Advice for Taking Advantage of IV Compounding Automation

Huntsville Hospital Achieves Cost and Quality Benefits

Hospitals are increasingly turning to IV compounding automation to improve their sterile compounding operations and rely less on outsourcing. It is an option that can deliver safety and cost savings benefits.

In a recent *Pharmacy Purchasing & Products* article,1 author Berkley Sykes, PharmD, Pharmacy Manager for Sterile Products Services at Huntsville Hospital in Alabama, describes their experience implementing two Omnicell® i.v.STATION™ Non-hazardous Compounding Robots. Huntsville Hospital is a 941-bed facility serving northern Alabama and southern Tennessee.

A summary of the article is provided below, but we encourage you to read the full article (login required) for additional best practices and implementation tips.

**Rita and Margo Come on Board**

Huntsville installed the first robot in 2013 and the second in 2016, naming them Rita and Margo, respectively. Their goals for the technology were twofold:

- Driving a consistent, reliable process to support patient safety
- Lowering costs of IV medication

To ensure a smooth transition, Huntsville adapted many of its in-house manual compounding policies for the robotic compounding process, such as external lab testing, training, and cleaning guidelines.

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Huntsville Hospital Achieves Cost and Quality Benefits

Continued

Robotics Operation
The i.v.STATION™ robots are used for batch production of the highest volume preparations. The robots ensure precise measurement through gravimetric verification in a clean space environment, and support a 90-day beyond use date. Currently, one technician operates the two robots four days a week, 24 hours a day. Production runs Monday to Thursday to give staff time to send samples overnight for sterility testing by Friday. The redundancy of two robots protects the pharmacy from risk of outages or downtime.

While Huntsville began with calcium gluconate and succinylcholine production, the hospital has been adding more medications to its in-house compounding. The pharmacy continually evaluates opportunities to add new medications based on potential cost savings and other factors.

Financial Savings
For Huntsville, the financial savings and workflow improvements more than justify the investment in the technology. The chart above illustrates the savings they are achieving with only one specific drug, succinylcholine. The drug and supplies cost only $13 per unit when produced with i.v.STATION compared with $30 per unit when outsourced.

<table>
<thead>
<tr>
<th>Drug</th>
<th>Monthly Usage</th>
<th>Outsourced Cost</th>
<th>Insourced Cost</th>
<th>Annual Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Succinylcholine</td>
<td>1,000</td>
<td>$30.00</td>
<td>$13.00</td>
<td>$204,000</td>
</tr>
</tbody>
</table>

“Omnicell’s i.v.STATION™ not only met Huntsville’s safety and efficiency needs, but the lower cost and smaller size of the robot offered more flexibility in configuring the clean room.”

Advice from Huntsville
Cost assessment: In addition to the cost of the technology, consider service fees, labels, supplies, and stability and sterility testing costs.

Labor planning: At Huntsville, one technician can run two robots, so no additional labor was needed for the second robot. Instead of training all staff on using the robot, consider having dedicated technicians learn the technology, particularly in the beginning. This frees pharmacists to focus on clinical initiatives.

Logistics: Alternate medications and stagger the doses instead of making the complete monthly quantity to avoid having too much medication on hand with the same expiration date.

With two robots, plan which medications are run at the same time. For example, with two fast-producing medications, the technician may have trouble setting up the next preparation fast enough.

Taking Control
IV compounds are often high cost and high risk. Having increased control of sterile compounding is enabling Huntsville to provide optimal care to their patients while lowering costs. Another benefit of in-house production: Your pharmacy may provide compounding services to partner facilities, potentially adding a new revenue source for your facility.

Berkley Sykes, PharmD, is responsible for managing the inpatient sterile compounding areas and an outpatient oncology pharmacy at Huntsville Hospital in Huntsville, Alabama.

Her areas of focus encompass sterile compounding management, including IV robotics and workflow technology, cleanroom workflow optimization, hazardous drug preparation, and outsourced drug oversight.

