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Educating the Healthcare Community About Safe Medication Practices

Ensuring competency and safety when onboarding newly hired professional staff–Part I

The academic curricula for many healthcare practitioners often do not sufficiently cover topics such as medication safety, medication-use systems, and basic medication prescribing, preparation, and administration. In addition, the recent nationwide surge of respiratory viruses coupled with staff resignations has left many healthcare organizations in a hiring frenzy. Newly hired healthcare practitioners strive to do their best, but certain safety practices require specific education and repeated practice. This is true for all healthcare practitioners, including physicians, nurses, pharmacists, pharmacy technicians, and other licensed practitioners. What happens when their risk monitors fire and tell them, "I don't know how to do that!"? Are organizations promoting a culture in which staff feel safe to stop and ask for help before getting in over their heads? Or do new healthcare practitioners find themselves in a position where they must troubleshoot issues on their own as they go, making assumptions and guessing to avoid the risk of losing respect? (See our previous publication, ***Be Wary of "Misspeakers" Who "Shoot from the Hip"*** [www.ismp.org/node/559].)

In **Part I**, we identify problems and make recommendations to best ensure competency and promote a safety culture during the onboarding process. This includes the importance of encouraging new hires to ask for help when a new or unfamiliar task arises. In **Part II**, which will be published in an upcoming issue, we will discuss the value of medication safety simulation during onboarding.

Not Having a Colleague Available to Answer Questions

Given the shortage of staff present during a given shift, part of the challenge is that there might not be anyone available for new staff to ask for help. This can occur if an individual has not been designated to oversee the new hire during their training period, or if the designated individual was not provided with dedicated time for training and is busy with other tasks.

New Staff Hesitant to Admit a Lack of Competency

When new practitioners want to make a good impression on supervisors and colleagues, they might be afraid to speak up and admit that they do not feel comfortable with or do not know how to complete a particular task. The pressure to impress others could result in medication errors that eventually reach patients. Consider why a healthcare practitioner might hesitate to ask for help in the following scenarios:

A new physician ordered a dose of propofol to be administered to a patient for procedural sedation. When the physician arrived at the bedside, they were told that due to limitations of the scope of nursing practice, nurses were not allowed to administer certain sedation medications, including propofol. Although the physician had no experience "pushing" medications, they were expected to draw up and administer the dose.

*A night pharmacist received a phone call from a nurse asking for an **EPINEPH**rine infusion to be sent STAT to the unit for a critically ill neonate. Since the sterile compounding technician had left earlier in the evening, the pharmacist asked a newly hired pharmacy technician to quickly compound the infusion. The technician had no prior experience working in a compounding room on their own. The technician previously heard the pharmacist expressing that they preferred to*

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what's in a Name?

The "-vastatin" drug stem name

Medications that end with the suffix "-vastatin" belong to a class of medications known as antilipemic agents or hydroxymethylglutaryl coenzyme A (HMG-CoA) reductase inhibitors; however, they are more commonly referred to as "statins." They are primarily prescribed to treat high cholesterol (hyperlipidemia or hypercholesterolemia). They work by inhibiting HMG-CoA reductase, which is the enzyme needed to produce cholesterol. In addition, statins increase the liver's ability to remove low-density lipoprotein (LDL) cholesterol, which is commonly known as the "bad" cholesterol since high LDL levels can increase the risk of heart attack or stroke. Statins also have other beneficial properties that make them useful in managing other conditions such as preventing atherosclerotic cardiovascular disease in patients with known risk factors. Currently, there are seven single-agent and three combination medications in this drug class (**Table 1**, page 2).

In addition to being available as single agents, both rosuvastatin and simvastatin are available in combination with ezetimibe. Ezetimibe, another antilipemic agent, inhibits the absorption of cholesterol from the small intestine and eventually increases cholesterol clearance. In combination with a statin, ezetimibe works synergistically to reduce cholesterol and further decrease the risk of cardiovascular events.

Similarly, atorvastatin is available as a single agent as well as in combination with am**LODIP**ine, a calcium channel blocker used to treat hypertension and angina. The combination product of atorvastatin with am**LODIP**ine can conveniently target different comorbid cardiovascular conditions at once in addition to reducing the number of medications a patient may need to take on a daily basis.

