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Steri-View

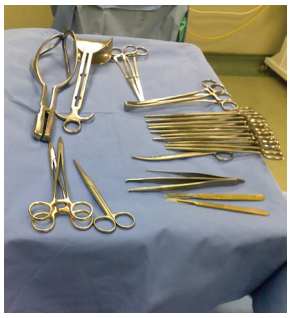
A SPECIALIST NEWSLETTER IN STERILIZATION & INFECTION PREVENTION TOPICS FOR HEALTHCARE PROFESSIONALS

MAY 2012

Benefits and Features of Ultrasonic Cleaners

Sterilization is defined as 'the complete destruction or removal of micro-organisms including bacterial spores'. We know that if a medical device is not clean it can never be sterile! Blood contains proteins. If blood remains on an instrument which then goes through an autoclave, the proteins in the blood will be denatured. This means the molecular structure of the blood proteins change. This creates a soil on an instrument that is much harder to clean the next time. In essence the proteins are baked onto the instrument. It is essential that instruments are thoroughly cleaned every time they pass through the CSSD.

Surgical instruments have been used for millions of years. There are over 10 000 surgical instruments in use today. Many surgical procedures are performed using minimally invasive techniques these days. Minimally invasive techniques have led to the manufacture of complex, delicate, difficult to clean surgical instruments.



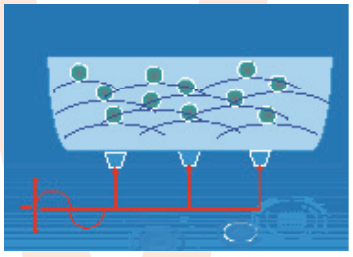
Simple Instruments

Complex Instruments

Debris and proteins left on surgical instruments or medical device can interfere with the device's function. Just as surgeons have adapted their surgical techniques, so we have to adapt our instrument cleaning techniques.

It is almost impossible to thoroughly clean complex medical devices manually. Ultrasonic cleaners, especially those with sonic irrigation are ideally suited for cleaning complex devices.

Ultrasonic cleaners are available as smaller table top units, large integrated basins, integrated into a washer/disinfector or as stand alone machines. The size of the cleaner will determine the type and number of instruments that it can process.



How does an ultrasonic cleaner work?
Waves of acoustic energy are created in the water in the cleaning chamber. This energy creates tiny vapour bubbles to form on the surfaces of the instruments in the washing chamber. The tiny bubbles collapse on themselves (cavitation), creating a suction, and scrubbing action on all surfaces. The suction scrubbing action occurs on all the hard-to-get-to surfaces on the instruments.

In the CDC (Centre for Disease Control) Guideline for Disinfection and Sterilization, reference is made to studies conducted comparing ultrasonic cleaning and manual cleaning. In one such study it was demonstrated that washing instruments in an ultrasonic cleaner for 3 minutes removed more than 99% of blood on instruments.

Features of Ultrasonic Cleaners
1. Sonic Irrigation
Some ultrasonic cleaners have a sonic irrigation feature which is of great benefit. Lumened instruments are connected to distal connectors, which are in turn connected to a manifold (as shown in the picture). In this way the instruments are cleaned externally and the lumens are flushed with Sonics' as well. This feature is especially beneficial when cleaning laparoscopic instruments and suctions.

There are a variety of models of ultrasonic cleaners available in South Africa. Some models must be manually filled with water and detergents, and manually emptied, which is time consuming.

2. Automatic Fill and Detergent Dispensing
The latest models of cleaners automatically fill with the correct amount of water; automatically dispense the correct amount of detergents, automatically rinse instruments and automatically empty, depending on the programme selected.
This is especially useful as ultrasonic cleaners must always be emptied, cleaned, dried and disinfected at the end of each day. The water and detergent solution in the washing chamber should also be changed regularly during the day depending on how often the washer is used. This is important as it is possible to contaminate surgical instruments with endotoxins (in the water, detergent solution). The endotoxins can in turn infect a patient causing a severe inflammatory response.

3. Open Lid – Cycle Abort
Ultrasonic cleaners must have a lid to contain aerosols. The lid should remain properly closed, during the cleaning cycle. Some cleaners will abort the cycle if the lid is opened and the cycle is interrupted. This is an excellent safety feature for the staff.

