

What was done

An integrated Inventory Management and automation solution was implemented at American Hospital (**BD Pyxis™ SupplyStation™ system**, Figure 1). 83 automated dispensing cabinets, a central management system, and a data analytics solution, are serving the 278-beds hospital.

Figure 1. BD Pyxis™ SupplyStation System.



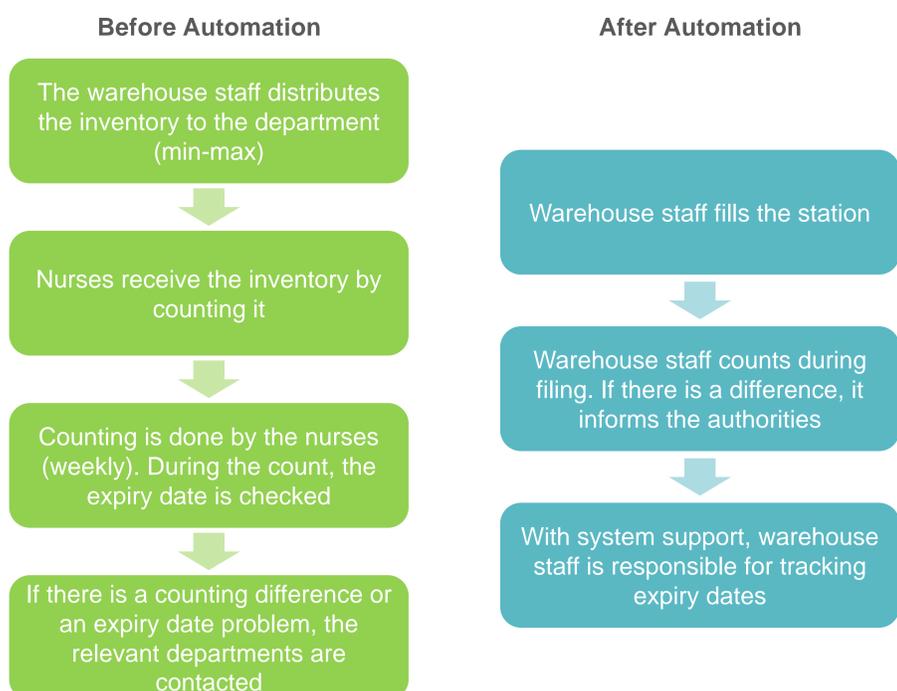
Why was it done

Despite medical devices and supplies are often high-cost products, they are often **sub-optimally managed by hospitals**. The objectives of the installation were the **optimization and the automation** of the inventory, and the **charge management workflows** (Figure 2 and 3), to comply with JCI (Joint Commission International) standards and address current challenges as labor, stock-outs, space, costs and charges accountability, traceability.

How was it done

The workflows for medical devices/supply inventory, and for patients charge management were mapped pre-installation and major challenges identified. Based on these needs, the decision to automate the hospital supply management was made. The cabinets were installed in the whole hospital but in particular in **operating rooms, emergency rooms and intensive care units**.

Figure 2. Inventory Management Workflow.



What was been achieved

The impact of automation was measured **one-month pre and one-month post installation**, and five major areas of improvements have been identified:

- 1) Significant decrease in **workload**: -8% for nurses; -30% for charge secretaries;
- 2) Missing **charge rate** reduced from 2.5% to 0.1%;
- 3) Improved **use of space** and material organization;
- 4) **Inventory** optimization: 0% stock-out, -16% expired items; - 45% on-hand inventory;
- 5) Improved **materials and patients' safety**, ensuring that supply were managed in the right way by the right staff. Patients are now protected by the risk of being provided with the wrong device.

All the nurses (n>50) were interviewed, reporting great satisfaction and ease of use with the new system. Furthermore, a positive return on investment was achieved in 4 years.

What is next

Due to legal regulations (MDR Regulation/ UDI Tracking requirements) American Hospital is planning to leverage the automated system to achieve a **full compliance and traceability** of critical medical devices throughout their hospital.

The decision of investing in automation demonstrated important benefits in **terms of safety and efficiency**, with a positive impact on the hospital's **economy** as well.

Figure 3. Charge Management Workflow.