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work with experienced technicians. Not wanting to make a bad first impression by asking how to prepare the infusion, the technician attempted to compound the infusion even though they were not sure what to do.

An emergency department (ED) physician asked a per diem nurse who was new to the organization to enter a verbal order for an insulin infusion in the electronic health record (EHR) for a patient experiencing diabetic ketoacidosis. The nurse had been taught how to document orders on the medication administration record (MAR), but not how to enter medication orders into the EHR. Being a team player was important, so the nurse attempted to show that by entering the verbal order into the EHR. Since it was a titratable insulin infusion, the nurse was prompted to enter required patient parameters to titrate the insulin infusion that were not relayed by the ED physician, so the nurse entered what was thought to be correct.

Healthcare practitioners are expected to speak up about patient safety concerns to help intercept errors and avoid adverse patient outcomes. This was discussed in a previous ISMP publication, ***Speaking Up About Patient Safety Requires an Observant Questioner and a High Index of Suspicion*** (www.ismp.org/node/13270). But what if the healthcare practitioner's patient safety concern is related to their own lack of knowledge? Without discounting the courage it may take for healthcare practitioners to admit they are unskilled to complete a task, open communication within a safe learning environment can protect patients from harm or even death.

Recommendations

Recognizing that every organization has limited resources, consider incorporating the following recommendations into your new hire onboarding, competency assessments, and organizational culture:

Explain how the organization handles errors. The healthcare educator or individual who oversees new practitioner onboarding should explain to the new hire that the organization is transparent with employees about medication errors. Ask how they would like to be alerted to errors that they have made. Help them to understand that feedback about errors is not intended as an attack, but rather an opportunity to learn and grow. Provide new hires with information about medication errors that have occurred and strategies that have been implemented to prevent them.

Invest time to "train the trainer." As the onboarding process can sometimes feel overwhelming due to the vast amount of information being shared, develop orientation guides, training manuals, and checklists to ensure consistent guidance and to document completion of the required tasks. Avoid treating the new hire as an extra pair of hands while they are still in training.

Set up the new hire for success. Standardize the orientation process and provide medication safety-specific education to new hires for tasks that are deemed critical to their role. Designate superusers and give them time to help with onboarding to make sure the new hires are competent in the areas and systems in which they are assigned to work.

Assess competency. To understand new hire's baseline knowledge and experience, create self-assessments and ask them, "How many times have you done this?" Observe the new hire a designated number of times completing a task to validate competency. Provide annual competency assessments for skills and knowledge on tasks that are expected of an employee, including those that may not be performed often (e.g., low-volume/high-risk duties).

Encourage open dialogue. It is important for the new hire to develop a questioning attitude regarding medication safety during orientation and throughout their career. Encourage orientees to take notes and ask questions to help enhance understanding and learn from mistakes. Staff who are overseeing this process should have an open attitude towards questions and be skilled to explain the "whys" behind the way certain things are done; avoid a "this is how we've always

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Table 1. Medications with the suffix "-vastatin" available in the United States.

Generic name(s)	Brand name(s)
atorvastatin	**ATORVALIQ**, **LIPITOR**
atorvastatin and am**LODIP**ine	**CADUET**
fluvastatin	**LESCOL XL**
lovastatin	**ALTOPREV**
pitavastatin	**LIVALO**, **ZYPITAMAG**
pravastatin	generic only
rosuvastatin	**CRESTOR, EZALLOR SPRINKLE**
rosuvastatin and ezetimibe	**ROSZET**
simvastatin	**FLOLIPID**
simvastatin and ezetimibe	**VYTORIN**

All statins are available as oral formulations. Unless instructed otherwise, it is important to educate patients on the importance of taking this medication daily as prescribed, even after their LDL improves.

