Introduction

Stock levels and drug lists are dynamic in the Pyxis MedStation system, especially when most medication(s) are distributed via profiled stations. Many factors influence which medication will be needed on a nursing unit over time. Some of these influences include:

- Seasonal changes, such as infections and injury types
- Physician staff changes, such as a new cardiologist who prescribes different medications
- Standards of practice changes, due to literature recommendations
- Patient population changes, where the hospital offers a new or different service

Best practice is to remove medications not needed on a nursing unit from the Pyxis MedStation system to make space for medications with orders. Medications returned to pharmacy are available for replenishment of other Pyxis MedStation systems, which minimizes unnecessary purchases and stock on hand. This will also prevent unnecessary replacement of stock in a Pyxis MedStation system that has expired, which is a direct financial cost to the facility.

Objectives

The following practices will support optimal inventory management of the Pyxis MedStation system:

1. Manage loads and unloads of medications
2. Manage and reduce stock-outs
3. Optimize the refill activities based on medication usage
4. Manage expired medications using the Outdate Tracking feature
5. Quarterly review process

Loads and unloads

Develop standard procedures for delivering medications entered into the pharmacy information system that are not in the Pyxis MedStation system where the patient is located. Options include:

- Load the medication into the Pyxis MedStation system (recommended practice)
- Send an interim dose until the medication is loaded (requires labeling the medication with patient-specific label)
- Do not load the medication and send as patient-specific medication (requires maintaining a “mini cassette fill”)

There are three options for notification:

- Ordered Med Not Loaded bulletin
- Ordered Med Not Loaded report
- Pharmacy Information System Load Label

Ordered Meds Not Loaded bulletin (OMNL bulletin)

To facilitate immediate loading, Ordered Meds Not Loaded (OMNL) bulletins can be turned on to print and/or display in order to alert pharmacy when a medication is ordered but not currently loaded in a Pyxis MedStation system. Use the OMNL bulletins when all newly ordered, non-loaded medications are immediately loaded into the Pyxis MedStation system.
Note: To turn off OMNL bulletins for medications the hospital decides will never be loaded into the Pyxis MedStation system, deselect the Print option in the formulary set up.

**Ordered Meds Not Loaded report (OMNL report):**

If a pharmacy chooses to send first or interim doses directly to the nursing unit and only load medications periodically throughout the day, the OMNL report will facilitate the batching of loads. The OMNL report can be generated on demand or set up to print at a designated time in a designated format (BATCH mode). To utilize the OMNL report most effectively, it is important to determine how far in the future the report should look for new orders. This setting is accessed by going to System Settings and picking Site Specific Options. In the Site Information screen, click the Reports tab and change the Time Options setting located at the top of the screen located in the Site Information tab of the System Settings. (See the Pyxis MedStation 4000 system console user guide for specific set up instructions for this feature).

An advantage of using the OMNL report over the OMNL bulletin is the ability to filter out Pyxis MedStation systems where you do not want to load new medications.

**Loading the right quantity**

<table>
<thead>
<tr>
<th>SIG</th>
<th>MAX</th>
<th>MIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Two times daily</td>
<td>20</td>
<td>6</td>
</tr>
<tr>
<td>Three times daily</td>
<td>30</td>
<td>9</td>
</tr>
<tr>
<td>Four times daily</td>
<td>40</td>
<td>12</td>
</tr>
</tbody>
</table>

Table 1: Quantity of medications to load (maximum and minimum levels)

The following chart can be used as a guide to determine the quantity of medication to load, and to standardize practice among pharmacy technicians. Many facilities will post this chart at the console to guide standardization.

**Finding a pocket to load the medication**

If all pockets are full in a Pyxis MedStation system and a medication must be unloaded to make space for a new medication, develop a standardized practice for staff to follow:

**Least Removed feature:** Use the Least Removed feature at the console and unload the medication that has been used the least, with the exception of standard stock (see note below). This will streamline the load/unload process, reduce errors in unloading decisions and promote stock rotation.

Note: To best utilize this method, it is crucial to have Standard Stock toggled On only for medications that are needed for urgent patient care and which should never be removed from the Pyxis MedStation system for clinical reasons. Each Pyxis MedStation system can have different medications marked as standard stock.

