation which has positive feedback from students and is an active learning strategy. It is possible to lecture about errors, give examples or errors or show videos to provide this information. However, this teaching strategy allowed students to be active learners and identify the errors they see. There is also a competition to see which student in each cohort identifies the most errors which is often motivating.

## **II. Material And Methods**

All nursing students in a small midwestern university Bachelor of Science in Nursing (BSN) program participated in the Room of Errors as part of their practicum courses. The students were asked to identify errors that put patient safety at risk. Furthermore, they were instructed to prioritize the top three errors. Students were then debriefed in the corresponding theory courses on the errors in the room. For this activity, the instructor leads a discussion on the errors and the potential impact on the patient. In the literature, a review of the missed hazards was often done in subsequent lectures, while some debriefed immediately after the activity<sup>7</sup>. Student grades were not based on the number of errors identified, but rather on a post-activity reflection. The students reflected on how the activity affected their awareness of errors.

As with all activities conducted in the simulation lab, strict confidentiality about the experience was maintained. Students were instructed not to discuss the activities with peers as this would be considered academic dishonesty. The number of errors each student identified were reviewed, and the student in each cohort who identified the most errors was awarded a prize. This provided an incentive for the student to do their best and maintain confidentiality.

There are many variables that may impact a student’s ability to recognize errors. These include where they are in their nursing education and previous experiences in healthcare. Therefore, the current semester in the program, if they work as a certified nurse’s aide (CNA), and how long they’ve worked as a CNA was collected as demographic information on the worksheet to record the errors identified. This helped determine if prior knowledge and experience played a role in the identification of errors].

The Room of Errors took place in the skills lab. The skills lab is a large classroom that has one side divided into five small rooms separated by curtains. Each area is set up as a patient room. The room includes a bed with a mannequin, bedside table, nightstand, IV pump and pole, oxygen, sharps container, hand sanitizer, and gloves. The skills lab also has a classroom area that has tables and chairs. This set-up allowed five students to complete the activity simultaneously which decreased the instructor’s workload.

The individual rooms were set up with the exact same errors and separated by curtains. Errors will include medication errors, room safety for the caregiver, fall risks, safety hazards for the patient, patient safety issues, and more.

**Study Design:** Mixed methods

**Study Location:** A small, rural midwestern university in the United States

**Study Duration:** The study was conducted over one day during the fall semester of 2021

**Sample size:** 89 students

### **Procedure methodology**

IRB approval was obtained from the university. Informed consent was obtained by the students. The instructor read a script to each group of students to ensure that the same information was given to all students. The students had five minutes to identify as many potential errors as they could. Students recorded errors on a provided piece of paper. Students then identified and justified their top three errors.

### **Statistical analysis**

Quantitative data was analyzed using descriptive statistics. Qualitative data was assessed from the rationales of the top three errors from each student as well as gathered using the open-ended question: “How did this activity increase your awareness of patient safety as you enter the room?”. To accomplish this, students’

answers were put in a spreadsheet and examined by reviewers. Themes were identified including increased awareness of small details, the effect on patient safety, and development of critical thinking skills.

### III. Results

A total of 89 students completed the room of errors. The lowest number of errors was identified as 8 and the highest number was 22. There was a total of 42 possible errors and 40 of those errors were identified at least once.

#### Quantitative Data

**Table 1:** Descriptive statistics of the number of errors found by each cohort

Cohort	Lowest number of errors found	Highest number of errors found	Average for cohort
First Semester	9	21	15.08
Second Semester	8	21	14.96
Third Semester	12	22	15.82
Fourth Semester	12	20	16.6

**Table 2:** Descriptive statistics of the top five errors identified

Top Five Errors	Number of Students Identified	Percent of Students Identified
Cigarettes on bedside table	75	84%
BP cuff on left arm (nothing on left)	69	78%
NPO with food at besides	68	76%
Open pills at bedside	62	70%
IV needle at bedside	59	66%

#### Qualitative Data

In addition to identifying errors, students were asked to explain the top three errors that could cause the most harm and why as well as explain how the activity helped increase awareness of patient safety when entering the room. Students justified top errors with explanations that they could cause patient injury or death. This included discussion on medication errors such as orders for medication that the patient is allergic to and basic patient rights not being addressed such as missing allergy band and having a do not resuscitate band on when a full code.

Students were overwhelmingly positive of the experience. Students frequently mentioned how the activity increased their awareness of the small details. Students remarked that they used critical thinking skills in not just identifying the error but how it could potentially affect the patient. Students also often focused on the patient and this activity increased the awareness of the environment around the patient. It also showed the ease at which a small error could impact the patient and the importance of slowing down and double-checking the environment before leaving a patient's room.

### IV. Discussion

Students enjoyed the activity. It was unique and a fun learning experience that included a bit of competition. Students asked to do it again and immediately wanted to know the errors involved. The timing worked well in that students had five minutes in the room to evaluate the errors and five minutes to reflect. Groups did not run over and that was a concern that may have occurred. The time in the room to identify errors could be increased. Students felt like they ran out of time and students may have maxed out how many errors they could find in the time allotted. The pre-briefing was read to the students prior to the activity but this could also be possibly sent out in advance, so students are familiar with the patient and scenario.