Common side effects include headache and digestive problems (e.g., nausea, diarrhea). There are some rare side effects that need immediate attention. Educate patients to contact their healthcare provider right away if they experience any of the following:

- Muscle pain, tenderness, or weakness
- Confusion or memory problem
- Signs of liver problems like dark urine, tiredness, decreased appetite, upset stomach or stomach pain, light-colored stools, vomiting, or yellow skin or eyes
- Allergic or skin reactions
- Blood in urine; unable to pass urine
- Blurred vision, seeing double, or other vision changes
- Eyelid droop
- Signs of high blood glucose

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done things" mentality. Staff who onboard new hires should expect some challenging questions, even silly ones now and then, so encourage them to be patient and react to questions with thoughtful responses. Everyone was a new hire at some point and should appreciate that they too relied on others to get acclimated to the new environment.

If a new hire finds that what they are being taught significantly deviates from the orientation guide, they should be encouraged to escalate this to their supervisor for clarification. Inconsistencies during onboarding can be a contributing factor to medication errors and should be resolved upfront. Also, insights from orientees who are unfamiliar with processes or have experience with a different way of doing things, can help improve longstanding and potentially outdated ones, or identify problems or workarounds not apparent to current, seasoned staff members.

Conduct audits and direct observation. Do not rely solely on the completion of orientation checklists to evaluate competency. Instead, to track how new hires are progressing, assess their proficiency with essential tasks by auditing their work. For example, utilize direct observation to assess dose preparation, automated dispensing cabinet (ADC) refiling, and smart pump programming. Any deviation from the intended processes, including workarounds or medication errors, should be discussed and addressed promptly. The plan to audit and directly observe tasks should be disclosed to the new hire during the initial onboarding process so that they are not surprised. Explain that this is another way to help the staff member improve and that the response will not be punitive if they "get something wrong."

Check in frequently. Set up regular meetings with new hires to maintain a "finger on the pulse" on how they are performing and feeling. Even though they may be competent in the necessary areas, they still may need reassurance. Provide positive feedback on tasks they have mastered and constructive feedback on areas in which they need to improve. Focus coaching efforts on these particular tasks and situations, allow for additional practice time, and set up a plan to reassess.

Provide a mentor. Consider pairing the new hire with a friendly face who can help them navigate the hospital. Resources are available to set up a formal mentoring program, such as those provided by the American Nurses Association (ANA) Mentoring Programs (www.ismp.org/ext/1129).

Address intimidation. It is critically important for the orientation program to include how to respond when there is disagreement over what the new employee has been asked to do and what the new employee feels is safe. Healthcare practitioners have a responsibility to question processes that do not align with their knowledge or experience. Even though there may be a rational explanation, educate orientees that it is better to question a deviation from what they were taught, or ask for help with an unfamiliar task and to learn something new, than to proceed with something that might not be safe. Incorporate the following resources into the orientation process:

- ***Resolving Human Conflicts When Questions About the Safety of Medical Orders Arise*** (www.ismp.org/node/868)
- ***Survey Suggests Disrespectful Behaviors Persist in Healthcare: Practitioners Speak Up (Yet Again) – Part I*** (www.ismp.org/node/30409)
- ***Addressing Disrespectful Behaviors and Creating a Respectful, Healthy Workplace–Part II*** (www.ismp.org/node/31421)

Recognize new orientees. Emphasize that the organization values a culture of safety and encourages medication error reporting and sharing lessons learned. Consider implementing a program that includes "weekly shout-outs" or "good catches" to acknowledge new staff who exemplify values in safety. This is a way for staff and leaders to recognize new colleagues who speak up for patient safety and to encourage a safe learning culture. Be transparent with staff about the error that occurred without identifying individuals, and, when appropriate, make sure the hospital's medication safety committee reviews reported errors to consider prevention measures.

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Different statins have unique pharmacokinetics; so, patients experiencing side effects on one statin may tolerate a different statin.

Educate patients to discuss with their provider the risk of fetal/breastfed harm versus the benefit of using a statin during pregnancy or lactation for an individualized decision making approach. Also, educate patients about avoiding or limiting alcohol consumption due to the risk of liver problems. Some statins have multiple interactions; therefore, encourage patients to let their providers and pharmacists know which medications they take and counsel them not to consume grapefruit products without discussing with their providers.

