

With technology and business intelligence, pharmacy leaders are tackling medication inventory management challenges

In recent years, a priority of healthcare organizations has been to shorten length of stay in hospitals and move patients to alternative care settings such as ambulatory care clinics or home-based care. As care shifts to these settings, medication safety and robust inventory management are critical considerations.

During a May 2 session sponsored by BD as part of the 2022 Virtual Becker's Healthcare Conference, Perry Flowers, RPh, MS, Vice President of Medical Affairs at BD, moderated a discussion with three healthcare leaders about medication inventory management challenges and solutions:

- Michael Borgmann, MS, Director of Pharmacy Technology, Avera Health
- Ashley Dalton, PharmD, MHA, Associate Chief Pharmacy Officer, UC San Diego Health System
- Dave Webster, RPh, MSBA, Director of Acute Care Pharmacy Operations, Univ of Rochester Medicine

As the pandemic wanes, the acute care setting is still a critically important area for medication inventory management.

Drug shortages are expected to be a continuing and significant problem for inpatient pharmacy services. As Borgmann explained, "I don't see the shortage issue turning around in the near future. We continue to use our inventory management system to ensure that the right medications are pointed at the right facilities at the right time and to ensure that we don't overstock and understock at the same time."

Avera Health developed its inventory management system to address the challenges faced by its rural facilities. A common problem was that the lowest order packaging Avera's rural hospitals could order was more than they would use in five or 10 years. The organization needed a way to split packaging between facilities to lower the overall drug inventory and to reduce the number of products that expired on the pharmacy shelf, Borgmann said.

"We've used inventory tracking technology that allows rural facilities to quickly see what's on hand at our distribution center," Borgmann said. "They can order medications and they can return drugs to us, so we can send those products elsewhere in our system. Our focus is on lowering our overall inventory at all our facilities, which lowers their costs, reduces the amount of medication that is thrown away and is a win across the entire system."

Many healthcare systems are investing in better inventory visibility for ambulatory care settings.

Inventory visibility is the starting point for building more sophisticated medication management systems. UR Medicine, for example, has created a centralized services center for its clinic sites. "The services center is dependent on our inventory management model. We know exactly what we have, what's coming in and what demand is at different locations. All that information comes together in the software so we can manage it effectively," Webster said.

UC San Diego Health has also turned its attention to getting the right medications to its network of ambulatory care facilities. According to Dalton, "We partnered with our wholesaler and set up predetermined catalogs for our clinic sites. They can order based on package size and the medication is delivered directly to their site. All orders flow through a queue that we approve. We know exactly what's ordered and can identify early on whether issues may arise."

Automated dispensing cabinets play a critically important role in UC San Diego Health's inventory management system. As soon as clinic sites receive medication, the pharmacy team can see when it is added to automated dispensing cabinets. Analytics tools increase business intelligence and enhance inventory management across multiple locations.

UR Medicine has paired near real-time inventory information from automated dispensing cabinets with an inventory analytics tool to create valuable business intelligence. "Our inventory analytics tool gives us recommendations for adjusting periodic automatic replenishment (PAR) levels. This enables us to manage inventories across many centers, and during shortages we can quickly evaluate the impact on multiple locations," Webster said.

Inventory analytics is also a key enabler for UR Medicine's growth as an organization. When new hospitals join the UR Medicine network, they adopt the same analytic software. As a result, a single person can monitor and adjust PAR levels across multiple hospitals. It also becomes easier to move medication to other facilities if necessary.

Stockouts is one of the most widely used inventory key performance indicators in the pharmacy space. As Webster noted, "The last thing we want is for a medication to be unavailable when needed in the acute care setting as well as in the ambulatory care setting. We have sophisticated tools to help us predict and avoid stockouts. Driving the stockout rate down as much as possible is a key indicator, particularly for patient care and nursing satisfaction."

At Avera Health, one of its most important technology developments has been near real-time access to the inventory value of its systems. The organization used to generate an inventory value report once a year, after the annual pharmacy inventory. Now the report is available in near real-time every day. "This information has become one of the most useful metrics for directors and the buyers group. Our buyers can identify when we've over-ordered, then they correct that very quickly," Borgmann said.

Looking ahead, pharmacy leaders want to reinvent distribution and ambulatory care medication models.

Over the next 12-18 months, Avera Health plans to reconceptualize its medication distribution center to accommodate both acute care inpatient distribution and outpatient distribution. "We want to create one cohesive, functioning unit," Borgmann said. "The goal is to create a more robust distribution center model that includes everywhere in pharmacy."

The pharmacy team at UR Medicine has its eyes on addressing weaknesses in the ambulatory care medication model. As Webster noted, "We spend a lot of time, energy and money taking care of patients in the hospital and we must continue to do that. But what about the 300-plus other days when people aren't in the hospital? How do we manage access to their medications? That's an inventory issue. We need to redesign and reimagine the ambulatory care medication model and make sure that patients are cared for outside of the hospital as well."

To view the session, [click here](#).