

Most of us think of pill counting as the primary work in filling scripts in the modern pharmacy. That is probably not correct as the actual entry of the script into the Pharmacy management System (PMS) may well take more time to accomplish. Once the script is entered the PMS generates a label package that becomes the process driver unless the pharmacy has a full robotic machine on site. If the script calls for a drug that the Robot has in one of its drug cells, and the unit is capable of picking up a selected empty vial of the correct size (usually a choice of 2 or 3 sizes) and delivering it to a labeling station where the label is printed and applied, then the PMS will send the script info to the Robot. These robots are used for the top 100 to 200 drugs depending upon the script volume per day. The scripts that call for drugs in the balance of the formulary are sent forward to be filled manually (usually more than 50% of scripts representing 80%+ of the formulary).

Is selecting a vial or applying the label a problematic portion of filling a script? It does take some small amount of time per script, usually an assistant's job. It is hardly a consideration in justifying the expense of a robot. The next step, however, of getting the proper pills in the proper quantity into that labeled vial is where automation can make a difference. There is the labor of fetching and returning the proper supply bottle to and from the dispensing station. Oddly enough, if you can locate the top (most popular) 100 or 200 drugs close to the pill counting work station, you can obviate a portion of the need for the robot.

However, this brings us to the ugly task of opening the supply bottle after we verify that we have the proper bottle for the script (this verification is easily done with a bar code scanner and proper software) and pouring pills either; directly into the vial (as when counting by weight on a scale), or onto a counting tray (for manual counting with a spatula), or into a hopper of an optical pill counting device (drugs end up in bins, common path requires cleaning to prevent miscounts and cross contamination), or onto an optical plate for counting using target identification software (spatula for spreading and smoothing out the pill mound), or onto a rotating table for alignment and optical counting (drugs into bins, cross contamination if not kept clean).

Many techniques to eliminate the need for the fatiguing, boring, error prone task of using the manual counting tray, but it is still heavily used and relied upon. Let's cut to the chase and focus on the clear winner for automating the pill counting section. The only technique which is totally non cross-contaminating is counting by weight, where the

drug goes directly from the supply bottle into the vial, and thereby eliminates the need for any cleaning. Counting by weight is as fast, or faster, than all the other techniques when done as part of a scale system that allows for periodic automatic updates of Average Piece Weights (APW) without the need for manually counting out a drug sample. This scale system can do the entire pill counting formulary while storing the APW information in a common database that is shared by all the scale workstations on the system. The cost per workstation is the lowest except for the manual counting tray and spatula (which is what needs to be eliminated). This weighing system is easy to install (plug and play in the wi-fi mode) and provides a series of management reports via a standard browser. It can send instant emails in the event it detects a script error. It is a total solution for pill counting and can be justified by ROI in small pharmacies.