

ENHANCING MEDICATION SAFETY TEACHING THROUGH REMEDIATION AND REFLECTION

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Introduction

Medication dosage calculation competencies has been a mandatory rite of passage through nursing school as well as practice. It is difficult to argue the importance of examining this competency in nurses who are most often the professional administering the medications and serve with the patient and family as the last chance for error prevention. Despite the enormity of the safety implications surrounding medication dosing and administration there is little evidence to guide us in best practices for teaching.

Specific Aims

- 1) Knowledge-Examine human factors and other basic safety design principles as well as commonly used unsafe practices.
- 2) Skill-Participate appropriately in analyzing errors and designing system improvements.
- 3) Attitudes-Appreciate the cognitive and physical limits of human performance. Value own role in preventing errors

Teaching Strategy

This strategy to improve acquisition of safety KSAs with medication dosage calculation has an added element of remediation and reflection. Students first complete a comprehensive on-line learning module to prepare for the test. On-line courses are available for purchase associated with commercial textbooks, can be designed by faculty, and some are available free via internet. A few examples can be found here and here. Many pharmacology texts and resources also have dosage calculation and medication administration content. Students takes “practice” tests throughout the module. Prior to being permitted to administer medications in the clinical setting students must compete a 10 question medication administration/dosage test with 100% success. Students have three attempts to achieve this competency.

Evaluation

The guide for reflection includes;

- 1) How did the error occur? Was it a calculation error (math error or formula error)? Was it a “silly” error (not checking or going to fast)?
- 2) Consider if this error occurred in practice, describe how you would handle the issue?
- 3) How would you monitor the patient if this error occurred?
- 4) How would you feel if you were involved in this error in clinical practice? Where would you turn for support?
- 5) What steps could you or would you take to prevent an error of this nature from occurring again? Are you familiar with strategies used in healthcare facilities to prevent medication errors? If so, please describe the strategies.

Teaching Implications

Remediation and reflection are two educational models. Reflection has a great deal of evidence to support its effectiveness in fostering critical thinking in nursing education. Remediation, the act of correcting, is gaining momentum in the nursing education field. Pairing both of these models has proven to be anecdotally successful in enhancing medication dosage calculation learning.

Students reported enjoying the process of reviewing and remediating their error. The comments bring forward a broad range of feelings and questions, likely not those raised by the straight forward dosage calculation exam.

Examples of student reflection responses:

- “My patient would have been fluid overloaded and short of breath.”
- “I could have killed my patient.”
- “The patient would have needed a pacemaker.”
- “I would feel terrible if I made this error. Do nurses have to apologize?”
- “I didn’t ever know what carvedilol was while I was taking the test?”
- “Can nurses split a pill in half”
- “What if I didn’t even realize I made an error? Who double checks me in real life.”

