



# Liquid Unit Dose Packaging Machines: An Easy Step toward Efficiency

**S**aint Barnabas Medical Center in Livingston, New Jersey, is the state's oldest and largest nonprofit, nonsectarian hospital. As a 601-bed hospital, we provide services to over 40,000 inpatients, more than 80,000 emergency department patients, and over 300,000 outpatient visits annually. On average, 25% of the medications entering the pharmacy require repackaging. In 2008, we repackaged 24,000 liquid doses into unit dose, bar coded cups. In the continuing search for automation that will reduce the FTEs required to complete manual tasks in the pharmacy, we implemented an automated liquid unit dose packaging machine to manage our repackaging.

## How It Works

The liquid unit dose packager works with a peristaltic pump, in our case the Baxa Repeater Pump, and a PC that contains our drug information database. The database contains each product's name (including TALLman lettering where appropriate), NDC code, dose, beyond-use date, and lot number. To begin the repackaging process, the bulk bottle's bar code is scanned into the database, bringing up the label information on the PC. Once the label and packaging run information is confirmed, the PC then prompts the packager to create the bar coded label. The peristaltic pump issues the liquid medication into the dose-appropriate cups as the packager dispenses them. The cups move along the conveyor belt to the next step, where the label film is heat-sealed to the cup and the film between each cup is perforated.

On any given day, we may need to repackage 100-200 liquid doses into unit dose, bar coded cups. Previously, when this process was done by hand, a single run could easily take one hour to complete. Now that we have automated the process, we can complete the same amount of work in ten to fifteen minutes. This significant time savings means we can concentrate our efforts on other aspects of medication distribution, such as improving inventory management.

## Quality Control

The safety features of the repackager were important to us. We are confident with the quality control processes, which include scanning the bulk container to ensure the proper medication has been selected, and scanning the cup upon completion of the packaging to be sure the labels match the medication.

The packaging software also provides reports that assist in quality control. We regularly utilize the Daily Report as it tracks the quantity of doses packaged. In addition, it reports the manufacturer and lot number of each bulk product, making it easy to locate products in the event of a recall. The manufacturer's

expiration date is also included in this report, giving us additional control over quality measures.

## Maintenance Considerations

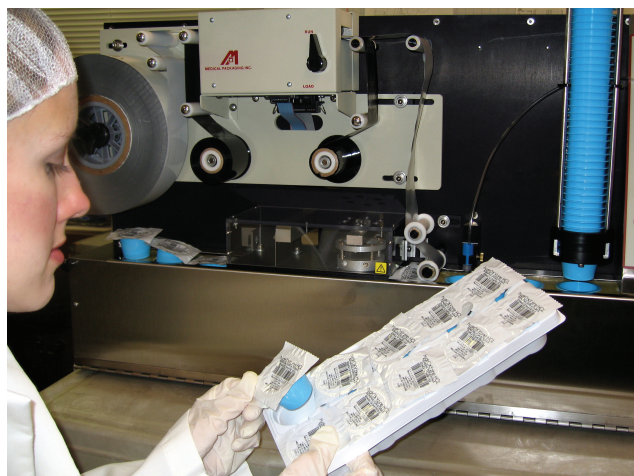
There are a few additional steps to keep in mind when using this automation. The peristaltic pump must be calibrated before each batch to ensure it is delivering the desired volume, and the machine must be cleaned between each run by wiping it down with gauze and rubbing alcohol. These machines are reliable, requiring little in the way of maintenance and repair. We have had few problems with our repackager, and have received excellent service from the vendor.

Not only are these packagers easy to use, but training new users is also a quick process. A technician can be running the equipment with just three to four hours of training.

In conclusion, the cost savings realized by purchasing all of our liquid doses, from vitamins to narcotics, in bulk is valuable. We also avoid the hassles of searching for a new supplier should a manufacturer discontinue offering a product in unit dose. In addition, the efficiency gains from this

technology cannot be understated. Now that our liquid repackaging processes are so easy, quick, and safe, we would never consider returning to a manual system. ■

*Scott Shinske is a certified pharmacy technician and has been responsible for bar coding and unit dose packaging at Saint Barnabas Health Care System in Livingston, New Jersey since 2007.*



Liquid unit dose packaging machines are reliable, requiring little in the way of maintenance and repair.

Photo courtesy of Medical Packaging Inc



## WHERE TO FIND: Liquid Unit Dose Packaging Machine Suppliers

www.findit.pppmag.com

Vendor	Reader Service Number
Accu-Chart Plus Healthcare Systems, Inc	116
Baxa Corporation	117
Euclid Spiral Paper Tube Company	118
Medical Packaging Inc	119
Pearson Medical Technologies, LLC	121