



# Promoting Excellence In Ultrasound

## **Policies and Statements**

# **B2**

### Guidelines For Disinfection Of Intracavitary Transducers

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*May 1996, Reaffirmed September 1999, Revised July 2005, September 2007*

Every patient must be regarded as a potential source of infection and appropriate precautions should be taken to prevent cross-infection between patient and operator. These are known as “Universal Precautions” and are promoted throughout all health care institutions. Particularly important is the washing of hands both before and after direct patient contact<sup>1</sup>. Other precautions will include use of personal protective equipment (PPE) where appropriate and correct handling and disposal of waste and maintenance of a clean working environment.

Potential sources of infection associated with vaginal ultrasound scanning include those organisms transmitted by blood and genital secretions such as HIV, HBV, HCV, Cytomegalovirus, Neisseria gonorrhoea, Chlamydia trachomatis, Trichomonas vaginalis<sup>1</sup> and Human Papilloma Virus. It should be remembered that some organisms, including some viruses, can remain infectious for days outside the body, particularly if kept moist in blood or serum.

All sterilisation/disinfection represents a statistical reduction in the number of microbes present on a surface. Meticulous cleaning of the instrument is the essential key to an initial reduction of the microbial/organic load by at least 99%<sup>2</sup>.

The following protocol is recommended for the cleaning and preparing of intracavitary transducers between patients. These will include transvaginal, transrectal, transoesophageal and endoscopic transducers. The principles are the same for any transducers that may come into contact with body secretions.

#### 1. **CLEANING**

After removing the cover from the transducer, all gel and any extraneous material should be removed from the transducer preferably under running water. Gel used can be a potential source of infection. For some procedures the use of sterile gel should be considered. The transducer should then be cleaned with soap and water (dishwashing liquid may be used), rinsed thoroughly and dried with a paper towel.

#### 2. **DISINFECTION**

The cleaning of the transducer is the main disinfection process. However, high-level disinfection with a chemical agent is necessary for further statistical reduction in the number of infective agents on the transducer, particularly because of possible rupture of the transducer cover. A high-level instrument grade disinfectant should be used for this purpose. It is recommended that the manufacturer of your ultrasound equipment be consulted before using a specific chemical agent on a transducer.

Currently the only available high-level instrument grade disinfectant is glutaraldehyde, which requires special facilities for safe handling. Where the use of glutaraldehyde is precluded, and other high-level instrument grade disinfectants are not available, Hypochlorite solution or Ortho-phthalaldehyde solution might be used.

#### Recommendations for the use of Disinfectants:

- a) *2% Glutaraldehyde.* Soak the transducer in the glutaraldehyde for twenty minutes followed by rinsing under running tap water then drying.  
*Note:* Buffered glutaraldehyde as a cold disinfectant has a broad spectrum of activity with rapid microbiocidal action. It is non-corrosive to most materials, including metals and rubber. "Aidal Plus" is a satisfactory glutaraldehyde preparation and is available from Whiteley Industries Pty Ltd, PO Box 785, Rosebery, NSW 2018 (Ph: 61 2 9700 9799). Because of potential irritant effects of glutaraldehyde extreme care must be taken with its use, and manufacturers' instructions on usage should be followed strictly. Spent glutaraldehyde solutions disposed of to the sewer should be flushed with copious amounts of water<sup>3</sup>.
- b) *Sodium hypochlorite diluted to 500 ppm.* Soak the transducer in the sodium hypochlorite for two minutes followed by rinsing under running tap water and drying.  
*Note:* Hypochlorite solution requires changing daily as it deteriorates rapidly. It can be made up with 50 ml of "Milton" solution (1% sodium hypochlorite) in one litre of tap water. Hypochlorites have bactericidal, fungicidal and virucidal activity. Their decomposition is accelerated by the presence of metals, sunlight and heat. Some water supplies, particularly in remote areas, may contain oxidisable (e.g. organic) materials that could reduce the amount of free chlorine available. If the quality of the water supply is uncertain the free chlorine should be measured with a high range test kit such as those manufactured by Hach, Lovibond or Palm, or deionised water should be used.
- c) *Ortho-phthalaldehyde 0.55%.* Soak the transducer in the solution for a minimum of ten minutes at twenty degrees Celsius (20° C), or higher, followed by rinsing under running tap water then drying. Ortho-phthalaldehyde has a broad spectrum of activity with rapid microbiocidal effects, with the exception of some bacterial endospores; it is non-corrosive to most materials including metals and rubber. Cidex OPA is a satisfactory preparation available from Johnson and Johnson Medical Pty Limited, 1-5 Khartoum Road, North Ryde NSW 2113, Australia. Usual precautions must be taken with its use with regard to protection from irritant effects. Regular testing needs to be performed to ensure a minimal effective concentration with the use of test strips. Spent solutions disposed of to the sewer should be flushed with copious amounts of water.

Other products may be used to disinfect intracavity transducers provided that they have TGA approval.

### **3. TRANSDUCER COVERS**

The transducer should be covered before intracavitary insertion with an appropriate barrier where thickness is at least 38 microns. This may include plastic surgical drapes, other purpose specific probe covers or surgical gloves. Prior to the use of a transducer cover, specific enquiry should be directed towards latex sensitivity. Covering the transducer without prior cleaning and disinfecting is inadequate because there is an incidence of perforation of any transducer cover.

### **4. APPROPRIATE TECHNIQUE**

The operator must wear a disposable (non-sterile) glove on the hand used during passage of the transducer. Care must be taken to ensure that contaminated gloves do not contact the ultrasound machine's control panel or exposed transducer cable. The transducer cover

should be removed and disposed of carefully to prevent contamination of surroundings by bodily fluids/secretions. At the completion of the procedure, gloves should be removed and hands washed thoroughly with soap and water.

### **IMPORTANT NOTE**

*Compliance with the National Guidelines on Disinfecting and Sterilising Pre-useable Medical and Surgical Instruments – Australian Standard (AS) 4187 – is recommended. The ASUM guidelines should be read in conjunction with that Standard, which is available from Standards Australia.*

*Infection control guidelines will only be useful if they are followed and form part of an overall approach to Universal Precautions in minimising infection risk. The ASUM guidelines are provided as a mechanism to assist you in the development of appropriate risk management compliance processes.*

*The use of sodium hypochlorite is not recognised by the NHMRC.*

### **References**

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