Yale NewHaven Health
Yale New Haven Hospital

RAPID-CYCLE IMPLEMENTATION OF THE TROPHON UNIT FOR HIGH-LEVEL DISINFECTION (HLD) OF TRANSVAGINAL ULTRASOUND PROBES

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INTRODUCTION

HLD is an area of high scrutiny by regulatory agencies. Deficiencies associated with medical equipment, devices and supplies is the second most frequently scored standard and is likely to result in Conditional Level Deficiency for Centers for Medicare and Medicaid Services (CMS) and which, if pervasive, may be escalated to an Immediate Threat to Life (ITL) finding, jeopardizing the hospital's funding by CMS and exposing patients to a higher risk of infection. From 2013-2016, ITL declarations directly related to improperly sterilized or high-level disinfected equipment increased significantly and it was the number one finding of all ITLs in 2017.

OBJECTIVE

To reduce the number of findings related to HLD during the next Triennial Joint Commission survey providing safer patient care.

METHODS

In June 2016, consultative Joint Commission Resource surveyors identified 24 findings in the process of HLD in various locations of Yale New Haven Hospital (YNHH). Each step in the various processes used for HLD was cited at one or more locations, with the majority of the findings related to the Glutaraldehyde User Station (GUS) disinfection process.

A multidisciplinary Charter Team was developed to assess the findings and determine the best approach to mitigate findings before the triennial Joint Commission survey expected late in 2016 or early in 2017.

An assessment was conducted to determine the number of locations performing HLD, the process being used to perform HLD and the types of instruments that were undergoing HLD.

To improve the safety and effectiveness of reprocessing and minimize the number of potential findings in the allotted time frame, the manual disinfection GUS stations were removed and self-contained, automated Trophon units which use hydrogen peroxide to disinfect ultrasound probes were installed in all locations where transvaginal probes undergo HLD.

RESULTS

38 sites performing HLD were identified across multiple service lines and departments, both in the hospital and ambulatory locations

19 locations were utilizing transvaginal probes, and of these, 9 locations were already performing HLD with the Trophon unit

10 additional Trophons were purchased

10 GUS stations were removed

All areas where assessed for regulatory and safety compliance, all staff were trained to use the new instrument, standardized log sheets were developed and a policy was created and approved by Infection Prevention and Central Sterile Supply prior to the triennial Joint Commission survey

YNHH received only 1 finding related to HLD during the survey, representing a 96% reduction, and mitigated any Conditional Level or Immediate Threat to Life (ITL) findings

GUS STATIONS

Complex Process:

- ✓ Temperature dependent
- ✓ Time sensitive
- ✓ Multiple QC testing steps
- ✓ Measurement and dilution of solutions
- ✓ Adequate rinsing steps

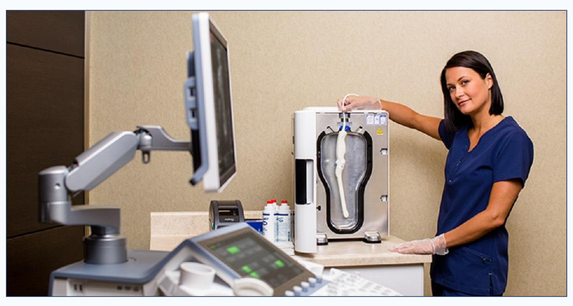
Staff Safety Concern:

- ✓ PPE required: gowns, gloves and goggles
- ✓ Corrosive chemicals
- ✓ Requires special ventilation
- ✓ Eyewash station required

TROPHON UNITS

Simplified Process:

- ✓ 7 minute cycles
- ✓ Hands-off technology
- ✓ No exposure to harmful chemicals
- ✓ Environmentally friendly
- ✓ Sensor technology validates each disinfection cycle



DISCUSSION

GUS HLD disinfection is a complex process which includes multiple manual steps such as measuring, dilution of solutions, temperature and time monitoring, special ventilation and the use of adequate personal protective equipment. There are several types of quality control steps which need to be performed daily and with each disinfection cycle. Improper technique used with the GUS stations can lead to inadequate disinfection of instruments, possible transmission of pathogens or exposure to hazardous chemicals. Each step is an opportunity for a potential finding during an accreditation or regulatory agency survey. Replacing GUS stations with Trophon Units, where applicable, greatly reduces the opportunities for findings during surveys while providing safer patient care.

Trophon use is less complex and safer than HLD using a GUS. This hands-off technology does not expose staff to harmful chemicals, as the GUS station does, and the sensor technology validates each disinfection cycle eliminating the need for time consuming quality control.

IMPLICATIONS FOR YALE NEW HAVEN HOSPITAL

This rapid-cycle implementation led to a 96% reduction in the number of findings by the Joint Commission related to HLD during our triennial survey in 2017 and mitigated a Conditional Level or Immediate Threat to Life finding, as well as providing consistent and safer care for our patients at YNHH.