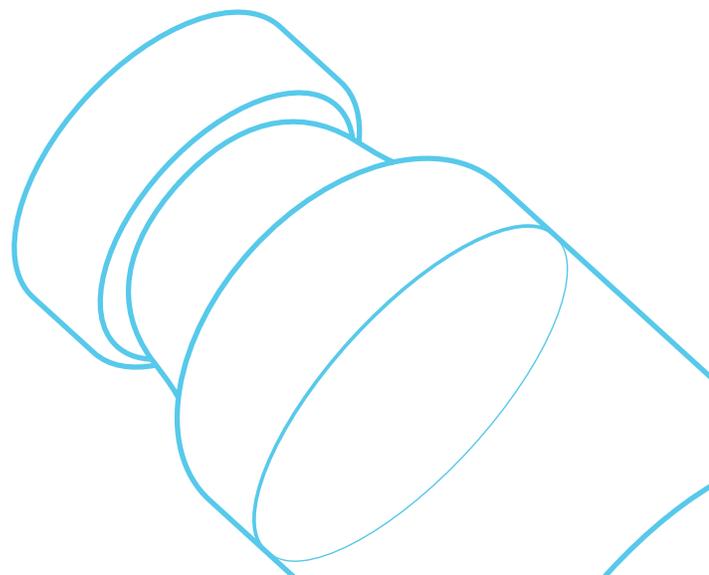


Methods & Opportunities for OR Med Dispensing

Now Faster and More Accurate

September 2015



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1.0 OR Med Dispensing Methods

There are as many approaches for distributing medications to the operating room (OR) suite as there are challenges. However, you can break anesthesia medication dispensing into two major categories:

1. Storage-based dispensing
2. Tray-based dispensing

These dispensing methods can be further characterized by speed, the amount of time and manpower required to restock, and accuracy, how many (or few) errors occur in the typical restocking process. Use of centralized automated dispensing cabinets (ADC) and in-room anesthesia workstations fall into the storage-based dispensing category and tray-based dispensing can be executed either manually or with automation like Kit Check.