How to load an Ultrasonic Cleaner
Always read and follow the manufacturer's instructions. Rinse off gross debris from the instruments before placing them in the cleaner. Instruments should be placed in the basket and never directly on the floor of the chamber. Instruments should not touch the side walls of the chamber. Open and dismantle instruments as far possible. Instruments with box joints are the most difficult to clean and would benefit from ultrasonic cleaning. Don't overload the basket. The manufacturer can tell you what the load capacity is of the cleaner. Make sure all parts of the instruments are submersed in the cleaning solution. Don't mix brass and stainless steel instruments together. The brass instruments will tarnish the stainless steel instruments. When the cycle is complete, rinse the instruments and then follow the normal cleaning procedure.

Continued on pg.2

Daily and Weekly Checks
The manufacturer will recommend a variety of checks that need to be carried out, weekly and daily. Ultrasonic cleaners with irrigation normally have a disposable filter that needs to check, cleaned and replaced.
Disposable filter in the Medisafe SI Ultrasonic cleaners

Examples of checks that should be carried out:

Daily Checks	Weekly checks
Check, clean replace disposable filter	Repeat daily checks
Check, clean metal drain filter	Check water hoses
Wipe water level sensors	Check power cord
Check lids seal	Check lid seals
Clean external surfaces	Check cleaning efficiency using the foil test at the end of the day
Empty, dry disinfectant wash chamber at the end of the day	Empty, dry disinfectant wash chamber

Factors that will affect cleaning efficacy
The following factors inhibit the cleaning efficacy of an ultrasonic cleaner:
- Incorrect detergent
- Chunks of debris or soil
- Instruments touching side walls / floor of chamber
- Incorrect water temperature
- Incorrect basket
- Overloading
- If a degas cycle was not run

It is very important to run a degassing cycle with each fill of fresh water. The degas cycle should be run for 5-10 minutes. This removes the dissolved air in the water. Some of the latest models automatically perform the degas cycle which is another safety feature to ensure effective cleaning.
Ultrasonic cleaners play an important role in the decontamination process.

Finally a National CSSD Forum for South Africa

Denise Sheard has recently been nominated as the Chairperson of the National, CSSD Forum South Africa (CFSA).

Denise spoke about her plans for the National Forum at events held in Gauteng in May.

Denise had the following to say:

We have exciting times ahead. My vision for the SA forums going forward is that each regions retains it own unique identity but works together nationally, on Policies, Standards and Training. I have started discussions with the SATS Western Cape regarding the CSSD forum taking part in the 2013 SATS congress, to be held in Cape Town. I believe that SATS and the CSSD Forum South Africa, should work along side each other, retaining our autonomy, but sharing ideas and educating each other in our respective areas of expertise. We can do this by being represented on each others committees. We have 3 active CSSD forums in South Africa; I would like to grow this number of regional forums.

The Western Cape CSSD forum was established in July 2003. For the past 3 years Denise has been an expert consultant to the Western Cape CSSD Forum. In her position as expert consultant she spearheaded the process of writing SOP's and policies for the Forum, which are now available on the CFSA link of WFHSS website (www.wfhss.com). Denise is the newly elected chairperson of the Western Cape CSSD forum. The Western Cape forum is steered by a committee of representatives from the three private Healthcare groups, the large provincial hospitals and the trade. The committee meets once every second month to plan workshops and work on policies and standards. CSSD workshops are held every alternate month and last 2 - 3 hours. All categories of CSSD staff are encouraged to attend the workshops as this is an excellent learning opportunity. 34 workshops have been held over the years with staff from the following areas attending the workshops:
- SSD staff – operators, supervisors, management
- Infection Control nurses
- Unit Managers
- Theatre staff
- Hospital audit staff
- Community nurses
- Dental practice nurses
- State Vaccine
- Trade

The Pretoria CSSD forum was established in February 2004. Michelle Mutch was elected as the chairperson of this forum in 2012. The Pretoria forum holds a combined workshop and committee meeting four times a year. The Pretoria CSSD forum is currently reviewing and commenting on the SOP's written by the Western Cape CSSD Forum. Michelle has stated that she is very excited to have Denise as the National CSSD Forum Chairperson. "Denise is an expert in the field and I look forward to working with her" said Michelle.

KwaZulu Natal have had a CSSD Forum since January 2005, Adriaan Swanepoel is the chairperson.
There is an active forum in Limpopo that meets 4 times a year.

