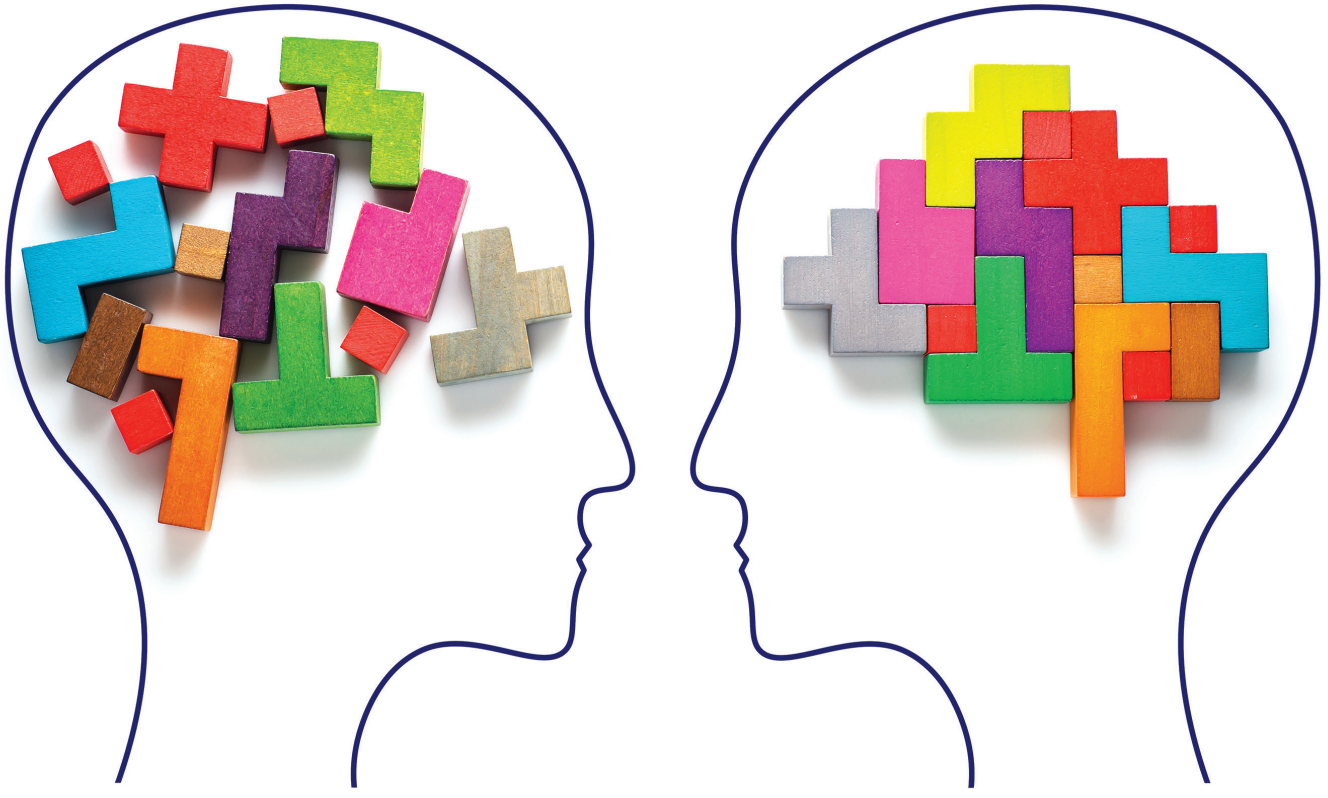
An Oncology Nurse Residency Program Improves Knowledge of Delirium in Older Patients with Cancer



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Patients with cancer may experience delirium during their treatment journey, which is why it is critical to identify delirium early on to prevent complications, especially in geriatric populations. Patients commonly experience delirium during an acute hospitalization or in the terminal stages of cancer.[1] Iatrogenic delirium can complicate hospital stays for more than 2.6 million older persons because it increases fall risk, restraint use, hospital length of stay, and post-acute placement and costs.[2] Most added post-acute hospital costs are usually due to an increased need for institutionalization, rehabilitation, and home care, which can range from $16,303 to $64,421 per patient.[3] Within the past two years, 19 percent to 28 percent of patients discharged from Moffitt Cancer Center in Tampa, Fla., experienced at least one episode of delirium during their hospitalization period.