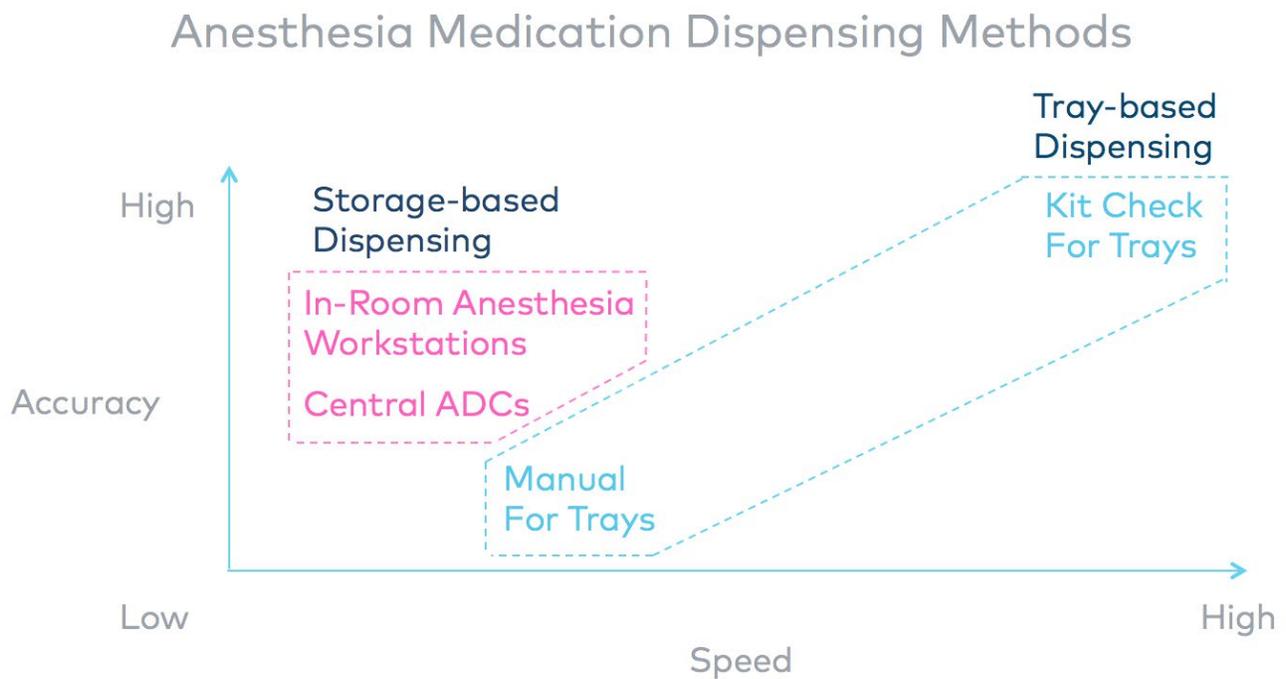


Figure 1

2.0 Storage-Based Dispensing

A storage-based dispensing method focuses on placing anesthesia medication stock in secure locations either centralized in the OR suite or in-room. The assumption is that the storage devices or cabinets are locked and restrict access to authorized personnel. Anesthesia providers can then utilize medications as needed for clinical cases and hospital pharmacy staff restocks the locations either based on confirmed usage or at scheduled times such as mid-day or overnight.

The key benefit of the storage-based approach is supposed to be inventory accuracy and easy access to medications for providers. However, it is also frequently associated with:

- High levels of stock-outs
- Increased medication inventory requirements
- Increased manpower to maintain stock levels
- Restricted provider flexibility in how they practice

Storage-based Dispensing

In-Room Anesthesia
Workstations

Central ADCs

2.1 Living with Frequent Stock-outs

Stock-outs occur because of unplanned spikes in medication usage or more frequently because of inaccurate medication use recording. This situation occurs with controlled substances but is significantly more severe for drawers containing non-controlled items. Stock-outs create underutilization of OR and anesthesia provider time and risk undermining patient experience. Discrepancies also increase the time it takes for pharmacy to restock medications since the system cannot accurately portray what is required.

2.2 Compensating for Inaccuracy with Higher Inventory

To address inaccurate use recording and reduce risk of stock-outs, most hospitals respond by increasing OR-based medication inventory. This leads to higher cost and drug waste due to expiration. It also increases the risk of diversion to have so much bulk medication storage at numerous points within the hospital. This situation is most acute when utilizing central ADCs because there are fewer workflow controls.

2.3 Storage-based Restocking Increases Labor Requirements

Increased manpower requirements are common among storage-based dispensing methods and are most acute when employing in-room anesthesia workstations. The workstations tend to be more accurate in terms of controlled med use recording because of enforced workflows and secure unit dose storage slots, but they are the most time consuming to restock. Centralized ADCs are the second most time consuming method because they require a pharmacist to determine what is missing, address discrepancies, and refill.

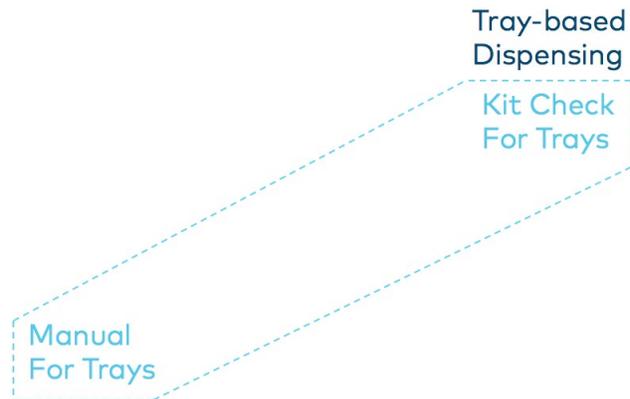
2.4 Trading Control for Inflexibility

The unit dose storage "slot" fill has another drawback for providers. It trades increased control and accuracy for decreased flexibility. This creates further strain on providers to follow a proscribed process while they are already under pressure to decrease OR turnover time.