There is a big drive to re-establish a Johannesburg based CSSD forum. Discussions are being held with representatives from a variety of hospitals and the trade to get this forum off the ground. Elize Gouws has volunteered to chair the forum in the interim.

The Eastern Cape is also very keen to start a forum; Denise will look at assisting them later in the year.

Denise had the following to say during an interview with SteriView:
SV
You have worked as a nursing tutor for a number of years, when did you first become interested in CSSD?
Denise
I first developed an interest in Sterile Services when serving on the procurement committee of the hospital where I was working in the UK. It is critical that CSSD are consulted when purchasing new equipment, as they will know what can and cannot be safely decontaminated. They know what expertises are available as well as what equipment is available.

SV
How long have you been involved in training staff involved with CSSD?
Denise
SafMed have sponsored me to assist with providing CSSD training for the last 15 years. I ran the first Foundation Course (in its present format) at Mowbray Maternity Hospital in 2006. Since then I have run over 50 Foundation Courses in Southern Africa. I have also been involved with setting up the Stellenbosch Sterile Services Course with Professor Mehtar in 2007 and I have run more than 10 Basic Course's. SafMed have shown their commitment to training by bringing Xana Jardine on board to assist with the Foundation and Advanced Foundation courses.

SV
How do you keep your CSSD knowledge updated?
Denise
I represent South Africa at the World Forum for Hospital Sterile Services (WFHSS). They hold an International Congress every year, which I attend. I sit on a number of working committees. Last year the congress was held in Estoril Portugal. This year the congress will be held in Osaka Japan from the 21-24 November 2012. I maintain a South African CSSD Forum (CFSA) link on the WFHSS website (cfsa.wfhss.com), where I have posted the Western Cape SOP's and have information on the existing forums. I am also a member of the CSC (Central Sterilising Club) and attend their congress every year. This year the meeting is being held in Edinburgh. I also attend ISO committee meetings whenever I can as an observer.

South African Expert Co Authors a New CSSD Text Book

Denise, is sponsored by SafMed to run the Foundation and Advanced Foundation Sterile Services course, is an expert in the field of decontamination and sterilization. She also runs the Basic Course in Decontamination at Stellenbosch University with Professor Mehtar and is the Western Cape CSSD Forum Chairperson.

Denise Sheard and Dr Gerald McDonnell have joined forces and written a new text book entitled A Practical Guide to Decontamination in Healthcare.

Denise recently collaborated with, Dr. Gerald McDonnell, who serves as STERIS's Vice President of Research and European Affairs, and is a leading expert in the field of decontamination and sterilization and has published over 150 peer-reviewed articles, reviews, book chapters and books.

This text book is designed as a comprehensive training manual, providing practical guidance on all aspects of decontamination, including: microbiology and infection control; regulations and standards; containment, transportation, handling, cleaning, disinfection and sterilization of patient used devices; surgical instrumentation; endoscopes; and quality management systems.

A Practical Guide to Decontamination in Healthcare provides a guideline to decontamination and is written to be used in all countries as a basic primer but also providing a good level of detail on each step of the decontamination process. It also provides a lot of the background information from a surgical and reprocessing area point of view. The book will be available later this year and will be marketed worldwide by Wiley Publishing. Commenting on the book, Dr. McDonnell said, "Working in the healthcare industry we all know that prevention is the first line of defence in the fight against infection. Decontamination is an important part of this fight in any healthcare facility.

The goal of this text book is to better equip healthcare professionals with the information they need to meet the technical and operational challenges of medical decontamination.

The Western Cape CSSD Forum has compiled the following Standard Operating Procedures (SOP) for validating an ultrasonic cleaner.

STERILE SERVICE DEPARTMENT
Title
Validating an Ultrasonic Cleaner

Date of preparation
1 September 2011

Review date (Usually 1 year later unless a change occurs)
1 September 2012

Prepared by
Cape Town CSSD Forum

Area of application
Areas with Ultrasonic Cleaners

Staff involved
Only staff trained in the use of the equipment

Objective/Purpose
To ensure that the ultrasonic cleaner is working efficiently and is able to perform the assigned task

Relevant/Related Documents
Procedure Manual
Standard Precautions
Equipment guidelines

Equipment/Supplies
Personal Protective Equipment

Procedure
There is a simple test for checking the performance of your ultrasonic cleaner:

Aluminium foil test
Use the prescribed roll of aluminium foil or cut three small pieces of aluminium foil about 10cm x 20cm each.

