

Cost and Time Savings with a Tabletop Unit Dose Packager

By Lisa Arguedas, BS, RPh

For hospital pharmacy operations, tabletop unit dose packagers have proven to be an efficient, cost-effective means of packaging medications. While many hospitals are using these machines to satisfy only a small portion of packaging needs, others find this technology suitable to package the vast majority of medications, and are realizing substantial benefits as a result.

At College Hospital in Cerritos, California, an acute psychiatric hospital with 157 beds, we recently purchased a tabletop unit dose packager, and began packaging almost all of our medications in February of this year. At this facility, we primarily dispense PO medications, and approximately 40,000 oral solid doses are packaged per month.

Prior to implementing the tabletop unit dose packager at our facility, approximately 10% of our medications were purchased from the manufacturer in unit dose, and we manually packaged the remainder in unit dose, onsite. The decision as to which products would be purchased in unit dose was purely economical; we estimated our in-house packaging cost at 3.5 cents per dose (not including labor), thus any product that cost more than an additional \$3.00 per hundred in unit dose would be purchased in bulk and repackaged in-house. For packaging materials we used high-barrier blisters and pinfeed foil labels.

Now with the packager in house, we package everything onsite except Cymbalta and the higher doses of Zyprexa, as these are still cheaper for us to buy pre-packaged from the manufacturer. The only item that we still manually package is fish oil, as there is always the risk of ruining the machine if one were to pop open.

Making the Case

I began to seriously consider purchasing a tabletop packager after conducting a cost analysis, which showed that not only would implementing this technology improve workflow, but also would reap a substantial cost savings on each unit of medication. The cost to repackage with the machine is less than one cent per dose. Comparing this against our manual repackaging cost of 3.5 cents per dose resulted in a savings of around 2.5 cents per unit. The cost analysis simply involved dividing the total cost of our disposable packaging materials (including printer ink) by the total number of doses packaged over a three-year period. Then, using the cost per unit for the tabletop packager's disposable packaging, I determined the time it would take to break even on the initial investment and potential future savings. By demonstrating to administration that implementation of the tabletop packager would save

money in the long term and allow us to recoup the upfront cost in six to nine months, the purchase was immediately approved. I submitted the proposal in September of 2009 and was able to purchase the machine in January of 2010, as it had to be placed on the following year's capital budget.

Of note, the initial cost analysis did not include the amount we were spending on shipping for our packaging materials. Because the packaging we used previously was bulky, we spent hundreds of dollars in shipping with every purchase and as storage was always an issue, we had to limit our purchasing to once a month. With the new packaging, our shipping costs are significantly less. When the shipping costs were factored into the cost analysis, we discovered that it was really costing us 5.5 cents to produce a dose. So, in the end, our true savings were 4.5 cents per dose—or \$1,800 per month.

Impact on Workflow

On top of accruing considerable cost savings, implementation of the packager substantially improved the efficiency of our pharmacy operations. We have been able to cut out several steps in the packaging process, thus increasing the number of items packaged per hour. With the machine, we can package one unit per second after the bottle has been scanned in. This time savings resulted in a reduction of .5 FTE, allowing me to reallocate one of my staff members to special projects. To ensure the greatest efficiency, all items scheduled for packaging are preloaded into the machine, and then the packaging begins; this way we do not have to stop and enter in each item between batches.

Unexpected Advantages

After implementing the packager, we realized several other unexpected advantages. Since the packaging used with the machine is significantly less bulky than what we used previously for manual packaging, we have reduced our storage needs and are creating significantly less waste. The technicians prefer the new packages as they can be rolled up, and it is easier for the pharmacists to check the doses because they are all attached, as opposed to being separated into sheets of 10 doses each. In addition, the nurses are much happier with the packaging material, which is easier for them to open. With the new packaging, there is now space to include important TJC information, such as "look-alike/sound-alike" or "high-alert," as well as tall-man lettering. In the past we were unable to fit any of this information on the products we manually packaged, and even the manufacturer name had to be coded.

Packaging Tips

- **Organize drugs to be packaged by size to save time.** After identifying what needs to be packaged for the day, we line up all the small-sized drugs first, then the capsules, followed by the larger-sized items. Because two different-sized slots are used with different drug sizes, setting up our workflow in this way minimizes the number of times the slots need to be changed between batches—saving time overall.
- **Package all items that can cause allergic reactions,** such as penicillin or sulfa drugs, after all other drugs have been packaged. The technician must break down and clean the machine thoroughly after each batch to avoid any dust contamination of other packaged medications.
- **Use different colored films for different types of drugs.** For example, we plan to use red film for our controlled drugs, which alerts nursing to double check these higher-risk drugs before dispensing them to the patient.

Conclusion

Purchasing this machine has been a worthwhile investment in many ways. We have improved patient safety, incurred a substantial cost savings, increased staff satisfaction, and created a more efficient workflow for packaging medications. Because of the success we have had with this implementation, we have purchased and recently implemented an additional machine for our Costa Mesa hospital, a 122-bed facility that provides medical, surgical, and psychiatric care. ■



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