Based on these data, providers must be able to assess for and identify delirium early and intervene appropriately to reduce and prevent delirium-associated complications.[4,5] Accordingly, Moffitt used interprofessional, patient-centered simulated case scenarios to help nurses enrolled in its oncology nurse residency program develop greater knowledge of delirium. After this education, Moffit found that the oncology nurse residents who participated in the simulation learning scored higher on the Geriatric Institutional Assessment Profile survey on delirium and dementia knowledge than medical and surgical unit nurses. Knowledge acquisition, as reflected by these test scores, does not always translate into clinical practice; however, simulation can provide application exercises for improving patient outcomes.

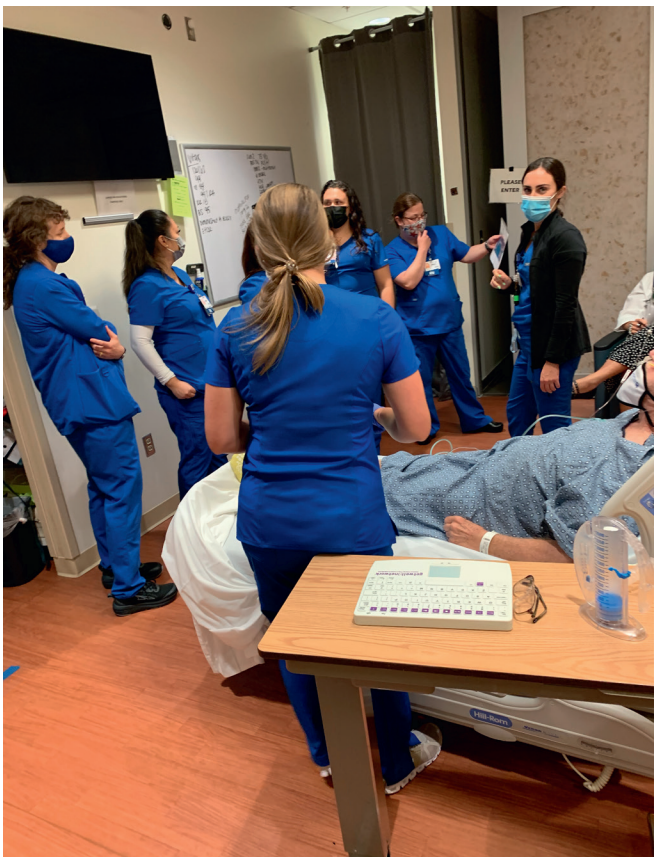
Moffitt's Oncology Nurse Residency Program

Moffitt Cancer Center is a National Cancer Institute-designated, Magnet-designated, and Nurses Improving Care for Healthsystem Elders (NICHE) exemplar comprehensive cancer center that provides inpatient and outpatient adult oncology care. Moffitt has 204 designated inpatient beds with a daily census of 160 patients, and patient days average 5,800 hours. Twenty-seven ambulatory units provide 250,000 clinic visits, and approximately 9,500 surgical procedures are done annually. Forty percent of all discharges are for patients over the age of 65.

In addition to time spent in the classroom and in simulation, oncology nurse residents meet with their residency group monthly to reflect on their collective experiences and challenges.

Moffitt developed its Oncology Nurse Residency Program in February 2013 to facilitate a smooth transition from a novice to a competent clinician and to promote the adoption of oncology as a specialty practice. A goal of this program was to create an environment where newly-licensed nurses could practice safely and accurately. Moffit understood that a formal residency program could enhance participants' critical thinking and clinical decision-making skills.[6]

Prior to moving into the clinical area to begin unit orientations with preceptors, Moffitt's newly licensed nurses complete a classroom orientation. Face-to-face didactic courses weave case discussions, concept mapping, and group work through the program.[7] Highlights of the curriculum are displayed in Table 1, page 49.



