

Exercising infection control in unorthodox and unconventional field settings

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Abstract – Dental camps are conducted as a part of public oral health care delivery. Dental camps are organized to create awareness in the public so that the dental disease can be treated and prevented. The availability and versatility of portable dental equipment make possible the delivery of dental treatment in wide variety of nontraditional settings. Lack of Infection Control in these settings can be life-threatening for the both the patient and dental professional and requires more effort than treating dental caries or periodontal disease.

Keywords – Dental Camps, Sterilization, Unconventional dental settings

Commentary

The dental public health field has been expanding in scope & complexity with more emphasis being placed on the total dental care delivery system and its impact on oral health status.

Dentistry is predominantly a field of surgery, involving exposure to blood and other potentially infectious materials, and therefore, requires a high standard of infection control and safety practice in controlling cross contamination and occupational exposures to bloodborne diseases.¹ Apart from bloodborne diseases such as Hepatitis B infection and HIV infections, the dental health care workers are potentially at risk of acquiring respiratory diseases, childhood diseases, sexually transmitted diseases-commonly encountered in dentistry.² Disease transfer to the dentist and dental staff during dental care in dental camps or clinical settings is considered an occupational exposure to a given pathogen, while disease transfer from one patient to another is considered cross-infection.

In India, dental camps are conducted as a part of public oral health care delivery. Dental camps are organized to create awareness in the

public so that the dental disease can be treated and prevented. The public, in these health settings, is educated and motivated to cultivate good oral habits and discourage bad habits, which are harmful to oral and paraoral structures. Dental camps are helpful in providing dental health care to the poor, needy and rural population.

The availability and versatility of portable dental equipment make possible the delivery of dental treatment in a wide variety of nontraditional settings. Dental camps are mostly conducted in villages, rural areas, the outskirts

of urban areas; places away from dental clinic setting, so the question of infection control is of paramount importance in this environment in which dentistry will be delivered. Lack of infection control in these settings can be life-threatening for both the patient and the dental professional and requires more efforts than treating dental caries or periodontal disease.

Dental instruments in camp settings are sterilized in most of the places by boiling due to the unavailability of autoclaves or transportation limitation at the settings. Boiling instruments is an accepted, time tested technique among field medics, but it's far from acceptable as anything other than a no other options type solution. Partial sterilization is achieved by boiling for an hour, but there are many more microbes that will not be killed. This might be an acceptable way to clean instruments that have been used on either no one or only on one individual, but this is definitely not an acceptable way to clean instruments that have come in contact with a variety of people.

The use of pressure cooker can be an alternative for sterilization of dental instruments in camp settings instead of boiling. Pressure cookers are used for the sterilization of steel instruments or other not heat sensitive items. Do not try to sterilize latex items or liquids. The sterilization of cloth drapes, etc. is not practical in a pressure cooker due to the lack of a drying cycle. Pressure cookers reach a temperature of 250° F or 121° C at a pressure of 15 pounds and requires 30 minutes for the process to be effective. A pressure cooker of sufficient size should be used to hold the instruments.

Unlike the autoclave, a pressure cooker does not have a drying cycle. To package instruments for later use after sterilization, they must be dry before they can be safely handled without contaminating them. Pressure

cookers are used to emulate an autoclave, but pressure cookers are not really designed for the precision operation that is required, and their effectiveness cannot be guaranteed.

Disinfection of items that cannot withstand sterilization can be disinfected with antimicrobial chemicals. The disinfectants used in dental camps should be tested and approved by the appropriate governmental agency, eg. Environmental Protection Agency. Cleaning should precede all disinfection and sterilization processes; it should involve removal of debris as well as organic and inorganic contamination. Removal of debris and contamination is achieved either by scrubbing with a surfactant, detergent, and water, or by an automated process (e.g., ultrasonic cleaner or washer-disinfector) using chemical agents. If visible debris, whether inorganic or organic matter, is not removed, it will interfere with microbial inactivation and can compromise the disinfection or sterilization process. After cleaning, instruments should be rinsed with water to remove chemical or detergent residue. Splashing should be minimized during cleaning and rinsing. Before final disinfection or sterilization, instruments should be handled as though contaminated.³

The mobile dental unit (MDU) used for dental camps is of great help in rendering care to the needy. On the other hand, in the closed operatory of the MDU, with the limited space and ventilation, there is an increased risk for acquiring infections during treatment. Dental personnel who are working in the MDU are found to be more prone to cross-infections, because of the limited dimensions of the MDU and the poor ventilation. Hence, utmost care has to be taken to prevent the cross-contamination.⁴

As suggested by infection control guidelines, it is essential that all dental personnel wear a mouth mask, head cap, gloves, lateral protective shield, and eye glasses and follow all aseptic precautions.⁵ Before the start of any dental operative procedure, a preprocedural mouth rinsing with an antiseptic mouthwash is advisable; it significantly reduces the airborne microorganisms in the MDU. It is suggested to fumigate the MDU at least once in every month.

Although most principles of dental infection control and safety were formulated in the 1960s, this field only gained importance over the past two decades due to the AIDS Epidemic in the Americas and Europe.² Currently, adequate control of communicable diseases has been achieved in the developed countries through education, public health measures, and regulations as related to the practice of dental infection control & safety.^{3,6}

The level of Infection Control in India is still in its infancy and many years behind that of the developed countries. Formal programs in Infection Control and Safety must be developed not only for the Indian sub-continent and implemented within the next couple of years. Lack of Infection Control in nontraditional settings can be life-threatening for both the patient and the dental professional and requires more efforts than treating dental caries or periodontal disease.

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Vitae

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