SAFETY wires

FDA warns of serious reaction to anti-seizure medications. Recently, the US Food and Drug Administration (FDA) issued a drug safety communication warning (www.ismp.org/ext/1285) of a rare but serious drug reaction to **KEPPRA**, **KEPPRA XR**, **ELEPSIA XR**, **SPRITAM** (lev**ETIRA**cetam), and **ONFI**, **SYMPAZAN** (clo**BAZ**am). The reaction, *Drug Reaction with Eosinophilia and Systemic Symptoms* (DRESS), usually appears 2 to 8 weeks after starting the medication and it can be life-threatening. A rash may be the first sign, but it can quickly progress, causing injury to internal organs. All healthcare practitioners should be aware of this issue. It is important to educate patients about the early signs and symptoms of DRESS (e.g., rash, fever, swollen lymph nodes, facial swelling) and to seek immediate medical attention if it is suspected. Please report all adverse reactions to the FDA (www.ismp.org/ext/609).

Confusion over sterility of povidone-iodine solution. A hospital reported that labeling on the overwrap of **APLICARE** (povidone-iodine solution), an antiseptic product made by Medline, indicates the solution is sterile (**Figure 1**, page 4). However, while the foil package itself, inside the overwrap, is sterile, its contents are NOT (**Figure 2**, page 4). Placing a non-sterile solution in a package labeled "sterile" will cause confusion among providers who may

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Continually reassess. To identify areas for improvement, ask for feedback from the new hire, those helping with the onboarding process, and peers working with them. Consider more training time if the new hire needs additional support. With the rapid changes that healthcare organizations face, ensure competency assessments and onboarding materials are updated regularly to reflect current policies and practices. Better onboarding ultimately leads to increased workplace satisfaction, reduced turnover, and a safer learning environment.

Up Next

Be on the lookout for **Part II** on this topic in an upcoming newsletter, which will discuss the role of simulations in medication safety education.

We thank Grace Lee, PharmD, BCPPS, Pharmacy Educator at the Children's Hospital of Orange County (CHOC) for assistance with this article.

Worth repeating...

Overwrap prevents barcode scanning

More hospitals have reported the inability to scan a medication barcode due to an overwrap seam centered over the barcode on an infusion bag (**Figure 1**). The overwrap obscures the white ink barcode on the heparin sodium 25,000 units/250 mL infusion bag made by B. Braun. Since removing the bag from the overwrap shortens the beyond-use date, many hospitals store it in the overwrap until right before use. The reporting hospitals are concerned that without being able to scan the barcode when dispensing, restocking automated dispensing cabinets, or prior to administration, this situation increases the potential for errors with this high-alert medication.

Figure 1. The barcode that identifies B. Braun's heparin 25,000 units/250 mL is under a crimped seam on the clear overwrap, making it impossible to scan without first removing the bag.

We have contacted B. Braun numerous times and have written about this issue on several occasions. The US Food and Drug Administration (FDA) intends for barcodes to be on the outside container or wrapper of medication as well as on the immediate container, unless the barcode is readily visible and machine-readable through the outside container or wrapper (www.ismp.org/ext/266, see question/answer #14). However, this requirement is not always followed. This is a longstanding problem that B. Braun told us they would address—years ago. They need to address this issue once and for all, especially with high-alert medications such as intravenous anticoagulants like heparin. They need to ensure their products meet safety standards before distributing them. If the crimped seam was over the back of the bag, there would be no problem scanning the barcode. Pharmacies should test product barcodes before distributing the products to patient care units. Organizations should monitor barcode issues and consider alternative products, when possible.

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believe they are choosing a sterile solution when they are not.

Figure 1. Overwrap on Aplicare (povidone-iodine solution) by Medline indicates that the package is sterile.

Figure 2. The content inside the Aplicare foil package is a non-sterile solution.

We reached out to the manufacturer who advised us that they have updated the back of the peel pouch description on the overwrap to state "NON-STERILE PVP SOLUTION, STERILIZED PACKAGING" to lessen confusion. Educate practitioners that Aplicare (povidone-iodine solution) is not sterile and should not be used when a sterile solution is required.

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