Nurse residents in the post-operative delirium simulation with the standardized patient.

Residents begin a unit-based orientation that is tailored to their focused population, such as surgical oncology, in which skills and competencies include, but are not limited to, tracheostomy care or chest tube management. Web-based training modules and hands-on practice include chemotherapy and immunotherapy workshops, as well as blood and marrow transplant or interventional radiology procedures. This unit-based orientation is generally completed within 12 to 16 weeks.

For the first 12 months of practice, Moffitt's oncology nurse residents participate in programs outside their unit for one day a month. Oncology nursing is a diverse specialty that collaborates with several interprofessional teams.[8] Rotating with the respiratory therapist, registered dietitian, or the chaplain assists the novice with integrating evidence-based care into their individual practice.

In addition to time spent in the classroom and in simulation, oncology nurse residents meet with their residency group monthly to reflect on their collective experiences and challenges. This reflective practice leads residents to develop insights and assists in closing the gap between theory and practice.

Simulation is a multi-modal example of the experiential learning model, which creates a safe environment for the learner to practice and enhance their critical thinking skills while prioritizing the goal of improved patient outcomes.[9] Clinical simulation promotes communication among participants, development of heightened skills, and the opportunity to practice decision-making in the moment.[10] Learners are more likely to retain content when it is grounded in clinical experience. This experiential learning environment is key to the development of participants' critical thinking, because nurses must be able to put theory into practice.[11]

A component of NICHE is to provide a platform to offer organizations foundational geriatric education. Understanding the unique needs of older adults with cancer is one area of focus for Moffitt's nurse residents, including education and training on how to take the Geriatric Institutional Assessment Profile. This tool was foundational in the development of the older adults with cancer course curriculum at City of Hope, a comprehensive cancer center,[12] and is discussed below.

The Geriatric Institutional Assessment Profile

This tool is a self-completed survey that was developed in 1999 and revised over time for healthcare team members to assess an intuition's preparedness in implementing a geriatric program.[13,14] The current version of the Geriatric Institutional Assessment Profile is made up of 133 items, which require about 15 minutes to complete. It assesses the respondent's attitudes regarding care for the older adult, knowledge of guidelines in caring for the older adult, knowledge of best practices for common geriatric issues (i.e., pressure injuries and/or ulcers, medications, sleep, pain, restraints, falls, functional decline, incontinence, dementia, delirium, nutrition, and hydration), and perceived institutional strengths and barriers to best practices in caring for older adults.[15,16]

In 2014 Moffitt asked nurses and patient care technicians to complete the Geriatric Institutional Assessment Profile and had a response rate of 43.3 percent. As a new NICHE[17,18] organization, the survey provided important baseline data to prioritize geriatric initiatives.[18] Moffitt repeated the survey in 2016 and had an increased response rate of 79.1 percent. The results of these surveys helped Moffitt identify targeted education priorities in the NICHE program, leading to NICHE exemplar status in 2017.

The Geriatric Institutional Assessment Profile includes mentation knowledge assessment practices related to delirium and dementia. In the initial Geriatric Institutional Assessment Profile survey administered in 2014, the baseline mean knowledge scores of Moffitt's registered nurses (RNs) on delirium and dementia were n = 237 (5.1). These scores were significantly lower than the average scores when benchmarked against NICHE hospitals throughout the United States of a similar size and teaching status: n = 4,785 (5.36). To target this knowledge deficit, the geriatric oncology specialist developed a self-study module on delirium in older patients with cancer and made it a requirement of the mandatory yearly education of all RNs.[19-21]

Traditional learning methods, such as self-study modules, provide content in an asynchronous fashion, which requires the learner to review content and complete a post-test to validate learning. Although this style of learning is a self-directed strategy,

Table 1. Residency Curriculum
Clinical Decision Making & Documentation
Communication & Therapeutic Relationships: Empathy, Health Literacy, and Bias
Ethical Challenges & Evidence-Based Practice
Experiential Learning & Psychomotor Skills: Oncology Topics
Delegation
Prioritization
Self-Care
Problem-Based Learning Simulations: End of Life and Post-Operative Delirium

it is less effective when unaccompanied by a second teaching strategy. It has been reported that about 80 percent of content learned in this format is forgotten the next day and 80 percent of any remaining content fades from memory within one month.[22]

Moffit developed a pilot program to compare delirium-related knowledge scores between traditional learning groups and a sample group whose learning was enhanced by delirium clinical simulation (Figure 1, above). Moffitt received support and approval from its nursing leadership and the Nursing Research & Innovation Council to proceed with the pilot program.