Participation from cohorts varied. All the first semester and second-semester students participated. These cohorts were awarded points for completion of the assignment. This activity was discussed in the classroom on how it increased awareness of patient safety. Students also utilized the activity when they attended

clinical and evaluated patient rooms for safety. Participation was optional for the senior-level student. These third and fourth-semester students had about half of the students in the course complete the activity.

## V. Conclusion

This activity is not a traditional experience of lecture in the classroom or a typical simulation. It is applying information learned throughout the program in the classroom, labs, simulations, and clinical. The activity itself may highlight deficiencies in the curriculum that may need to be reinforced. The identification of specific errors or lack of identification of errors for a cohort may help the instructor lead a discussion that can reinforce these errors. It may also help instructors evaluate teaching and if the content is not being taught.

Students are asked to reflect on this activity and if it impacted their awareness of patient safety. The feedback from students may help improve the activity in future semesters or give faculty other ideas on how to bring focus to patient safety. If students are not able to identify the minimum number of errors, the curriculum or the focus of the fundamentals course may need reevaluation. If students can identify all the errors, the activity may not have been needed. This type of activity has not been done previously in the nursing program. The Room of Errors is feasible, sustainable, and affordable. Faculty can use equipment set up in a variety of learning environments and use expired equipment<sup>4</sup>. This makes it easy for any hospital or school to do.

## References

- [1]. Gaffney T, Hatcher B, Milligan R, Trickey A. Enhancing patient safety: Factors influencing medical error recovery among medical-surgical nurses. *Online J Issues Nurs*. 2016;21(3). doi:10.3912/ojin.vol21no03man06
- [2]. American Nurses Association. *Nursing: Scope and Standards of Practice*. 3rd ed. Silver Spring, MD: 2018.
- [3]. Institute of Medicine. *To err is human*. 2000. doi:10.17226/9728
- [4]. Clay AS, Chudgar SM, Turner KM, et al. How prepared are medical and nursing students to identify common hazards in the intensive care unit? *Ann Am Thorac Soc*. 2017;14(4):543-549. doi:10.1513/annalsats.201610-773oc
- [5]. Institute of Medicine. *The future of nursing: Leading change, advancing health*. <https://www.ncbi.nlm.nih.gov/books/NBK209881/>. Published 2011. Accessed April 29, 2022.
- [6]. Arens R. Little room of errors. <https://qsen.org/little-room-of-errors/>. Published July 28, 2009. Accessed April 29, 2022.
- [7]. Shekhter I, Rosen L, Sanko J, Everett-Thomas R, Fitzpatrick M, Birnbach D. A patient safety course for preclinical medical students. *Clin Teach*. 2012;9(6):376-381. doi:10.1111/j.1743-498x.2012.00592.x
- [8]. Löber N, Garske C, Rohe J. Room of horrors: A low fidelity simulation practice for patient safety-relevant hazards of hospitalization. *Z Evid Fortbild Qual Gesundheitswes*. 2020;153-154:104-110. doi:10.1016/j.zefq.2020.05.010
- [9]. Hausman S. "Room of errors" saves lives. WVTF. <http://wvtf.org/post/room-errors-saves-lives#stream/0>. Published June 2, 2014. Accessed April 29, 2022.
- [10]. Turrentine FE, Schroen AT, Hallowell PT, et al. Enhancing medical students' interprofessional teamwork through simulated room of errors experience. *J Surg Res*. 2020;251:137-145. doi:10.1016/j.jss.2020.02.001
- [11]. Korah N, Zavalkoff S, Dubrovsky AS. Crib of horrors: One hospital's approach to promoting a culture of safety. *Pediatr*. 2015;136(1):4-5. doi:10.1542/peds.2014-3843
- [12]. Olson AS, Olson N, Wilson JL, Muck AE, Garcia R, Balhara KS. Room of horrors: A pilot curriculum to enhance nurses' patient safety awareness. *Ann Emerg Med*. 2018;72(4):S18-S19. doi:10.1016/j.annemergmed.2018.08.043
- [13]. Farnan JM, Gaffney S, Poston JT, et al. Patient safety room of horrors: A novel method to assess medical students and entering residents' ability to identify hazards of hospitalisation. *BMJ Qual Saf*. 2015;25(3):153-158. doi:10.1136/bmjqs-2015-004621
- [14]. Flexner R, Strayer R. Safety bundle simulation day. Published February 14 2017. Accessed April 29, 2022. <https://qsen.org/safety-bundle-simulation-day/>

Christina Lawver, et. al. "Room of Errors: An Active Learning Strategy to Reinforce Safety in the Nursing Program." *IOSR Journal of Research & Method in Education (IOSR-JRME)*, 12(03), (2022): pp. 01-04.