

Improved Training for Healthcare Professionals Using Simulated Medications

Summary

Medication errors, significantly contribute to patient morbidity and mortality outcomes. Emergency medical systems, the military in field action, emergency departments, intensive care units and the operating suites are high risk areas for patient harm. Factors include lack of knowledge and training in the preparation and delivery of high-alert medications, blood and blood products. The development of inert, accurate and realistic simulated medications by therapeutic class, provides healthcare professionals a means to incorporate Hands-On-Training (HOT) using placebo medications in real-life dosing and administration scenarios. Practicing dosing and administration and used in companion with high fidelity mannequins, pharmacotherapy specific medications can help build core medical skills, improve familiarity with drug delivery systems, and reduce errors.

Method

Develop simulated medications that represent drug product in form, function, delivery system, appearance, and packaging that can be used for hands-on training in the field or laboratory. Placebo medications should be inert and fully customizable for program specific training.

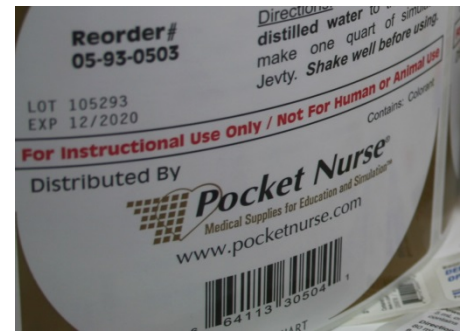
Results and Conclusion

Rapid Sequence Intubation medications, Freeze-Dried Plasma, Epinephrine, and Normal Saline are all examples of simulated medications that have been developed for use in hands-on practice scenarios for in-house, field, and HOT training programs.

Formulation development for each product is designed to ensure the simulated medication matches its active counterpart in all physical aspects without any active ingredients. Regulatory issues are avoided with inert, non-hazardous components that are easily disposed.



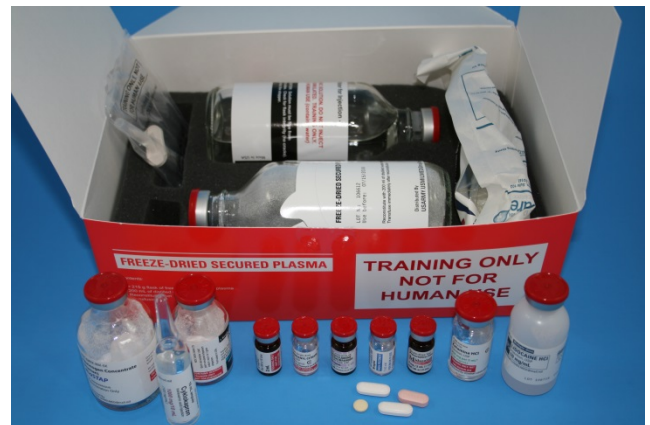
Labels are designed to accurately represent the pharmaceutical medication by including appropriate concentrations, dosages, prescribing information, and lot number/expiration, while clearly identifying their simulated, educational use with highlighted copy.



Where possible, the same container/closure system used in drug product is used for the placebo version, to ensure the most effective training, especially for the most complex delivery systems.



Medics and/or Clinicians can practice dosing and administration techniques with the same medications they will see in the field.



Training medications can be customized for specific urgent interventions and incorporated into curricula, to help programs comply with accreditation standards where simulation with actual equipment and supplies is preferred

The development of accurate and realistic simulated medications is vital to providing healthcare training programs with a safe, disposable, and affordable way to integrate hands-on training using real-life dosing and administration scenarios. These simulated medications can assist in decreasing improper dosing, label misreading and incorrect administration or preparation.



Related Links

www.ismp.org/tools/highalertmedications

Institute for Safe Medication Practices (ISMP)
List of High-Alert Medications in Acute Care Settings

www.ismp.org

Institute for Safe Medication Practices

www.nursingsimulation.org

International Nursing Association For Clinical Simulation And Learning

www.ashp.org

American Society of Health-System Pharmacists

www.fdic.com

Fire Department Instructors Conference (FDIC)

<https://mhsrs.amedd.army.mil>

Military Health System Research Symposium

www.specialoperationsmedicine.org

Special Operations Medical Association

www.nccmerp.org/vision-and-mission

National Coordinating Council for Medication Error Reporting and Prevention

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