**Removing unused medications:** Another method to make pockets available for medication loading is to review the Meds Without Removals report. Unload medications that are not standard stock and have not been removed in the last 90 days (60 days if there are space constraints). This will make pockets available for new loads. Best practice is to review this report monthly and remove inventory not used in the last 60-90 days.
Stock-outs

Stock-outs should be managed on an ongoing basis as they occur. A stock-out must be refilled promptly.

There are three kinds of stock-outs:

Known (or visible) stock-out: The system determines the inventory count is zero and a stock-out bulletin is generated. Medications are not physically in the pocket and the user cannot access the pocket. Stock-outs are managed by increasing the Min quantity for the affected pocket and adjusting the Max quantity based on the new Min setting.

Blind stock-out: The count is greater than zero and a stock-out bulletin is not generated. The pocket opens, but there are no medications in the pocket.

False stock-out: The system shows a count of zero and a stock-out bulletin is generated; however, medications are found in the pocket upon refill. The user cannot access the pocket because the medication will be grayed out on the Pyxis MedStation system.

Management of stock-outs

Known stock-outs

On the console, set the stock-out bulletin to print automatically.

• When a stock-out occurs, refill as soon as possible because the Nurse has no access to the stocked-out medication
• Save the stock-out bulletin for the Pyxis® System Manager
• The Pyxis System Manager or designee should increase the minimum level and the maximum level to maintain a 3-day minimum and 10-day maximum level
• Monitor by reviewing the console refill activity report or the stock-out report located within Pyxis Med Analytics

Blind stock-outs

• Monitor by reviewing the blind stock-outs report located within the Pyxis Med Analytics
• When a blind stock-out occurs, refill the medication when notified by nursing because the nurse has no access to the stocked out medication
• Educate staff on the importance of correctly recording the quantities removed and refilled

False stock-outs

• When a false stock-out occurs, refill the medication as soon as possible because the Nurse cannot access the falsely stocked-out medication, even though the medication is in the Pyxis MedStation system
• Educate staff on the importance of correctly recording the quantities removed and refilled
• Monitor by reviewing the refill activity report, or the stock-out report located within Pyxis Med Analytics

Refills

Target each medication for refill 3-5 times per month in order to optimize pharmacy labor, preserve medication safety and manage inventory costs. Using a 3-day Min and 10-day Max, each medication would be refilled approximately four times per month. Adjust quantities of medications to meet this benchmark, space permitting.

1. Review the inventory of each Pyxis MedStation once every three months, looking for medications with refills outside the targeted range.
2. Review one Pyxis MedStation system or all systems on a single nursing unit per business day until all are finished, and then cycle through, repeating the sequence (this process could take over 2 months in large hospitals, depending on the number and locations of Pyxis MedStation systems).
3. Run the Meds Without Removal report from the console. Remove medications that have not been refilled in the last 60-90 days, excluding those designated as Standard Stock. This will free up pockets that can be used for increased inventory levels.
4. From the Pyxis Med Analytics offerings, run the Meds Without a Removal > 90 Days report to identify what meds should be removed from the Pyxis MedStation system. Also, to modify mins and maxs, run the stock-out report.

5. If you do not have Pyxis Med Analytics offerings, an alternative is to use Console reports. From the console, run an activities report of med refill activities sorted by Stn/Med for 30 Days.

6. Review the report for medications that have been refilled more than five, or less than two, times per month. Items with no refills will not display on this report. Do not include items that have been restocked from the return bin (best practice is to return all medication to pharmacy).

7. For medications that must be counted, make certain the maximum level is a reasonable quantity to count; use multiple pockets if necessary.

8. Limit the quantity of high-risk medications available.

**Managing medications in multiple pockets in the same Pyxis MedStation system**

When adjusting Max/Min levels, it may be necessary to use more than one pocket to accommodate the required quantity. “Sequential draining” will be triggered as one pocket is emptied and the next pocket is accessed. Multiple pockets of the same drug may be in different drawers, in the same MiniDrawer secure medication dispensing pockets in multi-dose mode (typically used for controlled substances) or in CUBIE pockets.

