

BLISTERS & CARDS



BLISTERS VS. BOTTLES

Factors to consider for packaging over-the-counter and prescription medications include safety, adherence and product quality.

by **WARD SMITH**, Keystone Folding Box Company



Studies show a direct connection between calendarized blister packaging and improved patient compliance/adherence to dosing regimens.

While the U.S. consumer is accustomed to seeing medication in both bottles and blister packs, bottles remain the dominant format in the U.S. Alternatively, since the end of World War II, the European standard for packaging medication has shifted toward the use of blister packs.

In fact, 80 percent of medications dispensed in Europe are now in blisters. In evaluating blister vs. bottles, blisters offer multiple benefits to the manufacturer, pharmacy staff, and patients. Areas of benefit include: child safety, product quality and medication adherence.

These are among the most important factors to consider for packages containing over-the-counter or prescription pharmaceutical products.

CHILD SAFETY

In terms of safety, studies have consistently shown that blister packaging outperforms child-resistant (CR) bottles. In a March broadcast, CBS News reported on a study citing “Blisters are 65 percent more effective in preventing child access to medication.” The report further states that kids can open child-resistant pill bottles in seconds, risking accidental poisoning. In a test the group set up at a Maryland day care center, children ranging in ages 3 to 5 managed to pop open child-resistant pill bottles in mere seconds.

In 2015, child poisoning from access to medications was reported in 8,972 cases in the U.S. The number of accidental poi-

sonings is actually down since the last report in 2010—thanks, in part, to a growing use of blister packages. When caps are inadvertently left partially closed or off the bottles the CR feature become irrelevant and leaves all pills exposed to a child. In contrast blister packs can provide a significantly higher level of safety for children. Some blister solutions can provide a child-resistant safety level of F=1, the highest child-resistance rating available.

COMPLIANCE/ADHERENCE

Published studies have shown a direct connection between calendarized blister packaging marked with dates or other information, and improved patient compliance/adherence to dosing regimens. While medication adherence is a complex issue, calendarized blister packs directly counteract patient forgetfulness by providing a visual dose history for each day of the week.

- **Improved Adherence:** Unit-of-use blistered medications are easier to use, particularly for patients taking multiple pills per dose and those who have difficulty remembering proper

dosage protocols. By adding printed dosing instructions on the pack near each dose, the packaging becomes a “reminder package,” directly impacting insight into dosing history. Beyond the interaction with physicians and pharmacy staff, the package is something the patient interacts with on a daily basis, making it a repetitive communication device with the patient on proper dosing. The oral contraceptive market is an example of how compliance packaging works. NOS birth control pill is sold in any other packaging format. Conversely, a bottle offers no benefit in the area of improving adherence.

- **More accurate dispensing:** Pre-packaged medication in blister packs reduces the chance for dispensing errors within pharmacy operations. Blister packaged medications allow prescriptions to be filled faster as no pill counting and re-packaging by the pharmacy staff is required, eliminating pill count errors. If a mistake has been made by a pharmacy staff member when pulling a drug from the shelf, both the name of the drug and the strength of the medication remain visible to the patient, allowing the patient an opportunity to verify they have received the correct product. On the other hand, when prescriptions are dispensed in amber vials, the patient has nothing on which to rely other than the pharmacy label and the hope that they have received the correct medication.
- **Improved refill rates:** Blister packages make it easier for patients to manage their own supply of products. With bottles, many patients don't realize they need to refill their prescription until they are down to the last one or two pills, which can lead to missed doses until the patients can get the prescription refilled. Calendarized blister cards can be printed with “time to refill” near the last five doses in the package, which prompts the patient to call in for a prescription refill.

PRODUCT QUALITY

Every medication package, both bottle and blister, must go through stability testing to ensure an adequate barrier of protection. The goal is to protect the medication from moisture, oxygen or chemical migration—all of which could have a negative impact on the product's chemical assay and reduce the efficacy of the medication.

With a blister package, each individual pill cavity protects the dose inside until you remove a pill from the package. This ensures optimal quality of the product until a patient removes each dose.

Bottles can be deceiving in the area of product quality. When a manufacturer packages product in a 500-count bottle, for example, there is stability data that allows that product to have the necessary barrier protection until the initial opening of the bottle. Once the cap is removed to fill the first prescription and the induction seal is broken, the barrier is never the same. Each time the bottle is opened to fill yet another prescription, the ambient air and humidity of the room is introduced to the remaining product inside. Of course, products

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Blisterpacks are used in pharmaceutical packaging more than any other market. That's why the new Furlbliss pet brush by Vetnique Labs is worth a mention, as it is in pet care. The company chose blister packaging to offer consumers an easy view of its product as well as a touch hole to feel it.

The brush is made from 100 percent medical-grade silicone, and the multi-functional design enables gentle brushing, massaging and exfoliating. Furlbliss can be used wet or dry, and has soft teeth that can safely remove loose fur from the pet's coat, while the back side of the brush incorporates a fur- and lint-removing edge.

Vetnique Labs purchased the company that made the brush in 2017, said Bridget Swanson, Vetnique director of sales and Operations. "At the time, the brush was packaged in a paper-board carton incorporating a small area through which shoppers could see the brush, but only a graphic representation of the full brush itself."

Vetnique re-branded the brush as Furlbliss, and wanted a different package, one that display the uniqueness of the brush. The company ended up choosing **Transparent Container** (transparent.container.com) to develop the new package.

"When we met with Transparent's design team for the first time, we didn't have a specific package concept in mind," said Swanson. "We knew we wanted an eye-catching package that would let consumers see the front and back of the entire brush. We looked at sample packages and discussed concepts of a blister package with the team, and what various formats could offer. We decided that a trapped blister would be an ideal package."

The trapped blister is made of 10mil PVC (polyvinyl chloride), held in place by 20-point coated two-side SBS (solid bleached sulfate) cards printed in process colors. The cards provide a billboard for the product,



➤ The new Furlbliss pet brush in blister pack by Vetnique incorporates a full product view and touch hole for easy feel of the product.

usage information and photos. The blister also incorporates front and back touch holes through which the consumer can feel the soft surface of the silicone brush. **PS**

sent home with a patient that are packaged in a traditional amber vial also can compound the problem of barrier protection.

WHERE DO WE GO FROM HERE?

While many organizations may feel they are limited to the use of bottles due to their current infrastructure of bottling lines, many contract packaging organizations are well equipped to take on the task of packaging or repackaging medications in blister packs. These contract packagers can adjust for a rapid change in packaging format. Often, the only regulatory requirement is filing a CBE 30 form with the FDA allowing your package to be converted to blisters in a relatively short timeframe. Retailers can purchase drug in bulk from manufacturers or wholesalers, and

have contract packagers manage the process of packaging into unit-dose packages. In this case, the only requirement would be compliance with state board of pharmacy guidelines.

With about 80 percent of U.S. pharmaceutical products today being delivered and dispensed in bottles, there is a huge opportunity to utilize more blisters and have a meaningful impact on product quality, child safety and patient outcomes through improved adherence. **PS**

Ward Smith is director of marketing & business development for Keystone Folding Box Co., a manufacturer of folding cartons and compliance packaging for the healthcare sector. The company is best known for its Key-Pak and Ecoslide-RX blister cards, each of which are child-resistant, senior-friendly and made from recyclable material. www.keyboxco.com