



# Preparing Nurses for Medication Administration with Realistic Simulation

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## Overview

A recent study found that in one nursing program, 25 percent of junior level students failed their first attempt when taking a medication administration exam (MAE).<sup>1</sup> With additional simulation time, scores for students went up drastically on the MAE as compared to students who only had additional classroom and lecture time.

With increasingly fewer clinical hours and limited access to electronic orders, student nurses get very little exposure to real life medication administration and are failing to learn key components of passing medications. This paper will describe how you can improve students' medication administration skills by creating a realistic simulation environment. Simulation suggestions include having access to an electronic charting system like EHR Tutor, and practice medications like Practi-Meds sold by Wallcur.

## Introduction

Up to 6.5% of patients who enter a hospital will fall victim to a medication error.<sup>2</sup> Nurses are the last step in the medication administration process and are the most important link to ensure patients are safely given medications while in an inpatient facility. Not only are nurses responsible for reviewing orders and assessing patients before giving medications, but they often have to do quick dosage calculations at the patient's bedside while juggling a barcode scanner and EHR system.

As clinical hours continue to decrease for nursing students, it's important that we provide a realistic environment to familiarize students with all aspects of the medication administration process. Using an electronic charting system like EHR Tutor along with practice medications like Practi-Meds, it's possible to fully prepare students for the workplace.

With realistic simulation encounters, the next generation of nurses will graduate prepared for real life medication administration and will have the potential to drive down medication errors within hospitals.

## Gaps in Education related to Medication Administration

### Decreased Clinical Time

As clinical hours become increasingly difficult to acquire, students are getting less real life experience passing medications to patients at clinical facilities, which leads to students having very little hands on experience with medication administration. In fact, the issue with decreasing clinical hours led to a recent study by the National Council of State Boards that showed that students could replace up to 50% of their clinical hours with simulation and perform no worse on the NCLEX.<sup>3</sup> There are many factors causing the decrease in clinical hours that spurred the need for more simulation.

First of all, competition for clinical sites is higher than ever. With the current nursing shortage, there are fewer nurses to cover the patient load on the floor of any inpatient facility. The limited number of staff members restricts how many nurses are available to work with students.<sup>4</sup>

The clinical facilities that do have the resources to accept students are highly competitive for schools to enter. Schools may be selected based on prior relationships with a clinical facility or based on the facility's needs. For example, ANW in Minneapolis prefers to hire nurses with four year degrees and/or graduate degrees and their administration often uses clinical visits as a way to familiarize potential hires with the facilities. Because of that, they prefer nurses in BSN or graduate programs. Unfortunately, that means that two year colleges and technical school lose out on the majority of clinical opportunities with



that facility. Across the country similar situations are arising, leaving quite a few schools coming up short on clinical time.

With clinical hours dwindling and simulation hours becoming integral to a nurse's education, it's increasingly important to provide realistic medication administration practice in a lab setting.

## Limited Access to Electronic Health Records

Even for those schools with secured clinical facilities, the ability to chart at those facilities is often limited. Ask any Nursing Instructor and you'll find that access to the EHR systems at clinical facilities is becoming harder to find.. Allowing students free reign to chart can be a liability to the facility considering all information in approved EHR systems is permanently recorded. Should a student dispense a medication properly but make an error on the chart, that error could be tracked in any legal debate surrounding a patient's care.

Unlimited access to a patient's information can also lead to privacy concerns. To prevent any potential HIPPA violations, hospitals occasionally allow students to access EHR systems only through an instructor or staff nurse's account. Unfortunately that means that any charting done would be under the instructor or RN's name, which prevents the account holder from allowing students full access to many of the charting features. This is also not best practice related to nursing documentation and can create legal problems for the facility.

## Medication Errors Directly Related to poor Medication Administration practices

According to American Nurse Today, "Administration errors account for 26% to 32% of total medication errors."<sup>5</sup> It's crucial that we find a way to minimize those errors by properly educating our future nurses.