**For MiniDrawer, Carousel or Matrix pockets**

The following settings will force the software to deplete the quantity of medication in a pocket to zero before opening the next pocket.

<table>
<thead>
<tr>
<th>Max</th>
<th>Min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pocket A</td>
<td>10</td>
</tr>
<tr>
<td>Pocket B</td>
<td>10</td>
</tr>
<tr>
<td>Pocket C</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
</tr>
</tbody>
</table>

Pocket A will open for medication removals until the Min reaches 0. Pocket B will open when the Min in pocket A reaches 0, and will continue to open until the Min reaches 0. Pocket C will open when the Min reaches 0 in Pocket B. The name of the medication will appear on the Refill report for replenishment when the Min reaches 9.

**For CUBIE pockets**

Sequential draining for CUBIE pockets is different. The system programming recognizes the total Min and total Max for all pockets of the same med ID. With the following settings, the software will deplete the quantity of medication in a pocket to zero before opening the next available pocket.

Example:

<table>
<thead>
<tr>
<th>Max</th>
<th>Min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pocket 1</td>
<td>10</td>
</tr>
<tr>
<td>Pocket 2</td>
<td>10</td>
</tr>
<tr>
<td>Pocket 3</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
</tr>
</tbody>
</table>

This medication will appear on the refill list when the total of 9 are remaining for that line item. Each CUBIE pocket is sequentially number stamped (like date and time stamp) with each load or refill. The sequential drain programming will aid the rotation of stock when empty CUBIE pockets are refilled, not partially-full pockets. If a partially-full CUBIE pocket is refilled, it will reset the time and date stamp. In this example, if only pocket 1 & 2 are refilled, they will effectively become pocket 4 & 5 in the sequence and pocket 3 will finish draining before moving on to pocket 4. However, if pocket 3 is also refilled to top off the partial amount, then it will become pocket 6, leaving old stock in the last pocket of the sequence. For this reason, it is important to refill only the totally empty pockets when the same medication is in two or more CUBIE pockets.
Outdate tracking

1. Use the Outdate Tracking feature to manage expired medications during the refill process.
2. Teach all applicable pharmacy staff the expected standardized practice to manage expired medications and monitor compliance.
3. When the expiration date is displayed on the screen, compare the date on the screen to the date on the medications being refilled (Note: To make this easier for the refilling technician, write the expiration date on the label on the bag during the checking process).
4. If the date displayed on the screen is earlier than the date on the medications being placed in the system, no action is necessary—place the medication in the pocket.
5. If the expiration date displayed on the screen is later than the date on the medications being placed in the system, change the date on the screen to match the expiration date of the medications being added.
6. During the refill process, check for outdates from the main menu.
7. If a medication has reached the outdate date, an icon will appear on the Pyxis MedStation screen.
8. When the outdate button is touched, medications that are out of date will display on the screen.
9. Check the expiration date of the medication in each pocket and remove outdated stock.
10. Change the date on the screen to the next earliest expiration date of the product remaining in the pocket.
11. If this process is followed, the Outdate Medication report generated after the refill should be empty.
12. Make adjustments to Max and Min levels for outdated medications that required removal.
13. Verify that all outdated medications are removed by running the Outdated Medication report monthly.
14. Policy and procedures should address removing short dated compounded medications or opened multi-dose medications that have shortened expiration dates.

Quarterly review process for good inventory management

1. Put all Pyxis MedStation systems on a 13-week rotating schedule, reviewing one unit or one nursing unit with multiple systems at a time.
2. Evaluate medications being refilled more than five times per month, moving these to larger pockets or multiple pockets where higher maximum levels are required.

Pyxis Med Analytics- Optimization made easy with actionable information

Provides our customers’ key metrics to help optimize your devices and track trends quickly. The stations can be tracked on a daily, monthly, quarterly and yearly basis. The key inventory metrics that are tracked focus on the following:

- Stock-out percentage
- Vend to refill ratio
- Number of pockets w/o removals for > 90 days
- Avg. remove out-dates/station
- Number of meds with greater than 2 loads/unloads
- Avg. number of blind stock-outs/station