3.0 Tray-Based Dispensing

The benefit of tray-based dispensing has historically been speed and efficiency. Swapping out like-for-like anesthesia trays for each case or each day reduced the decentralized storage re-stocking time. However, it was still a burden. Checking every medication in kits (that might have up to 150 items) to determine what is missing and if any are nearing expiration is tedious and time consuming. Many organizations cannot spare the pharmacist time to manually check the kits.

3.1 Combating Inaccuracy



In addition, manual tray restocking is notoriously inaccurate. Even with a pharmacist double-check of technician stocking, a high incidence of tray inventory errors creates frustration for providers and pharmacy alike.

3.2 Improving Speed and Accuracy

Kit Check introduced automated anesthesia tray restocking to dramatically improve efficiency and accuracy in anesthesia medication dispensing. Studies presented at ASHP and in a peer-reviewed pharmacy journal show that Kit Check users can restock anesthesia trays 72-90% faster than manual methods. It is an even greater efficiency improvement when switching from storage-based dispensing. In addition, accuracy improvements range from 99.5-100%.

The combination of speed and accuracy has led dozens of hospitals to transition from manual restocking to the automated solution powered by cloud software and RFID technology. Even more surprising to some observers, hospitals that had abandoned manual tray restocking in favor of storage-based dispensing have returned to using anesthesia trays because of Kit Check's greater efficiency and accuracy compared to legacy methods.

4.0 Complementing Anesthesia Workstations

More recently, other hospitals have sought to integrate Kit Check's efficiency for anesthesia tray dispensing with the controlled workflow features of in-room anesthesia workstations. Kit Check enables these hospitals to swap out entire workstation drawers in seconds. Instead of restocking anesthesia workstations item-by-item, a standard set of medications is replaced and the tray of unused medications is returned to the pharmacy.



This approach is an efficient way to use pharmacy resources and eliminates the need to send highly paid pharmacists to conduct OR refills in off-hours. In addition, this approach ensures all medications are checked for expiration prior to each patient case. This reduces the risk that a medication can go unused in the OR through a series of cases and pass its expiration date. Hospitals that have adopted anesthesia workstations to reduce diversion or enhance process consistency still receive those benefits while avoiding the high cost of restocking by using automated anesthesia tray replenishment.

5.0 Anesthesia Trays Are Viable & Preferred Because of New Technology

Ideas change when constraints are removed. Manual anesthesia tray processing is hindered by human error and the inability to check multiple items simultaneously as displayed in Figure 1. Combining cloud-based software with RFID eliminates errors and enables entire anesthesia trays to be inventoried in just five seconds. When an anesthesia tray can be restocked in less than three minutes instead of 20-30 minutes, it fundamentally changes the math on the tradeoffs associated with different dispensing methods.

Barcode technology is too slow and requires too much process consistency and manpower for it to be viable for most pharmacies. At a time when staff capacity is extremely tight and scrutiny over accuracy is at an all time high, both manual processes and legacy technologies are insufficient to meet the needs of a twenty-first century hospital pharmacy. A fast and accurate solution is required.

Have You Made the Switch?

We find that the status quo at most hospitals falls in one of three situations when it comes to using anesthesia trays.

Situation	Automated Restocking Solution
Don't use anesthesia trays because they are using in-room anesthesia workstations and think the approaches are incompatible	Kit Check automation complements in-room anesthesia workstations with drawer swaps
Don't use anesthesia trays because they assume the manual restocking process is too labor intensive	Kit Check is the fastest approach to restocking anesthesia medications and the least burden on pharmacists
Manually restock anesthesia trays today	Kit Check brings immediate benefits, improving both speed and accuracy

Hospitals that use manual restocking are switching to Kit Check for the same reasons that those using storage-based dispensing are changing:

- Faster restocking that saves time and manpower cost
- Higher accuracy in dispensing
- Reduced inventory
- Lower incidence of stock-outs
- Complementary to in-room anesthesia workstations

To learn more about Kit Check and make the switch to automated anesthesia tray dispensing, fill out the form [here](#).

Other Resources From Kit Check



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The image shows a report cover with a bar chart and a pie chart. The bar chart has three bars of increasing height. The pie chart is divided into four segments. The report is titled 'Anesthesia Med Tracking Survey Report'.