One of the leading issues with medication administration is the confusion that results from similarly named and packaged medications. "From 2003 to 2006, 25,530 such errors were reported to the Medication Errors Reporting Program". Nurses simply aren't familiar enough with the minor differences between medications because they don't know what to look for on the package. Without getting hands on experience with vials, patches and pill packets, nurses can find it difficult to differentiate between medications.

Errors in dosage also account for a large portion of medication administration errors. While there are few studies that examine medication errors caused by improper calculation alone, we do know that many nursing students and current nurses do not fare well when it comes to medical math tests. According to a test administered for a Nursing Times article, most student nurses and registered nurses failed the drug calculation test (92% and 89% respectively).<sup>6</sup>

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The amount of medication errors in the United States is staggering, and the only way to solve it without increasing clinical time is with a more realistic simulated experience. Students must receive hands on experience with every step of the medication administration process.

## Solution: Realistic Simulation

In lieu of clinical hours, realistic simulation must be available to nursing students when it comes to practicing medication administration. “The NCSBN National Simulation Study: A Longitudinal, Randomized, Controlled Study Replacing Clinical Hours with Simulation in Prelicensure Nursing Education.” has recently agreed that simulation can be effectively used to teach clinical skills. In fact, replacing up to 50% of clinical hours with quality simulation does not decrease pass rates for the NCLEX as measured against a control group of students.

When considering increasing simulation hours, it’s imperative to replace clinical time with realistic, *quality* simulation. For example, students must be given context rather than solely being directed to complete skills. This can be done by sharing a patient chart in an electronic charting system, like EHR Tutor, in order to give a “whole patient” view of a scenario. For example, what allergies does a patient have? What is the patient’s diagnosis? Is he/she in stable condition and are there any other factors to consider before dispensing a particular medication? Rather than just seeing a medication as an isolated order, it’s important for students to see and consider the entire patient as a whole.

From that point forward, it’s important to provide students with the opportunity to simulate every single step of the medication administration process in order to form good habits. Students should be able to gather information on the patient and then move to physical skills including identifying the correct pill packet or vial, opening the medication packaging and dispensing the medication properly. Students should be able to scan the patient and medication barcode and then record the medication properly in the patient chart. Every process students will do with real patients is necessary to do in a lab setting, otherwise they will either slow down or, worse, make errors when administering medications to live patients.

## Using EHR Tutor and Wallcur’s Practi-Meds to Create Realistic Simulations

To create a realistic simulation environment for medication administration it’s important to have two things: an electronic charting system and a set of practice medications. EHR Tutor and Wallcur conveniently integrate so you can now use any Practi-Meds along with the full MAR capability of EHR Tutor including barcode scanning functionality.

First of all, the context given to a student by reviewing a patient chart before simulation allows students to use critical thinking skills to assess the situation before passing a medication. Instructors can use EHR

Tutor's prebuilt patients for simulation, edit the prebuilt patients to include additional orders or create patient scenarios from scratch. Once a patient chart is chosen for the simulation, students will be able to assess allergies, view orders and review the patient's situation beforehand. Those skills can help not only with NCLEX pass rates, but also with basic medication administration skills like those tested with the MAE mentioned in the introduction.

Secondly, the combination of EHR Tutor and Practi-Meds allows students to physically do each step of the medication administration process. Instructors can make sure to show a patient chart in EHR Tutor with orders for the Practi-Meds purchased for that lab. Orders can always be added or edited to fit the practice pills, vials or patches on hand.

After reviewing the patient's chart, students use a barcode scanner plugged into any device with internet access to scan the barcodes for both the patient and the Practi-Med, exactly as they would at any hospital with an electronic charting system. EHR Tutor integrates with all Practi-Meds barcodes so students can scan the standard barcode on any medication produced by Wallcur. After scanning the patient and medication, students have the ability to record the proper information. To solidify math skills and practice finding the correct dose, students can enter work done to get to the right dose in the additional comments field within the EHR Tutor MAR.

By doing each step of the medication administration process including barcode scanning, students get a chance to practice the hands on aspect of scanning and recording a medication. That way, when they administer medications in real life, the process will be entirely familiar.

## Sources

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