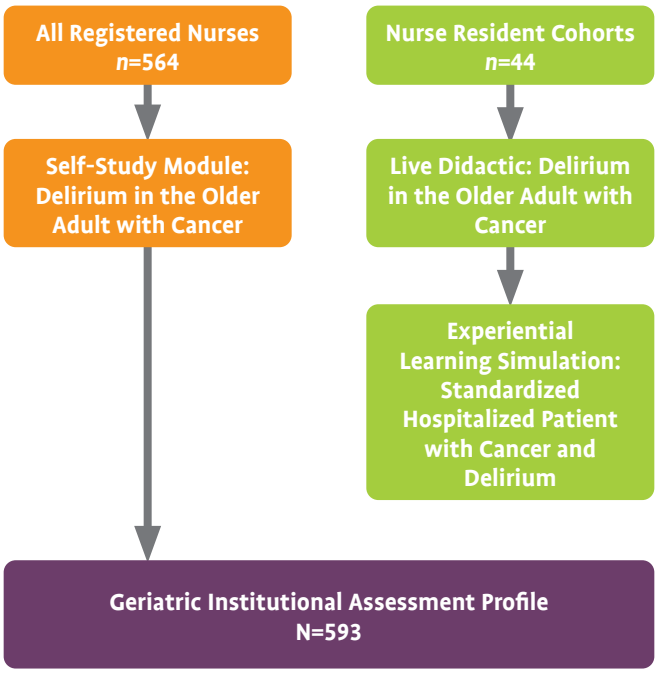
Validating the Pilot Program

In 2016 Moffitt piloted the delirium simulation case study in addition to a didactic lecture on a cohort of newly-licensed RNs as a part of the new nurse residency curriculum. This dyad of learning activities was included in the following two cohorts of oncology nurse residents. All three cohorts (n = 44) identified themselves as part of their combined cohorts instead of as part of their home nursing unit during the 2016 Geriatric Institutional Assessment Profile reassessment. This allowed Moffitt to directly compare knowledge acquisition and learning activities for those nurse residents who participated in the delirium simulation.

Moffitt developed an inter-professional simulated case study of standardized patients, which required the participation of a primary nurse, provider, respiratory therapist, and a standardized patient who was played by a patient advisor. Before participating, patient volunteers trained in patient- and family-centered care with the goal of compassionate care. This delirium simulation is an enhanced learning scenario and was introduced to oncology nurse residents after a geriatric clinical specialist provided a didactic presentation in which learning objectives ask participants to:[23]

- Identify presentations of the subtypes of delirium.

Figure 1. Delirium Education Process for Registered Nurses Versus Nurse Resident Cohorts



- Review risk factors for the development of delirium in the older adult with cancer.
- Apply interventions to reduce the onset of delirium.
- Describe the initial workup of delirium in a hospitalized patient.
- Use the Confusion Assessment Method for screening of suspected delirium.

The simulation scenario is an 82-year-old male recovering from prostate surgery. The residents are divided into groups of no more than five, who work together to assess, manage care, administer medications, and communicate with providers. A patient advisor (who is a cancer survivor) participates as the standardized patient for this simulation. The patient demonstrates evidence of delirium. Residents use the Confusion Assessment Method, evaluate causal factors for delirium, and notify the provider of their findings. Debriefing allows the patient and residents to identify deficiencies and areas for improvement.

