2026 ASSESSMENT SHOWCASE

STERILE COMPOUNDING AND ASEPTIC TECHNIQUES: CUTTING DOWN ON PRODUCT WASTE

Pharmacy Technician · Spring 2025

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PROBLEM

Reducing waste in sterile compounding and aseptic techniques is a key skill for Pharmacy Technician students. Waste arises from:

- **Improper Inventory Management:** Poor tracking of expiration dates and overstocking lead to expired medications and unused products.
- **Incorrect Compounding Techniques:** Inadequate training or noncompliance with protocols creates unusable products that must be discarded.
- **Contamination:** Failure to maintain aseptic conditions results in discarded contaminated items, underscoring the need for strict technique and monitoring.
- **Overproduction:** Inaccurate demand forecasting can result in excess unused products.

PLAN

Our goal was to improve student training on efficient sterile compounding processes and reduction of product waste through activities focused on:

1. Implementing robust inventory management systems to monitor stock levels and expiration dates.
2. Expanding hands-on instruction and frequent competency assessments to reinforce proper compounding techniques that adhere to protocols and maintain high standards.
3. Stressing contamination prevention through aseptic practices, regular environmental monitoring, and continuous education on best practices.
4. Training students to analyze historical data and current trends for accurate demand forecasting and batch production planning to prevent overproduction.

ASSESSMENT ACTIVITY

We developed an activity in which students created natural products — such as sunscreen, burn ointment, hair masks, Chapstick, and hand sanitizer —that they could take home and use. In these compounding sessions, students were guided through the process of:

- Selecting high-quality natural ingredients for their beneficial properties (e.g. aloe vera and coconut oil in burn ointments for their soothing and healing effects, shea butter and essential oils in conditioning hair masks for deep nourishment).
- Combining them effectively to create stable and usable products.
- Practicing aseptic techniques to ensure products were free of contamination.

Through this hands-on approach, students developed practical compounding skills while focusing on safe, waste-conscious practices and learning the value of using natural ingredients. They were able to take home their creations, providing them with usable products that showcased their newfound expertise. By combining practical experience with sustainability, the activity reduced waste while reinforcing compounding and aseptic skills.

RESULTS AND DATA

Student feedback confirmed strong learning gains, engagement, and satisfaction:

- 95% felt **more proficient** in sterile compounding and aseptic techniques.
- 90% rated natural product creation activities as **highly beneficial.**
- 85% indicated they **would use** the natural products they created at home.
- 80% reported **significant waste reduction,** attributed to improved inventory management and accurate demand forecasting.

Students valued practical applications, clear instruction, and ability to create items for personal use. The program improved skills, boosted confidence, and demonstrated waste reduction, confirming the effectiveness of this approach to training and assessment.

CLOSING THE LOOP and NEXT STEPS

Survey results show that hands-on product creation effectively improved skills and reduced waste. Next steps include:

- Expanding training with additional products (e.g., herbal teas, lotions, eco-friendly cleaners).
- Increasing hands-on activities across modules.
- Incorporating collaborative projects and peer assessments to enhance shared learning.

These steps will build on current success, strengthening practical skills while fostering sustainable, waste-conscious practices in sterile compounding.

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