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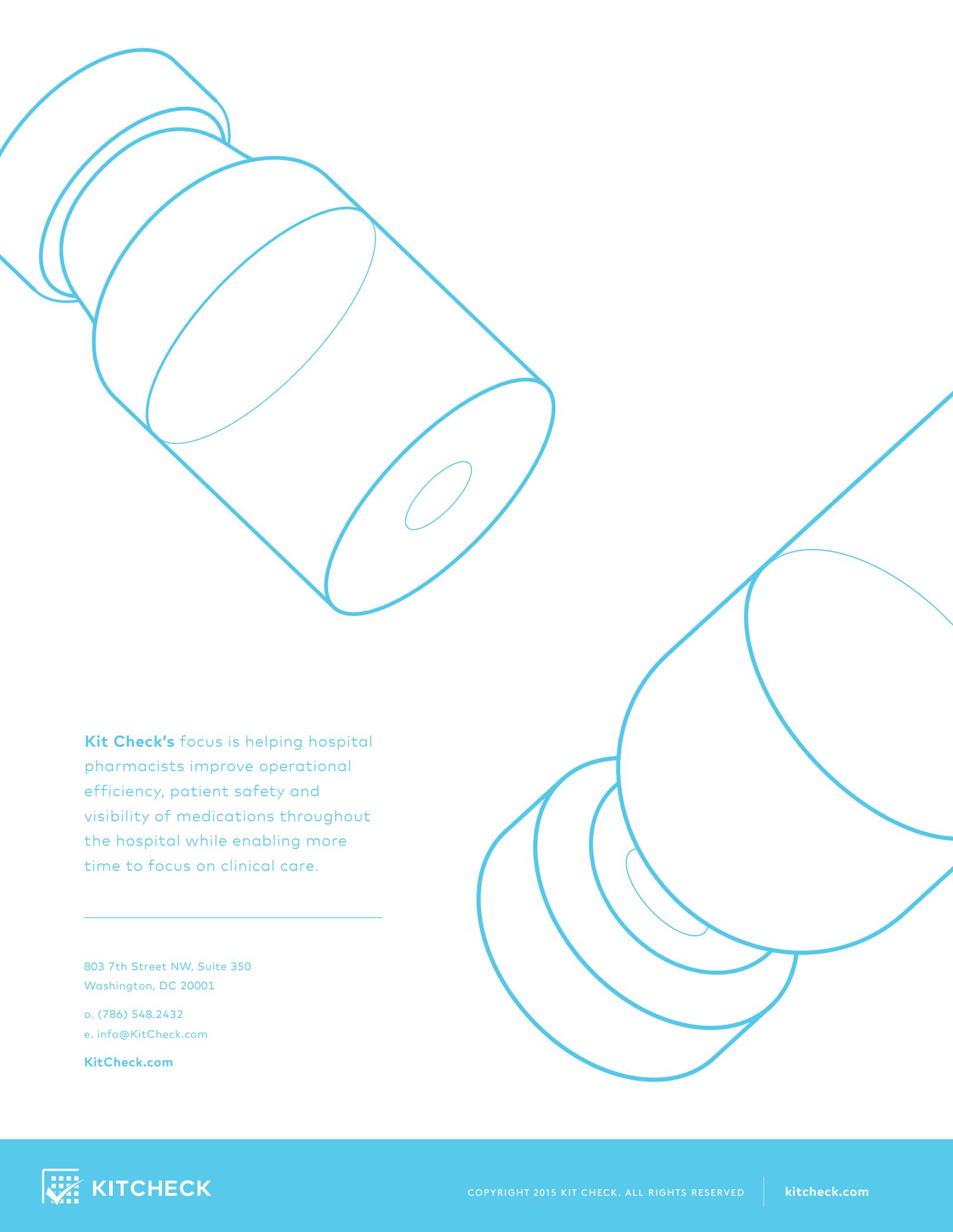


**Kit Check
Case Study**

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Kit Check's focus is helping hospital pharmacists improve operational efficiency, patient safety and visibility of medications throughout the hospital while enabling more time to focus on clinical care.

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