Development of a Behavioral Change Strategy to Improve the Safety of Nursing Medication Administration

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Medication incidents are mostly preventable and include errors such as administering the wrong medication, wrong dose, or using the wrong route of administration. Researchers have found that preventable medication errors occur with 3% of patients across medical care settings.[1] Approximately 1 in 30 patients is exposed to preventable and harmful medication administration adverse outcomes, and more than a quarter of this harm is considered severe or life-threatening.[1] The prescribing and monitoring stages of medication administration are key opportunities to prevent harm. In this article, we present how we developed a behavioral change strategy to improve the safety of nursing medication administration.

Nurses play a crucial role in medication administration processes. To effectively improve nursing medication administration safety, an in-depth understanding of the context of safe nursing medication practice is required. While researchers have not robustly explored the complexities of nursing practice and nurses' reasoning skills surrounding the process of medication administration, organizational culture and unit microcultures may play a role. In a systematic review exploring the impact of nurses' attitudes on patient outcomes, researchers found a significant association between nurses' safety attitudes and medication errors.[2] Lower standards of medication administration practice, or normalized deviance, can develop over time, especially when there are no adverse events occurring. While researchers have identified several factors related to lack of adherence to safety processes, little is known about effective strategies that increase nurses' compliance with evidence-based medication administration policies and procedures.

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BACKGROUND

The Nursing Council at IWK Health, an academic health sciences center located in Halifax, Canada, providing tertiary and primary care for women, children, youth, and families, set a goal to address and improve the safety of nursing medication administration. Nurses at this Council examined adverse event data from across the hospital and, applying the Pareto principle, identified 4 areas of concern regarding medication administration errors that needed to be addressed to improve the safety of medication administration: (1) independent double-checking of high alert medications; (2) peripheral intravenous infiltrations; (3) medication administration record use at the point of administration; and (4) infusion pump overrides.

IWK Health believes the approximately 1000-nurse workforce possesses the knowledge, skills, and attitudes to inform and lead nursing practice. The phrase "nursing leading nursing" demonstrates a cultural commitment to a nursing shared governance model whereby nurses have shared decision-making ability and accountability for nursing practice and can influence decisions impacting nursing care. With this philosophy in mind and to optimize behavioral change, point-of-care nurses first validated the 4 identified areas of concern related to safe medication administration and then led the development of a behavioral change strategy to improve nursing medication administration safety.

METHODS

Discussions about nursing practice, policy, research, engagement, and health care trends occur within IWK Health's Nursing Council. From this Council, a new action-oriented project group was formed to investigate how to address and improve nursing medication administration. Aligning with shared governance, this group took a person-centered approach[3] with their work. Despite having point-of-care nurses and nurse directors in the group, hierarchy was removed and leadership within the group was distributed. The nurses identified their agreed ways of working together and held one another accountable to these expectations. The experience, perspective, and expertise of each nurse were invited and valued throughout the strategy development.

Because behavioral change was identified as a fundamental requirement to improve nursing medication administration safety, the group adopted a change management approach to understand and address current practices. The work was informed by principles from several change management methodologies including practice development,[4] Crucial Learning's Influencer model, and Prosci's ADKAR model. As this work was initiated during the pandemic, monthly virtual meetings were held where person-centered processes were used to optimize participation and engagement (Table 1). Given the complexities of improving nursing medication administration practice, the group took the time to be comprehensive with the foundational work of understanding the complexities and context of current nursing practice. Nurses involved in the project engaged in robust small- and large-group virtual discussions to complete the preliminary change management tasks of:

1. Envisioning what results they wanted to achieve for each of the 4 foci of the project;
2. Identifying the vital nursing behaviors required to attain the identified outcomes; and
3. Considering intrapersonal, social, and structural factors, diagnosing why nurses were not already engaged in these behaviors by investigating whether there were motivation or ability issues preventing nurses from consistently performing the vital behaviors.

Once there was a solid understanding of current nursing clinical practice, the group then identified specific strategies that would motivate and enable nurses to perform the vital nursing behaviors and incorporate them as routine nursing practice. Over the course of a full year, nurses engaged in these activities, investigating and strategizing, to determine how to improve the safety of nursing medication administration.

RESULTS

Having developed a comprehensive understanding of what nurses needed to do to improve nursing medication administration safety, why they were not already doing these things, and how nurses could be motivated and enabled to incorporate the identified vital behaviors into their practice, the identified strategies were organized, categorized, and transformed into work plans related to the 4 areas of concern. In total, 100 objectives were identified to improve nursing medication administration safety.

