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# Simulating medical isolation: Communicatively managing patient and medical team safety

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**Abstract:** Reducing hospital acquired or associated infections (HAIs) is a national public health priority. HAIs pose risks to patients, visitors, and medical personnel. To better understand how to communicatively manage safety in medical isolation, data was collected with nursing students simulating medical isolation in a high-fidelity simulation with a medical mannequin with *C. difficile*. Observations of nursing students and faculty revealed four distinct communication practices: social support, patient education, humor, and storytelling. Conclusions include recommendations to intentionally design these communication practices into high-fidelity medical isolation simulations and scale up these communication practices in routines of safety.

**Keywords** — high-fidelity simulation, safety, hospital acquired infections, medical isolation

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## INTRODUCTION

The Centers for Disease Control and Prevention [1] reported in Vital Signs publication that more than 119,000 people developed bloodstream staph infections with nearly 20,000 deaths attributed to the infections in 2017. Staph (MRSA) along with *C. difficile*, central line-associated bloodstream infections (CLABI), and catheter-associated urinary tract infections (CAUTI) are examples of hospital associated infections that pose a great risk to patients. Reducing or eliminating hospital acquired or associated infections (HAIs) is a national public health priority in the US with actionable efforts such as the *National Action Plan to Prevent HAIs: Road Map to Elimination*. With the rapid advent and level of contagion of Covid-19, further concerns have developed related to protecting hospital workers and medical personnel from contracting infectious diseases like this while at work [2]. To this aim, nursing education simulations expose students to in-care isolation of patients that pose a risk to their own health and the health of other patients. This study focuses on the communicative management of clinical isolation to prevent HAIs in a critical care nursing simulation.

## LITERATURE REVIEW

Education and training of students socializes them to the roles, values, practices, norms, and culture of their future professions [3] and much research has investigated the socialization of nursing education to nursing performance. To enhance nursing performance, nursing education has invested in the physical, temporal, and human resources to develop and implement high-fidelity simulations. High-fidelity simulations are learning environments designed to mimic reality. Categorized as experiential learning, high-fidelity simulations bridge gaps between theoretical knowledge and its application in the performance of practical skills. Within nursing education, high-fidelity training and simulation increasingly depend on the realism afforded by labs, equipment, and medical mannequins. The aim of these learning environments and tools is to enhance clinical judgment, team performance, and skill-based practice [4].

Despite the investiture into high-fidelity simulations, nursing licensure pass rates and perceived readiness for practice indicators only tangentially support high-fidelity simulation effectiveness [5]. The reason often given for this lack of

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evidence is variation in the quality of pre-briefing, scenario, and debriefing design. Furthermore, scant research from a communication perspective has offered insight into the role of communication in high-fidelity nursing simulations. From a communication perspective, we argue that communication constructs the learning environment and relationships between students, faculty, and non-human patients and can help students manage simulation learning outcomes such as reducing HAIs. We sought to learn more about high-fidelity simulation design in the context of HAI reduction to address the question: How do nursing students communicatively manage medical isolation in high-fidelity simulations to reduce the spread of HAIs?

## METHODS

The co-authors gained access to an undergraduate nursing simulation laboratory and obtained IRB permission to observe faculty and students in the simulation control room and in the simulation lab. Students were given information sheets and/or shown an informative video explaining the study, informed consent process, and the role of the researcher. Despite having permission from the director of the school of nursing to observe, every faculty member and student signed individual consent forms as well. Ethnographic methods were employed in this study through observation, participant-observation, and ethnographic interviews. While the data for this study was collected as a part of a larger project with over 50 hours logged in observation, this study focuses on the medical isolation simulation, which took place with three groups of students over a 5 hour period of observations. Field notes were taken pre-brief, scenario, and debrief. During the scenario, nursing students were followed as they negotiated care for two patients simultaneously: 1) pre and post-operation patient transitioning from recovery to a room and 2) a medical isolation patient who contracted *C. difficile* after a surgery. Afterwards, field notes were typed up resulting in 10 pages of single-spaced dialogue, descriptions, initial interpretations, and sketching.

Data analysis drew on constructivist grounded theory. In an iterative process, we moved between open and axial coding refining our codes segment-by-segment in field notes until we determined themes that typified relationships between codes. With a focus on communicative construction of the learning environment and management of HAIs, we settled on four prominent themes: social support, patient education, humor, and storytelling.

## RESULTS

To address the central research question, “How do nursing students communicatively manage medical isolation in high-fidelity simulations to reduce the spread of HAIs?” we offer the following themes: social support, patient education, humor, and storytelling.

### *SOCIAL SUPPORT*

Comforting communication is characterized by verbal and nonverbal expressions that function to reduce stress and emotional anguish [6], and social support is comforting communication that can be instrumental or tangible (e.g. information, actions, resources) and/or psychological (e.g. encouraging words, emotional validation). Social support was observed in student-student, faculty-student, and student-patient relational contexts. First, student-student social support was both instrumental and psychological. Students offered instrumental support in the simulation by demonstrating how to tie a medical apron in front more quickly than tying it in back or offering to prepare medicine or check medical charts. Students also offered psychological support by using encouraging statements like, “It will be ok.” Second, faculty-student social support was both instrumental and psychological. Faculty, primarily in pre-briefing and debriefing, cued students to locations of supplies, reminded students of learning objectives, directed students to skill-based expectations, and modelled expectations. In terms of psychological support, faculty praised students’ performances or offered empathy for the competing role expectations that they had to manage. Third, student-patient support was accomplished through empathy, direct questions, reframing limitations, and patient education, and faculty animated patients to cue students to perform role expectations if they forgot (e.g. cueing to introduce oneself entering the patient room). Overall, social support communicatively constructed a learning environment that valued relationship development, peer and faculty derived knowledge and skills, and correcting mistakes *in situ*.