1 Sykes B. Implementing robotic IV preparation to take control of patient safety and costs. PP&P. May 2018.
Managing insulin for hospital patients poses numerous challenges, including:

- Shortened expiration date when removed from refrigeration
- Numerous formulary variations that look-alike, sound-alike
- Availability for precise scheduled dose times (meal time, etc.)

Perhaps the greatest challenge relates to handling insulin vials that contain multiple doses and may or may not be used on multiple patients.

Although there is no single correct way to manage insulin through the automated dispensing cabinet, the Omnicell® medication dispensing system has some unique features available that may enable you to develop a better procedure for handling insulin at your facility.

Restricting Vials to a Single Patient

Restricting an insulin vial to one patient is recommended by the Institute for Safe Medication Practices (ISMP) and Centers for Disease Control (CDC). Omnicell SinglePointe™ software enables patient-specific medications to be managed in the cabinet where they are stored in a patient-specific bin. With this system multi-use items such as insulin can easily be issued from and returned to the cabinet after each administration.

Following are two examples using SinglePointe to manage insulin vials restricted to one patient:

Option 1: First Dose Delivered by Pharmacy

- Pharmacy dispenses a 3 mL vial that is labeled for the patient, and stocks it in the SinglePointe bin assigned to that patient.
- Nursing issues the prescribed dose of 5 units and uses the cabinet’s Medication Label Printer to print a label for the syringe.
- The vial is returned to the patient-specific bin in the cabinet.

Option 2: Insulin Vials Stocked in Cabinet

- Insulin vials are treated as floor stock and stored in a single-item (common stock) bin in the cabinet.
- When the nurse removes the vial for the first time to fulfill a patient order, she uses the Medication Label Printer to print a patient-specific label for the vial.
- The nurse draws up a syringe for the prescribed dose of 5 units and prints a label for the syringe.
- The vial is returned to the patient-specific bin in the cabinet.

Using Vials for Multiple Patients

If your healthcare facility’s approach is to use a single insulin vial for multiple patients, you can follow this example:

- Insulin vials are treated as floor stock and stored in a single-item (common stock) bin in the cabinet.
- Upon removing the vial, the nurse draws up a syringe for the patient’s prescribed dose of 5 units and uses the Medication Label Printer to print a label for the syringe.
- The vial is returned to the common stock bin in the cabinet where it is available for other patients.

The flexibility of the Omnicell system allows it to be configured to track inventory by units of insulin and/or vials for ordering, issuing, and returning.

Safe, Streamlined Process

In the SinglePointe scenarios, storage, charging, issues, and returns are managed through the Omnicell cabinet. The integrated Medication Label Printer adds safety by ensuring the individual doses are properly identified.
How Predictive Analytics Helped Avert Drug Shortage Pain

What does predictive analytics mean—and more importantly—what can it do for you?

One hospital pharmacy discovered the power of predictive analytics to help avoid the impact of a recent heparin shortage. The health system started engaging with Omnicell’s Performance Center™ last year. Performance Center combines analytics software and live expertise to continually monitor pharmacy operations to drive improvement. The cloud-based software incorporates predictive analytics, which refers to the use of data to determine patterns and assess what may happen in the future versus simply reporting historical trends.

Warning Signs

In September 2017, an Omnicell Performance Center Strategist who regularly monitors customer data through the software saw a fairly high “shortage risk score” for heparin. After investigating further, she recommended that the health system pharmacy proactively address it.

Taking Action

At the time, the customer had only several days’ worth of inventory across the health system. So they started bulking up on heparin over the next several weeks. Indeed, heparin did go short less than two months after Performance Center predictive analytics identified the shortage. By that time, the pharmacy had amassed over two months’ worth of inventory.

Consistent Patient Care

The health system was able to avert the impact of the shortage while other healthcare facilities struggled with it. Thanks to the power of predictive analytics, this health system was able to maintain quality of care for their patients.

In addition to drug shortages, Performance Center incorporates predictive analytics for assessing price increases and stockouts.

Performance Center: An Extension of Your Pharmacy Team

With Performance Center a designated specialist works with your team to identify areas for improvement and proactively monitors your data to assess progress. This unique partnership is intended to improve performance for pharmacy medication management operations.