Outcomes

In 2016, 593 cancer care team members completed the Geriatric Institutional Assessment Profile survey, which was benchmarked against 53,291 respondents of all NICHE member hospital staff who completed the survey that year. The sample represented a 79.1 percent response rate—females comprised 79.2 percent of those surveyed. Direct care team members, or frontline patient care providers, surveyed included nurses (54.3 percent of respondents) and nursing assistants (10.79 percent of respondents) with

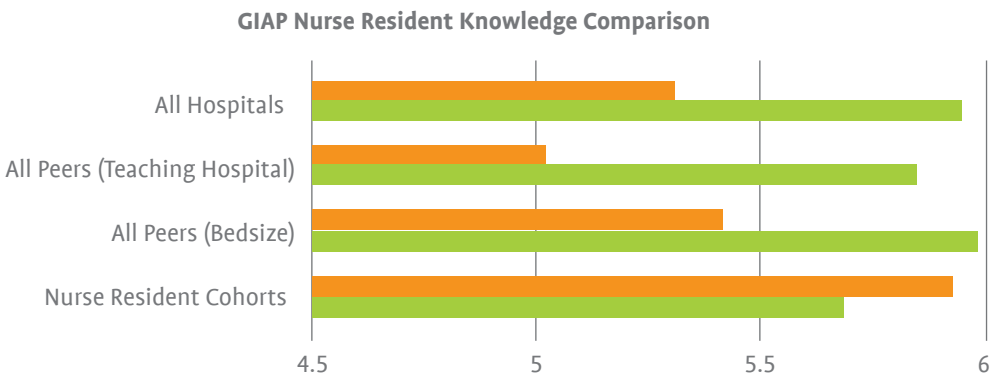
Nurse residents in the post-operative delirium simulation with the standardized patient.

an average of about 15 years in the nursing profession and 6.85 years spent at an educational institution.

Registered nurses were instructed to identify their primary patient care area when completing the Geriatric Institutional Assessment Profile. The nurse residents were directed to classify themselves as an independent cohort and be excluded from their clinical units. This provided Moffitt a separate knowledge comparison of the cohorts who participated in the delirium simulated learning activity. The Geriatric Institutional Assessment Profile dementia and delirium knowledge score of the oncology nurse residents who participated in the simulation (5.91) was significantly higher ($p < 0.05$) than all peer bed size, all peer teaching status, and all hospital comparison groups, as shown in Figure 2, below.

The oncology nurse residents who participated in the simulation learning also scored higher on the Geriatric Institutional Assessment Profile's delirium dementia knowledge than their medical and surgical unit nurse counterparts. Oncology nurse residents who were within one year of graduation may be anticipated to score higher on all knowledge scores compared to experienced nurses who have been removed from the standardized testing practice. There was no significant difference in the average total knowledge scores between medical and surgical nurses. After evaluating the impact of the simulation intervention, higher scores were demonstrated among the overall total oncology nurse residents' knowledge scores in relation to comparison groups. These data show that the simulation learning activity improved delirium scores and not overall knowledge. Peers scored higher than residents on total knowledge, suggesting that simulation learning

Figure 2. Knowledge Scores of Delirium and Dementia



	Nurse Resident Cohorts	All Peers (Bedsize)	All Peers (Teaching Hospital)	All Hospital
KNOWLEDGE DEMENTIA/DELIRIUM	5.91	5.39	5.01	5.29
TOTAL KNOWLEDGE	5.67	6	5.86	5.97

may have impacted the Geriatric Institutional Assessment Profile scores of nurse residents.

Implications for Practice

This project's results are limited to the Moffitt Cancer Center, where the three consecutive cohorts of oncology nurse residents were compared to a baseline of Geriatric Institutional Assessment Profile scores of all inpatient oncology nurses, including oncology nurse residents. Though knowledge acquisition reflected by test scores does not directly translate into clinical practice, simulation learning experiences can improve education of nursing staff, especially those new to oncology, by integrating strategies to increase confidence.[24] These types of simulations require time, resources, and labor (both facilitator and nursing staff time); however, broadening the scope of simulation learning experiences to all cancer care team members who provide direct patient care—while using patient outcome measures, such as a deteriorating condition—may provide additional evidence-based education opportunities.[25] Improving outcomes related to hospital-acquired delirium may be translated into delirium prevention.[26] OI

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