

FRESENIUS MEDICAL CARE NORTH AMERICA

PRODUCTION DOWNTIME REDUCTION

THROUGH IMPROVED INVENTORY ACCURACY

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Fresenius Medical Care North America (FMCNA) is a vertically integrated renal care company, with its North American Durable Goods Division supplying more than 90% of the dialysis machines in the U.S. market. As one of the three active medical device sites within the Fresenius network, the Concord, CA site primarily manufactures hemodialysis (HD) machines, peritoneal dialysis (PD) cyclers, crit-line monitors, and dry concentrate mixing systems.

The Concord site experienced a significant increase in production line downtime in 2017, averaging 439 hours monthly for all assembly lines. The Tauber team partnered with FMCNA to determine root causes and reduce this costly downtime. The team used 5-Why analysis and determined that 84% of downtime was caused by component shortages. Of these shortages, 57% were due to inventory discrepancies between the physical stock and ERP inventory. The remaining 43% were due to ineffective communication with buyers, insufficient ERP safety stock, and supplier issues.

To identify areas contributing to inventory discrepancy, the Tauber team mapped raw material movement and information flow within the Concord site. Inconsistencies in the complex and heavily manual transactions across numerous stages of material movement and consumption were the main cause of inventory discrepancies. The team worked cross-functionally to redesign the material consumption and purchasing processes to enable more accurate inventory. The new process simplified material transactions, reducing opportunities for human error, and ensured that only needed materials were moved from the warehouse to the assembly line.

The team conducted a production pilot with proposed physical bin management changes in preparation for the new consumption process. The team also evaluated the capabilities of in-use software, and tailored the existing manufacturing execution system (MES) to a simpler material consumption interface. Additional causes of line downtime were addressed by restructuring communication within departments and implementing changes in the ERP system.

The Tauber team's recommendations to improve inventory accuracy will result in over 70% downtime reduction, yielding annual savings of \$2.3M from reduced overtime, production labor, and expedited shipments. Additionally, \$4.6M of inventory investment can be eliminated, and 9% of warehouse space can be reallocated. An average of one hour per day of management time can be shifted from downtime resolution to continuous improvement.