Some of the benefits you can achieve include:

• Reduce inventory spend and maximize strategic purchase decisions
• Manage shortage and expiration risk
• Standardize workflows for inventory management across the health system
• Cost/benefit evaluation of different courses of drug therapy
• Identify diversion activity
• Support regulatory compliance for 340B, DSCSA, and controlled substance management

Contact your Omnicell representative to learn more about Performance Center.
Keep Patients on Track with Multimed Blister Card Packaging

Forgetting to take a medication is the most frequently reported reason for nonadherence. Multimed blister card packaging, such as Omnicell’s SureMed® cards, offers a simple, proven solution to this problem. SureMed Multimed Blister Cards organize medications by time of day and day of the week, aiding with the following:

• Provides visual verification that enables patients to self-monitor their medication consumption—they can easily see if a dose was taken or not.
• Eliminates confusion about when to take certain medications, since they are organized by time of day.
• Eliminates the need to open multiple medication containers, which can also lead to errors in medication intake.

In a recent Pharmacy Times article Omnicell’s Rebecca Chater, RPh, MPH, FAPhA, Director of Clinical Healthcare Strategy, examines the evidence that supports the use of this packaging.5

Proof of Effectiveness
According to Chater, multiple studies have documented the role of multimed packaging in improving medication adherence. Some of the key findings she documents include:

• Multimed packaging has improved medication adherence over time, compared with other interventions that generally show diminished adherence over time.
• Blister packs are more effective than other packaging interventions used, with an overall mean weighted standardized difference effect size of 0.802 compared to that of pill boxes at 0.384.
• Interventions are more effective when delivered by a pharmacist (0.782) versus without a pharmacist (0.475).

Affecting Clinical Outcomes
Several studies went beyond documenting adherence behavior and showed improvement in actual clinical outcomes associated with multimed blister packaging. The FAME study from 2006 showed:

• Adherence associated with multimed packaging improved from 61.2% to 96.9%, with a reduction in mean systolic blood pressure from 133.3 to 124.4.

Similar results were shown in two studies conducted in 2017.

Supporting Value-Based Care
If you operate a retail or outpatient pharmacy, consider the benefits multimed packaging can have on your patient population, especially chronically ill patients with complex medication regimens. Omnicell offers a variety of ways to automate the fulfillment process, so pharmacy staff can dedicate more time to patient care services.

In the last issue of *Green Gazette* (Winter 2018) we outlined two approaches for wasting transdermal patches containing controlled substances at the Omnicell Automated Dispensing Cabinet:

- Documenting waste by hours
- Documenting zero waste amount

With the 22.5 software release available as of mid-May, we now have another approach for you to consider:

- Setting up patches as valid liquid and using new Volume Converter to determine waste amount

### Volume Converter Approach

The Volume Converter is typically used to compute measurements for liquid medication. It converts volume to amount and vice versa. The following outlines how to use this new functionality for wasting controlled substance patches. The example is based on a 50 mcg/hour/72 hour fentanyl patch that was discontinued after 24 hours.

### Item Setup

- Select Valid Liquid from checkbox
- Description: Fentanyl 50 mcg
- Strength Amount: 50
- Strength Unit: mcg
- Dosage Volume Amount: 1
- Dosage Unit: Hour
- Total Volume Amount: 72
- Total Volume Units: Hours

### Dispensing Alert Example: When removing the patch

Remember to remove current narcotic patch from patient and document waste.

### Dispensing Alert Example: When wasting the patch

Use Volume Converter to enter amount remaining on the patch and document the waste.

### Document Waste

- Use the Volume Converter included on Waste screen (with 22.5 software release) to get the amount in Strength Units and document the waste in medication strength.
- Enter the hours remaining on the patch, and it will be converted to mcg for waste amount.

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Omicell customers can find additional information about the 22.5 software release on myOmicell.com, the customer portal. You can log on or register for myOmicell [here](#).
Omnicell Analytics Enhancements Give You More Control in Managing Diversion

Omnicell Analytics has been adopted by many of our customers, who have had great success in identifying potential drug diversion. We continue to incorporate customer feedback directly into the application, and with the 22.5 software release we are giving customers more control with customization and notifications.

