

The bar code industry has demonstrated both the feasibility and the reliability of 2-D barcodes. One need only use their favorite search engine to verify that this is fact. The computer giant, IBM, has been running ads promoting a system that utilizes 2-D barcodes to allow product tracking through the supply chain, intended for major pharmaceutical suppliers (among others).

The 2-D barcode can be thought of as a series of conventional barcodes stacked one on top of the other. It utilizes much smaller elements, which can be thought of as pixels, to place a lot more information in a much smaller area than conventional barcodes. In the pharmaceutical application things, such as the expiration date, the lot number, and the drug name could all be included in a single 2-D code.

The thinking right now is focused on the supply chain problems and tracking individual drug shipments as they moved through the chain. We however, are interested in using the 2-D label in the pharmacy to provide lot number and expiration date information. The need for the expiration date is obvious, and we will not spend words discussing it here. The need for the lot number is somewhat obvious as regards drug recalls, but it is far less obvious as it relates to pill counting.

The secret to accurate pill counting by weight is the establishment of an accurate average piece weight for the drug being dispensed. The average piece weight of a drug will vary very little within a single lot number, as the FDA controls the dosage weight by controlling the piece weight, in most instances. However, more leeway it is allowed in the lot number to lot number variation, as the dosage weight is the critical weight. That is to say, more leeway is granted in the excipient weights. Therefore, in the ideal world, it would be advantageous to adjust the average piece weight when counting pills by weight for every new lot number of a drug.

The problem has been that counting out the sample of pills used for establishing a new average piece weight manually is added time in the transaction. The 2-D label will tell us when to update the average piece weight, and a new piece of software that is included in the Torbal DRX-500 Series of prescription scales from can let us do it without manual counting. This scale uses the stored value of average piece weight to allow the user to pour out a small number of pills (the scale is counting for the user), anywhere from 10 to 15 pills, and it then calculates a new average piece weight based upon the actual weight and the scale count. This works because the number of pills is small, so the count is always correct, and the scale knows precisely what the pills weigh. It can, therefore, calculate a new average piece weight for this small batch of pills. The user must stop momentarily to allow the scale to stabilize, in order to be sure the

weight is accurate. The user can then start pouring pills again and stop once more somewhere between 20 and 30 pills (the scale is using the new average piece weight for this count), and the process is repeated, this time the sample size is larger (and, therefore, more accurate). The user then goes on to fill the script stopping at the correct value. It only takes slightly longer than a regular normal pill counting transaction, it only has to be done once for a new drug lot number, and it optimizes counting accuracy (and peace of mind).

Let's hope the 2-D code on supply bottles becomes a reality. Until then update the average piece weights on a regular basis.