

### Pill Counting in the pharmacy of the future

One thing we can say with some kind of certainty is that the use of the pill counting tray will be diminished, but probably not eliminated. This implies that some sort of pharmacy automation will take its place. That automation will have to be economical in order that low-volume pharmacies, like those in retail outlets, can make financial sense of the capital expenditure. One way in which economic justification could be made simpler is if the pill counting capability was provided along with other capabilities, like report generation and efficiency recommendations, which provided the pharmacy with additional capability.

It would appear unlikely that the United States will go to a prepackaged drug strategy similar to that used in Europe. In that type of strategy pill counting is largely eliminated but the unit cost per drug is increased by the packaging.

The bar code on the supply bottle will become a 2D barcode which contains much more information than simply the drug NDC code. It will also contain lot number and expiration date information. This information can be very useful in certain types of pill counting automation. For instance, in [pill counting](#) by weight the lot number information would make it possible store an average piece weight by lot number for each drug, eliminating the need for periodic updating. Large robotic systems could monitor their own inventory for expiration dates, and warn the system operator of pending problems.

The use of new technologies that are borrowed from industries where they are mass-produced, such as the communications industry and the information technology industry, will allow pharmacy automation prices to come down, and pill counting will become more affordable. It must be remembered, however, that pill counting itself is only one part of the process of filling a script. Even if pill counting were completely eliminated it would only represent a small percentage of the overall time and labor spent in filling a script.

The current trend of adding pharmacies to retail outlets, in order to increase the customer base by providing more convenience in shopping, shows no signs of abating. This trend increases the need for small pharmacy automation systems, which includes pill counting automation, and tends to decrease the number of scripts filled per pharmacy. These pharmacies are chain pharmacies where the primary business has nothing to do with pharmacy.

The shortage of pharmacists will be exacerbated by the baby boomers entering their golden years, as well as, the previously discussed pharmacy explosion. These overworked professionals will be seeking any type of pill counting automation that relieves their load. That does not mean that corporate management will be able to justify capital expenditures to provide relief.

Predicting the future of anything that has a large number of variables, as does pharmacy automation, is always a risky proposition. The risk, however, is greatly reduced by the fact that

almost everyone will have forgotten these projections by the time they become relevant.