Instrument Cleanliness

[illegible] Sterili[illegible]tion M[illegible]ets The Music Industry: The Extreme [illegible]

By Ke[illegible]

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The overuse of antibiotics to fight the common cold has created new strains of antibiotic resistant bacteria. Physicians are now cutting back on the use of antibiotics for bacterial colds and the flu unless there is a need to help combat a virus.

Germ Phobia Gone Too Far

Let's look at a scenario that takes one form of germ phobia too the extreme.

Imagine you are afraid of cross contamination of fluids such as saliva. To combat this, one step is to begin carrying around your own place setting for every meal you ever eat. You go to the restaurant and order your meal and have it served on the plate you brought and eat with your own silverware. You even have your own glass. But you also need to use this same setting at your company picnics, Thanksgiving dinner at the relatives and even at your own home.

The Life Of A Virus

Most viruses cannot live on hard surfaces for a prolonged period of time. Some die simply with exposure to air. It has been proven that the HIV virus cannot live on a toilet seat and be passed on to another person. They may be unsanitary but once cleaned pose no threat to health.

However, certain groups are quite hardy. There are some chemically resistant organisms such as Clostridium difficile (C-difficile), multidrug-resistant organisms (MDROs) such as methicillin-resistant Staphylococcus aureus (MRSA) and vancomycin-resistant Enterococcus (VRE). Another group of great concern are extended-spectrum beta-lactamases or ESBL. Studies have shown that surfaces of nearly any kind are a possible breeding pool for such infectious organisms, with some organisms capable of prolonged survival, especially VRE.

How Does This Relate To The Music Industry?

Sharing instruments or even just the mouthpiece can subject a person to germs if the time span is short between uses. Anything inside the instrument is more than likely to be fungal rather than viral. Let’s look back at the diner with a travel place setting. It is safe to say that washing in hot water and a detergent will clean things good enough to eat off of them. Clean the floor and it could be “good enough to eat off of” as the saying goes. The same can be said for musical instruments. To clean them, making them antiseptically clean should suffice.

The mouth is not considered a sterile environment. This means that anything that comes in contact with the mucus membrane need not be sterile. Unless there is oral surgery being performed and an open pathway to the bloodstream has been created, anything placed in the mouth need only be antiseptically clean.

Sterilization Defined

The definition for Sterile as suggested by surgical instrument manufacturers, followed by the Association of Operating Room Nurses (AORN) and regulated by Joint Commission (the hospital licensing and governing body) is the absence of all forms of microbial life; The complete destruction or removal of all living microorganisms (sporing and non-sporing bacteria, viruses, fungi and protozoa). It is either sterile or it is not. There is no gray area.

There are many ways to achieve this. The most accepted way is to introduce the item to high temperature steam at 270 - 272 degrees Fahrenheit for a specified time period. Every product or material requires a different exposure time. Flash sterilization is a similar process but the exposure times are less. This will not always guarantee sterility and is only acceptable to use on certain operating room equipment in extreme cases.

Another method used to sterilize instruments is to subject them to a gas, usually Ethylene Oxide (EO). In use for several decades in the dental field, this method is now being phased out of regular use. OSHA highly regulates this process and it is now only used as a last resort on materials that would not hold up to steam. Ethylene Oxide (EO) is a known carcinogen. It can be harmful and sometimes fatal if not completely removed from all surfaces. This is in part why it is no longer being used in the dentistry field.

Is Sterilizing Alone All You Need To Do?

According to the "2006 Standards, Recommended Practices and Guidelines" (pg 632), Proper decontamination is essential in removing bioburden and preparing an item for sterilization by any method. Cleaning is the first step in decontamination. And (pg 633) Items should be clean and dry before being packaged for EO sterilization. Soil inhibits sterilization, and moisture may produce toxic byproducts (such as ethylene glycol).

Certain items like wood for example should never be steam sterilized. Lignin is brought out of the wood and can cause tissue irritation. Many other materials such as plastic and rubber mouthpieces, lacquered surfaces or leather pads would not hold up when subjected to steam or radiation. The question then is do we need to sterilize?

Disinfection Defined

Disinfection is the removal or destruction of harmful microorganisms, not usually including bacterial spores. This is a process that involves water below 100 degrees Celsius. Keep in mind that total sterility is a fleeting moment. Once a sterile instrument has been handled or exposed to room air it is no

longer considered to be sterile. It will however remain antiseptically clean until being used.

Children are the primary users of school owned and rented musical equipment and they (as a category) are more susceptible to infections, as are pregnant women, the elderly, and anyone whose immune system has been compromised. While one would assume that any musical instrument once thoroughly disinfected with soap and warm water and made antiseptically clean would be sufficient, we should not discount the concept of sterilizing them.

What If You Still Want It Sterilized?

MaestroMD offers a sterilization process for musical instruments. I met with Kenneth Owens, President and CEO and discussed the product his company has to offer. They sell a service to sterilize wind instruments and guarantee sterility. They do not handle any of the preparatory work.

They rely on the consumer to supply them with a cleaned instrument and send out guidelines to aid in preparation. I would submit that the average consumer would not have the tooling or the skills to do the necessary work. Anything less than a thorough cleaning will not prepare the instrument properly.

MaestroMD makes claims that they can completely sterilize a wind instrument even with dirt still in the instrument. You essentially end up with sterilized dirt. To meet surgical room standards of sterility the instruments would need to be completely disassembled and cleaned, then sterilized, and then reassembled to assure the highest guarantee.

What Is Necessary For The Instrument?

To prolong the life of a musical instrument you must have the acids neutralized and the deposits cleaned out. Sterilization does not take the place of cleaning. The deposits will still be there: Like the dirt in the leadpipe that will soon be blown into the valve casings and stop a valve from working, the staining on pistons that will soon cause the valve action to falter, or the scale build up that causes slides to stick and rotors to stop working. Even the buildup on a tone hole that once activated with moisture will again cause that pad to stick.

If the cleaning process is thorough, it is acceptable to make musical instruments antiseptically clean. Just as with the utensils you eat with, soap and water can clean off anything harmful. When you have a cold you are told to wash your hands frequently to prevent the spread of the cold germs.

Antibacterial soaps will kill certain germs but all soaps will carry away the germs that stick to dirt and oils while they clean. No germs/ no threat.

What do you tell a parent that wants to have her trumpet sterilized because her child had mono? Tell them to do the same thing that they did with their silverware, clean it. If it is important to a parent or a school administration to have it sterilized then by all means have it done. The price for that added, but fleeting, peace of mind ranges from $49.99 to over $300 per instrument.

Consider The Liability

By making claims that an item, even just a mouthpiece, is sterile you assume a heavy liability. Sanitization is a broad term and carries little liability. If you claim to have sterilized something you could be held liable if something is contracted because of it not being sterile. You should avoid making claims of an item being sterile. Leave that to the experts.

Information Is Vital

It is important to use common sense when deciding what is clean or how clean it needs to be. Make certain your shop is cleaning instruments as thoroughly as possible for consumer safety.

Take some time to investigate products, gather the facts and share them with your customers. Educate your customers to the importance of routine cleaning at home in addition to the yearly cleaning that should be performed by a technician.

Talk to your customers about the hazards of sharing instruments with their friends. If they must share instruments then they should have separate mouthpieces to minimize the risk. Take precautions and understand the realities of being a living organism.

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