SigmaMed Solutions
transforming complexity

Surgical Flow Improvement and Process Redesign in Central Sterile Processing

Problem and Opportunity

A hospital surgery unit was experiencing late case starts and in-case delays.

Lean Sigma Approach

A thorough analysis of case data and a survey of staff were made by a SigmaMed Solutions consultant. There were a number of causes for delays, but the major factor was errors in completeness or integrity of the sterile packaging for surgical sets from Central Sterile Processing. A team of sterile processing staff, an outside sterile processing resource, and key process customers was assembled for a Kaizen event. Key findings and improvements included:

- A spaghetti diagram showed disjointed and inconsistent flow of used and sterile sets between two floors of the hospital. There were two sterile processing areas, and the one closest to the surgical unit was re-purposed to handle rapid turnover of sets (e.g. hand sets) when needed for an upcoming case. The main sterile processing unit was re-purposed for larger orthopaedic sets and endoscopy sets.
- Modeling of set usage showed that given the sterilizer cycle time, hand sets could not be turned over quickly enough to meet the usual case demand. A small amount of capital was used to purchase a few items to complete 2 additional hand sets.
- Sets were occasionally incomplete, either with instruments missing or incomplete packaging. Job aids with pictures and checklists for completed sets were posted at assembly workstations.
- Sterile wrappers were frequently found to be torn when the set was retrieved from inventory. Root cause was the way sets were put into the storage shelving. Shelves were redesigned to avoid stacking the wrapped sets on top of each other.
- Supplies and spare instruments were missing or hard to find, causing delays in set assembly before sterilizing. A 5S reorganization of both sterile areas put frequently used supplies and instruments within reaching distance of the set assembly benches.
- Checklists were implemented to make sure that all sterilizer documentation was complete and sterility indicators were present.

Results

Case delays due to errors in set assembly were virtually eliminated. Process performance went from more than 10% incomplete sets to 5-Sigma performance (4 sets out of 1000 with errors). Flashing of single instruments in the OR was reduced to less than 1% of cases; the only real use for flash sterilization was for late-arriving vendor accessory supplies or dropped instruments.