**Custom Peer and Cabinet Groups**
Customers often want to create custom peer and cabinet groups that differ from the default configured OmniCenter® user types and areas. You can now customize user and cabinet groupings, giving you more flexibility to create groups based on similar areas and workflows so the dashboard data will be more meaningful.

**Notifications of Interest**
You can now receive an email for specific events by subscribing to notifications of interest. Notifications include:
- Real-time email when a user issues a medication to a patient who was discharged
- Weekly summary email about users of interest along with their scores
By enabling these notifications, you will be able to monitor drug diversion even more proactively.

**Learn More**
Omnicell customers can find additional information about Omnicell Analytics 22.5 enhancements on myOmnicell.com, the customer portal (requires login).
Collaborate with Omnicell in Our New Customer Briefing Center

Located in our Cranberry Township facility near Pittsburgh, Pennsylvania, the Customer Briefing Center features the most advanced technology available to manage medications and supplies across the continuum of care. Since the Center’s opening in late winter, dozens of healthcare system teams from across the country have convened to discuss issues related to medication safety, security, efficiency, regulatory compliance, and cost containment.

Interactive sessions include:
- Demonstrations of the latest technology
- Collaboration with Omnicell subject matter experts
- Development of a go-forward plan tailored for your health system

Customer Briefing Center facilities also are available at Omnicell headquarters in Mountain View, California, offering you greater flexibility in arranging travel.

To arrange a session at a Customer Briefing Center, please contact your Omnicell sales representative.

Omnicell Employees Walk, Run for Diabetes Cure

Omnicell employees from our St. Petersburg, Florida office participated in the American Diabetes Association Step Out Walk on April 8. In addition to a $7,500 sponsorship from Omnicell, employees and their families raised over $6,100 to help fund research, education, and advocacy for those who live with diabetes.

The Omnicell team showcased to the community our leadership in transforming medication adherence. Our SureMed by Omnicell Multimed Blister Cards help diabetic patients remain adherent to their medication regimens—a critical step in maintaining their health.
Training

Listed below are some new training courses. Learn more and access these courses via the training section of myomnicell.com.

Point of Use: E-learning Courses/Recordings

22.5 Point of Use and Analytics Release Overview
In this recording, you will learn about new features and enhancements to the automated medication dispensing (point of use) and Omnicell Analytics product lines in the Omnicell 22.5 release.

XT Cabinet Hardware Setup for Self-install Customers
In this course, you will learn how to unpack your new Omnicell XT Automated Dispensing Cabinet. You will also learn how to configure the cabinet to communicate with the server, connect the battery, assign and load medications into the cabinet, and install the SafetyStock barcode scanner.

Medication Assignment Tool (MAT)
This e-learning module provides an overview of the Medication Assignment Tool (MAT), which provides a more visual and convenient way to assign medications to various locations in XT Automated Dispensing Cabinets earlier in the implementation process.

Performance Center: E-learning Courses

DSCSA Management
The Drug Supply Chain Security Act (DSCSA) outlines steps to build an electronic, interoperable system to identify and trace certain prescription drugs as they are distributed in the U.S. This course covers DSCSA Management software components and concepts, how the software tracks medications, and how it keeps your hospital compliant with DSCSA regulations.

Conferences

Omnicell participates in many conferences throughout the year. Some key meetings are listed below.

We hope you can join us at an upcoming event!

Acute Care Events

American Society of Health-System Pharmacists (ASHP) Summer Meetings and Exhibition
June 2–6, 2018
Denver, CO

Association for Healthcare Resource & Materials Management (AHRMM) Conference and Exhibition
August 12–15, 2018
Chicago, IL

Epic Users Group Meeting
August 27–30, 2018
Verona, WI

Non-Acute Care Events

Cardinal Health RBC
June 27–30, 2018
San Diego, CA

National Association of Chain Drug Stores (NACDS) Total Store Expo
August 24–28, 2018
Denver, CO