- Fold each piece over a rod or length of string which will allow the foil to be suspended in the tank
- Making sure that the tank is filled to the fill line; immerse the foil strips into fresh cleaning solution
- Suspend the first strip in the centre of the tank and the other two a couple of inches from each end of the tank
- Make sure that the tank is filled to the fill line, and turn the machine on.
- Remove the foil and inspect: All three pieces of aluminium foil should be perforated and wrinkled to about the same degree

After performing the foil test, drain tank, wipe clean and refill with fresh potable water as foil debris may 'contaminate' instruments.

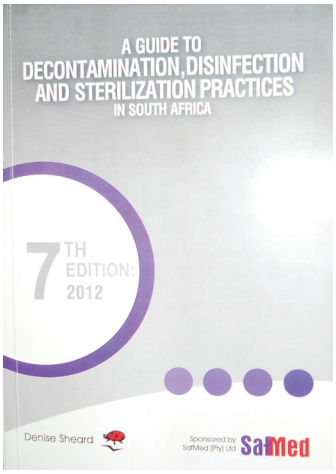
Ask Saffi Competition

Saffi is SafMed's in house training specialist, and she has been launched to provide additional assistance to CSSD staff. Saffi can be contacted via an e-mail service (or by fax) operated by SafMed's expert staff that has over 25 years of experience in CSSD. Queries and questions for Saffi can be sent to asksaffi@safmed.co.za or faxed to (011) 507 5550

Two lucky readers of SteriView stand a chance to win a copy of A Guide to Decontamination, Disinfection and Sterilization Practices in South Africa 7th Edition by answering this simple question:

Who is Saffi?

Email or fax your answer to Saffi. Don't forget to include your name, your hospital and your contact details.



Foundation Course in Decontamination and Sterilization

The SafMed Foundation and Advanced Foundation Courses in Sterilization and Decontamination is a brief orientation to all aspects of the CSSD. As part of SafMed's contribution to the community, this course is offered free of charge to anyone that works in the sterile services environment where infection control and specifically decontamination is paramount.

The Foundation Course is a 5-hour workshop with a short 30-minute competency exam at the end. In order to be issued with a SafMed certificate, students must attain at least 80%.

The Advanced Foundation Course is run over 2 days and has a practical component on risk assessment, and is aimed specifically at mangers and supervisors

Contact Information

In order to attend these courses an application form must be submitted. These can be obtained from

Charmaine Fraser
021 763 3280
Email:Charmaine@safmed.co.za

Nandi Maake
011 201 4300
Email: nandi@safmed.co.za

COURSES IN DECONTAMINATION AND STERILIZATION 2012

Course	Venue	Date
Foundation Course in Sterilization and Decontamination	Durban	9 Feb
Foundation Course in Sterilization and Decontamination	PE (NTA)	23 Feb
Foundation Course in Sterilization and Decontamination	Johannesburg	28 Feb
Foundation Course in Sterilization and Decontamination	Lesotho	6 March
Foundation Course in Sterilization and Decontamination	Kimberly	27 March
Adv. Foundation Course in Sterilization and Decontamination	Durban	TBC
Foundation Course in Sterilization and Decontamination	Cape Town	TBC
Foundation Course in Sterilization and Decontamination	George / Mossel Bay	TBC
Foundation Course in Sterilization and Decontamination (NTA)	Johannesburg	21 May
Foundation Course in Sterilization and Decontamination (GICS)	Johannesburg	23 May
Foundation Course in Sterilization and Decontamination	Pretoria	TBC May
Foundation Course in Sterilization and Decontamination	Rustenburg	5 June
Foundation Course in Sterilization and Decontamination	Johannesburg	19 June
Foundation Course in Sterilization and Decontamination	Klerksdorp	23 July
Foundation Course in Sterilization and Decontamination	Limpopo	6 Sept
Foundation Course in Sterilization and Decontamination	Johannesburg	Sept TBC
Adv. Foundation Course in Sterilization and Decontamination	Bloemfontein	Sept TBC
Adv. Foundation Course in Sterilization and Decontamination	Johannesburg	11, 12 Oct

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