



STREAMLINING SURGICAL INSTRUMENTS FOR IMPROVED EFFECIENCY AND COST SAVINGS

Virtua Health, Voorhees, NJ

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Staff Input and
Suggestion of
Changes

Determine Best
Practices

Collaborate with
CSS, OR Staff, and
Surgeons

Announce,
Educate, and
Implement New
Changes

Evaluate New
Changes for
Efficacy

Introduction

With increased scrutiny regarding excessive healthcare spending across the U.S., it is pertinent that cost savings be considered, while not affecting patient safety and outcomes. Poorly designed instrument sets can lead to increased frustration amongst the surgical team and excess expenditures to operating rooms. Studies have shown that surgical costs within the U.S. are extremely high, with inpatient surgical care representing nearly 50% of hospital expenditures and 30% of overall healthcare cost (Kaye et al., 2020). Improved management of sterile instrumentation for operating rooms provides an opportunity to reduce cost while still maintaining the current level of patient care (Ahmadi, Mael, Schwerha, & Hostetler, 2019).

Purpose

The Voorhees OR Shared Governance Team recognized the opportunity to **improve efficiency and reduce costs by streamlining surgical instrumentation sets**. The team observed several instrumentation trays within the specialties of general surgery, gynecology, plastics, and robotics, which were in need of updates. Many of these surgical sets contained redundant and rarely used instruments that can be removed and repurposed within other sets. The shared governance team determined the benefits of reorganizing these surgical trays to improve efficiency within the OR, decrease surgical costs/waste, and improve patient care.

Methods

- Over the course of a 4-5 month period, the shared governance team, along with surgical staff and surgeons, conducted an in-depth analysis of surgical instrumentation sets within several specialties.
- After finalizing these tray sets, the team then coordinated with the central sterile supply (CSS) department to create a standardized instrumentation tray for the specialties of general, gynecology, and robotics surgeries.
- These newly created sets were then trialed with all of the Voorhees main OR staff over a 2 month period.
- OR staff and surgeons were encouraged to provide feedback regarding the efficiency, amount of instrumentation included in the tray, and all additional concerns regarding its use.
- Overall, the surgical trays that were updated included the following: general laparoscopic, abdominal open surgery, breast, and minor vaginal trays.
- The additional instrumentation removed from these various trays were repurposed into individual sterile packs, available to staff if needed.

Outcomes

Our team was able to identify a need within our department that could improve patient outcomes and staff satisfaction while reducing overall costs. We were able to generate professional dialogue with surgeons, OR staff, and CSS to create a system that was effective for the patient, the staff, and the surgeons.

The professional communications provided a systematic change by which we were able to create a solution that was suitable for all those effected. The calculated cost savings associated with the instrument reduction was at least \$10,500/year which does not account for the time savings related to faster surgery set ups, faster break down after surgery, less employee fatigue, lowered erosion of surgical instruments, and improved staff satisfaction. "Finding new ways to improve efficiency and decrease expenses is a never-ending quest for nursing leaders. The current health care cost reimbursement structure requires health care personnel to provide the best patient care at the lowest possible cost" (Poulson, 2019)



Discussion

According to Mhlaba (2015), the average cost to reprocess a single instrument is between 34¢ and 47¢ per instrument which accounts for time to decontaminate, wash, and sterilize, in addition to cost of supplies. There is an unknowable cost in staff satisfaction related to the lowered burden in time for surgical preparation for surgical staff in the OR, lower stress in CSS reprocessing of instrument sets, and faster and more thorough throughput. With recent publicized incidence of exposures to Hepatitis B Virus, fewer instruments means less exposures to communicable diseases (Rosenblatt, 2018). "Surgical site infections account for 20% of these HAIs, some of which have been associated with deficiencies in sterile processing" (Alfred, 2020). Therefore, fewer instruments results in lower costs for surgical services, faster set up for surgery, improved throughput, potential lower risks of infection, and better patient outcomes.



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