With 4 areas of concern, it was anticipated that there would be 4 work plans. However, as nurses in the group worked with the various identified strategies to improve nursing medication administration, a fifth work plan from the 100 objectives was identified to address global issues. This work plan included items that were

Table 1. Person-Centered Processes of Group

Developing agreed ways of working together and holding one another accountable
Including intentional human connection activities at commencement of each meeting
Inviting everyone to participate as leaders rather than assigning specific roles
Working in small groups to share power and amplify individual voices prior to full group discussions and decision making
Inviting everyone to participate in work occurring at meetings as well as completed between meetings
Including process and outcome evaluation at conclusion of each meeting

Table 2. Working Groups and Sample Objectives

Priority 1 Working Groups	Objectives
Leadership	• Award leadership points • Communicate nursing medication administration behaviors to patients and families so they will understand expectations
PIVIE bundle	• Implement PIVIE bundle • Develop criteria for PIV catheter removal
MAR use at the point-of-administration process	• Explore options for dedicated medication administration workspaces • Develop and test care area-specific processes to bring MAR to bedside
Independent double-checks for solo nurses	• Develop policy for nurses working independently • Initiate safe medication administration huddles to identify person for double-check
Infusion pump functionality	• Investigate opportunities for pumps to better alert when being overridden or infusing high alert and/or vesicant medications
Meaningful stories	• Create meaningful stories that connect nurses to medication safety
Education and communication strategy	• Develop an education and communication plan specifically to address areas related to 4 foci including simulation • Develop competency in using error prevention techniques and holding one another accountable for practice issues
Role models and champions	• Identify and develop role models to champion and normalize safe medication administration • Mentor nurses to have safe medication administration conversations
Pharmacy	• Add an alert to Pyxis when high alert medications are being removed • Engage pharmacy to champion MAR to point-of-administration at the care area level
Independent double-check space planning	• Optimize medication rooms for flow, noise, required resources, and access to charts and laboratory results • Install doorbell and/or light to indicate when assistance is needed in medication rooms
PIV insertion competency	• Develop algorithm to guide PIV insertion efforts • Make tools and resources that support PIV insertion readily available 24/7
Priority 2 Working Groups	**Objectives**
Patient safety	• Develop improved processes for sharing safety event data
Documentation	• Clarify and streamline documentation requirements between various documents
High alert medication list	• Review and reduce high alert medication list requiring independent double-checks
Culture	• Cultivate a culture of collaboration in care areas and across organization
Pump competency	• Develop process to identify and address medications that always need overrides in specific care areas
Parking lot	• Optimize strategic thinking regarding opportunities for effective practice and translating knowledge to practice
Delegated	• Develop a formal clinical mentorship program

Abbreviations: MAR, medication administration record; PIV, peripheral intravenous; PIVIE, peripheral intravenous infiltrations and extravasations.

beyond the scope of the project group and/or were systemic and applicable to much more than improving nursing medication administration; these were assigned to other committees outside of the project.

The work plan objectives were further organized on the basis of shared and individual tasks from the work plans, and 18 action areas emerged for the work. These action areas became working groups. Recognizing there were too many working groups to immediately initiate, the project group worked to prioritize the working groups and to determine a more manageable starting point. Various strategies were utilized to identify priority working groups including how the work could be scaffolded together and in consideration of work that was already underway within the hospital. After discussion, nurses on the Nursing Council voted to identify the priority working groups. Alongside a Leadership working group that connected the project group to the hospital's senior leaders, 10 priority working groups were identified. The 18 working groups and a sampling of their objectives are presented in Table 2.

Based on their individual interests, nurses joined the priority working groups. One nurse from each working group organized a first meeting to discuss the working group's coleadership model, membership, and the assigned objectives to be actioned. Each working group determined their meeting schedule and how they would achieve their objectives. The working groups regularly report their progress at the Nursing Council and engage nurses there in discussions and any required decision-making.

CONCLUSION

Nursing practice affects the safety of clinical practice, including during nursing medication administration. IWK Health developed a behavioral change strategy to improve nursing medication administration by investigating nursing behaviors and practice. Using an action-oriented and person-centred[3] approach, nurses identified 4 areas of concern for the safety of nursing medication administration. Applying change management methodology, nurses diagnosed problematic nursing behaviors and practice issues and strategized how to motivate and enable vital nursing behaviors that would improve the safety of nursing medication administration. Focused around the 4 areas of concern, nurses developed a 100-objective strategy to improve the safety of nursing medication administration. Having nurses who understand the complexities and context of nursing practice lead an action-oriented and person-centered approach while applying a change management methodology is an effective way to develop a robust and actionable behavioral change strategy to improve the safety of nursing medication administration.

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