Infection Control & Dental Impression Guns (12/11)

Westergard, EJ, Romito, LM, Kowolik, MJ, Palenik, CJ. Controlling Bacterial Contamination of Dental Impression Guns. J Am Dent Assoc 2011;142:1269–1274.

This study attempts to quantify bacterial contamination, including methicillin-resistant *Staphylococcus aureus* (MRSA) on dental impression material handgun cartridge dispensers used in an academic setting following five different infection-control and prevention protocols (routine clinical use; disinfection; steam sterilization; steam sterilization followed by use of plastic covers; and steam sterilization followed by use of plastic covers and disinfection). Each of four commercially-available impression guns was repeatedly sampled on four sites: button, handle, latch, and trigger. Routine clinical use produced heavy contamination including MRSA. Disinfection produced a 6% decrease in bacterial counts. The use of steam sterilization achieved sterility without harming the impression guns. Use of steam-sterilized guns with plastic covers decreased bacterial isolates by approximately 60%. Use of steam-sterilized guns with covers followed by disinfection resulted in a 95% reduction in contamination. Use of common infection-control and prevention methods appears to reduce the bacterial counts, including MRSA. Bacterial contamination was lowest after steam sterilization, followed by the use of plastic gun covers and disinfection. **Use of contaminated impression guns on successive patients could increase the risk for cross-transmission of disease. The use of sterilization, plus plastic impression gun covers and disinfection, for impression guns after each use could be an effective and practical infection-control method for dental practices.**

DECS Comment: According to the Centers for Disease Control and Prevention (CDC) heat-tolerant laboratory items used in the mouth should be heat-sterilized before being used on another patient. Items that do not normally contact the patient, prosthetic device, or appliance but frequently become contaminated and cannot withstand heat-sterilization should be cleaned and disinfected between patients and according to the manufacturer's instructions. Dental impression material dispensing guns are readily contaminated during clinical use. Although dental impression material dispensing guns do not typically enter the patient's mouth, they are handled repeatedly by gloved hands (which enter the patient's mouth) and become readily contaminated and therefore require cleaning and disinfection between patients at a minimum. The impression material gun tips, which can contact non-intact skin and mucous membranes, are single-use, disposable items. Therefore, cleaning and disinfecting the impression gun between patients is essential; however, it is difficult to do because of the many grooves, crevices and parts. Using barrier covers may be helpful in reducing contamination and is supported by the CDC *Guidelines for Infection Control in Dental Health-Care Settings—2003*. In the present study there wasn't any visible or functional damage to the impression material guns as a result of disinfection and steam sterilization; however the authors do state that the sample size was small and the study period was only limited to three weeks. Additional studies are needed to determine the long-term effect of autoclaving on other types of impression guns in terms of functionality and durability. If the impression material cartridge dispensing gun is heat tolerant, individuals should consider heat sterilizing the dispensing gun in addition to use of barriers and cleaning and disinfection after each patient to provide optimal patient safety.