### *PATIENT EDUCATION*

Patient education is instructional communication to increase awareness and/or learn a skill related to one’s own health care and maintenance. Nurses engage in impromptu and planned as well as formal and informal patient education, and with regard to HAIs, patient education is considered an effective tool in prevention and management that nurses can use to reduce the spread of HAIs [7]. In the medical isolation simulation, students were prompted by the animated patient to answer questions about diet, personal protect equipment, and limited visitors, thus, requiring students to engage in impromptu, informal patient education about the patient’s *C. difficile* infection – how the patient contracted it and how the infection impacted the patient’s care to prevent its spread to healthcare workers and other patients. Students negotiated with the patient to gain her compliance in eating a breakfast she did not want to eat and to increase her understanding about limited visitors. Students also spent time and energy caring for the patient’s symptoms, including a

pungent and sticky re-creation of diarrhea, all the while empathizing with the patient and normalizing the patient's experience with information about the HAI. While formal, planned HAI patient education was not used by students, informal, impromptu HAI patient education comprised the bulk of the interactions between students and the patient.

### *HUMOR*

While nursing literature has noted the value of humor as a communication intervention in patient care [8], the humor observed in the medical isolation was largely in student-student, faculty-student, and faculty-faculty interactions. Whether it was the student exiting the patient room cursing under her breath for forgetting to dispose of her personal protective equipment on the way out and the ensuing laughter as another student overheard her, or it was the faculty sickened by the smell and stickiness of their own diarrhea concoction that they chuckled at as they tried a second and third time to cleanse, laughter broke the intensity of many simulation situations that arose. This is not surprising. Humor researchers note the value of humor to produce "a cognitive-affective shift or a restructuring of the situation so that it is less threatening" and releases emotion [9]. Humor functioned as a tension release and means to recover from simulation errors.

### *STORYTELLING*

In addition to communicating through social support, patient education, and humor, students and faculty used storytelling to share narrative accounts of past nursing experiences or of the scenario in the simulation to pass on tacit knowledge. The debriefing period following the simulation exhibited the most storytelling and faculty, especially, selected stories to recount with students that were relevant to simulation learning objectives. Interestingly, faculty shared many stories but rarely were those stories directly related to managing HAIs in past clinical contexts. This observation surprised us given the value nursing education places on faculty experience and storytelling [10]. Therefore, we noted that faculty and students valued storytelling to in the learning environment but did not express or make relevant connections between past HAI experiences the the simulation.

### **DISSCUSSION**

Given that communicative practices added value to HAI reduction in medical isolation simulation, we recommend a greater emphasis on communication so that routines of safety are normative and communicatively constructed and maintained. Communication practices to reduce HAI reduction in high-fidelity simulation should: 1) prioritize communication-oriented knowledge and skills in pre-briefing, 2) reframe high-fidelity failures as learning opportunities, and 3) capitalize on debriefing to discuss communication and to use communication skills like humor and storytelling to enhance reflection and learning. First, pre-briefing is a period of time prior to the simulation that primes student nurses for enhanced performance in the simulation. Pre-briefing often includes activities such as reading, written assignments, and discussion of the knowledge and skills that will be used in the scenario. We argue that medical isolation pre-briefing include a discussion of communication practices, not just medical practices, and communication-oriented reading and written work. Considering the role of patient education in the scenarios observed, patient education pre-briefing is a natural fit to prime nursing students for their roles in medical isolation scenarios. Patient education in pre-briefing may enhance students' ability to answer patient and visitor questions regarding isolation and the risk of HAIs. For example, student nurses could create a patient education resource to use in the medical isolation simulations.

Second, pre-briefing and debriefing discussions should frame high-fidelity failures as opportunities for learning. Inevitably, students verbalized, "This is not real, anyway," or like statements when they forgot their personal protective equipment or removal thereof. Faculty animating medical mannequins noted limitations of technology in the lab when students were unable to perform an injection or get a vital sign reading on machines. Rather than apologizing for breaks in high-fidelity, these breaks are communicative cues *in situ* or de-briefing to explicitly discuss what could or should have happened and how to manage it.

Third, structured debriefing includes feedback and reflection directly following the scenario, and as a peer-peer and peer-instructor dialogue, debriefing is poised to explicitly explore simulation communication and how it limited or enabled HAI reduction. In addition to discussion communication within the scenario, debriefing can harness the power of humor and story as strategic communication tools. With caution, nursing instructors should consider the value of humor and storytelling to help students engage in retrospective sensemaking, cope with the stress of high-fidelity simulations, and discuss clinical practices and judgment.

### **CONCLUSION**

Communication constructs the high-fidelity, experiential learning environment for student nurses, and focusing on instructional communication and students' communication knowledge and skills may enhance their medical isolation performances to reduce HAIs. Nursing socialization through simulation tends to focus on medical knowledge and clinical judgement to demonstrate its value to outcomes such as licensure testing and perceived professional readiness. This may be at the expense of intentional integration of communication into pre-briefing, scenario, and debriefing.

Communication management of HAIs may be scaled up from simulation to clinical practice, subsequently, complicating and enhancing approaches to HAI reduction. Additional studies need to demonstrate the value of communication, not just instrumental communication (e.g. introducing oneself to the patient, asking the patient diagnostic-related questions), to learning outcomes, especially with regard to timely issues like reducing HAIs.

### Author Biography

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