



## **Efficiently and Quickly Processing Electrosurgical Instruments**

The number of minimally invasive surgeries (MIS) in the United States is increasing every year as more instruments are being developed and specialized surgeons are increasing the adopting the use of MIS for different procedure. Hospitals are encouraging more MIS to develop a competitive advantage. This growing popularity of the MIS, including the use of robotic surgery, has increased the number of electrosurgical instruments (ESI) being processed through the Sterile Processing Departments (SPD) hospitals.

The maintenance of the ESI is so important that there is an exam\* offered in order to become a SPD Surgical Instrument Specialists. The main areas of concentration:

- 1. Care of Surgical Instruments**
- 2. Identification of Surgical Instruments by Proper Name**
- 3. Components, Assembly and Configuration of Individual Sets**
- 4. Instrument Inspection and Safety Testing**
- 5. Loaner/Implant Sets and Components**
- 6. Ethics**

By becoming proficient in these areas the SPD Surgical Instrument Specialists can improve the efficient processing of the ESI saving the hospital both time and money.

Most of the inspection of the ESI is for functionality and in most cases these are easily identified if the instrument is not functioning, for example not closing correctly. However, the inspection of the insulation on an ESI cannot be done visually. The only efficient way to test the insulation integrity of the ESI is to use what is commonly referred to as a hi-pot tester. There are two types of electrodes used with a hi-pot tester, a reusable one or a single use one. Different manufactures of these testers recommend their use in different departments of the hospital such as the Operating Room (OR) and or SPD.

After careful evaluation many hospitals, found that it was more advantageous to test the ESI in SPD. This provided the SPD the opportunity to immediately identify and remove any instrument found with a defective insulation from the rotation, providing the OR with complete kit of fully tested instruments. This allows the hospital to save a considerable amount of money by: 1) not having to use disposable (one-time) electrodes, 2) not having two certified SPD Surgical Instrument Specialists work in the surgery suite to test the ESI or two perioperative staff, who may have not been properly trained in the testing

and are not certified to test the ESIs and 3) taking the additional time in SPD to locate and deliver an ESI to the OR if an instrument is found to be defective. Adding additional expense to the hospital in personnel down-time, delays in operation and overall OR time.

It is also very important that all ESI's be properly tested and at the proper voltage setting.

An ESI found to have a defect such as a pinhole or crack in the insulation coating may cause unintended tissue burns or what has been termed as undesirable collateral damage to surrounding tissue adjacent to the intended patient treatment site. Checking for defects in the insulation coating in the SPD can significantly reduce the chance of an instrument with a defective coating being sent to the OR.

There are a number of reasons why an ESI could have a compromised coating including a.) age of the instrument, repeated sterilization cycles b.) abrasive cleaning c.) the heat that is generated through the ESI's while used in surgery d.) the mishandling of the instrument or in some cases where the ESI comes in contact with a sharp object such as a scalpel.

While some of these situations can be prevented, most of them will occur during the life of the ESI and therefore becomes critical that proper protocols be developed for the SPD to test the insulation integrity of all ESIs.

Recommendation XI of AORN's Recommended Practice for Cleaning and Care of Surgical Instruments states that "Surgical instruments should be inspected for cleanliness and proper working order after decontamination. (PNDS:I70). Inspecting instruments for sterilization before assembly of trays provides an opportunity to identify those instruments that require additional cleaning or repair before use".

Recommendation XI.d states that "Instruments in disrepair should be tagged or labeled and removed from service until repaired. (PNDS:I70)". If the defective instrument is found in the OR suite then procedures would have to be set-up to properly label the defective instrument and then relay that information and return that instrument to the SPD. This would mean that the SPD would have to develop a procedure for receiving the instrument from the OR and verifying the issue before deciding what proper action is needed.

By only visually inspecting an ESI an SPD technician will miss the extremely microscopic pinholes in the coatings. Recommendation XV.e of AORN states "Performing a visual inspection and performing **any recommended technological evaluation** before preparation for sterilization minimizes the risk of using defective instruments that could lead to patient injury. Detecting insulation failures well in advance of a surgical procedure provides time for equipment replacement."

Most hospitals have found that by using equipment like the McGan Technology MMPD-8K insulation integrity testing kit they can detect the microscopic pinholes or cracks in the coatings of the various ESI's. This unit complies with the AORN recommendations.

The base unit of the kit provides the ability to change the voltage to the proper setting for the different ESIs, is portable so we can move it to different test benches. The electrodes can be interchanged to test all sections of the ESI, for example the handles of a laparoscopic instrument or the inside of electro-surgical forceps.

This has helped to many hospitals to have a better piece of mind when a minimal invasive surgery is performed using ESIs.

\*<http://www.sterileprocessing.org/cbspd.htm>



**9 Liberty Hill Rd, Blackstone, Massachusetts 01504**  
**Phone 508-876-1070    Fax 508-883-3434**  
**sales@mcgan.com    www.mcgan.com**