KAISER PERMANENTE®

Rigid Endoscopes – Reducing the Need for Hazardous Sterilizers with Autoclavable Camera Heads

Environmental and Human Health Impact: Reduced worker and ecosystem exposure to a hydrogen peroxide-based sterilizer, a respiratory system irritant and carcinogen.
Business Impact: New contract and sterilization process deliver 31% cost saving at completion of product conversion, plus a potential $1M in annual savings from less hydrogen-peroxide cassettes used

Challenge

Rigid endoscopes are the highly technical tools that enable surgeons to perform minimally invasive surgeries through a small incision in a patient's body. The scopes have interchangeable heads that enable surgeons to obtain images of organs, take biopsies, and perform other tasks without having to open the patient up. Until recently, rigid endoscope cameras were only designed for chemical-based sterilization between uses. The hydrogen peroxide-based chemical has been deemed hazardous to worker safety by OSHA and to aquatic life. The Kaiser Permanente Surgical Core Group and supporting subject experts were interested in new rigid endoscope camera technology that can be sterilized with steam in an autoclave.

Aim/Goal

To select a rigid endoscopy camera head that could be steam sterilized, thereby reducing the purchase of and worker exposure to chemicals.

Team

Dr Mark Yamamura, Clinical Lead
Robert Gotto, Senior Sourcing Director
Dr Greg Maletis, Chair National Arthroscopy SST
Surgical Core Group

Actions Taken

- ✓ The Surgical Core Group prioritized the steam sterilization feature early in the sourcing process, setting expectations for the initiative.
- ✓ A comprehensive cost analysis took into consideration the usage rate/throughput of camera heads, the amount of chemical used per sterilization load, the volume of water used per autoclave load, the cost of the chemical, and the cost of water.
- ✓ All suppliers under consideration were made aware of Kaiser Permanente's desire for an autoclavable rigid endoscope product.
- ✓ Compared total cost of ownership, clinical acceptability, and environmental benefits for each supplier.

Results

- ✓ The differentiator among the four suppliers was the availability of the autoclavable camera head.
- ✓ The Surgical Core Group prioritized the environmental attribute, and ultimately deselected the incumbent supplier, awarding the contract to Linvatec in the last quarter of 2008.
- ✓ ***At completion of the product conversion in 2011, Kaiser Permanente will avoid the purchase and disposal of 17,000 sterilizer chemical cassettes annually, saving the organization over $1 Million each year.***

Linvatec Autoclavable Camera Head

Lessons Learned

- ✓ The consideration of autoclave versus chemical sterilization required the sourcing team to incorporate more usage and operational factors into the decision-making process.
- ✓ When evaluating the environmental impacts of products and processes trade-offs that need to be considered. In this case, worker exposure to the chemical sterilizer was compared to the use of water in the steam sterilization process.

Next Steps

- ✓ Planned and staggered conversion from incumbent supplier of rigid endoscopes to Linvatec. Conversion expected to last three years.
- ✓ Allocation of secured regional funding to replace any old autoclaves with new, high efficiency autoclave equipment that uses an extremely low volume of water per load.

For More Information Contact: Environmental-Supply-Chain@kp.org