
FIRST AID TRAINING EQUIPMENT

Recommendations are (summarized) from the Canadian Heart and Stroke Foundation Guidelines - <http://profed.heartandstroke.ca/Page.Asp?PageID=122&ContentID=768>

Recently, we have received inquiries concerning the possible role of first aid training equipment (mannequins/pocket masks etc) in transmitting various upper and lower respiratory infections (influenza, infectious mononucleosis, tuberculosis, etc.). The effective use of training equipment such as CPR mannequins and pocket masks are mandatory components of the Occupational First Aid Training courses. Since practicing with a pocket mask and a mannequin is an integral part of First Aid and CPR training, the care and maintenance of the mannequins, pocket masks and other training equipment is of utmost importance.

To our knowledge, the use of first aid training equipment has never been documented as being responsible for an outbreak or even an isolated case of bacterial, fungal, or viral disease. We are aware however, that some of the training equipment surfaces, particularly mannequins and pocket masks may present a risk of disease transmission if care is not exercised before, during and after any training. Stringent decontamination of all training equipment surfaces that could pose a risk must be conducted after every class. Agencies should thoroughly examine the manufacturers' recommendations for the use and care of training equipment and the provisions for sanitary practices. Additionally, the valve mechanisms in the pocket mask and the lungs in a mannequin airway invariably become contaminated during use, and if they are not appropriately dismantled, cleaned and/or changed after every class, they may serve as contamination sources for subsequent classes.

Training agencies must rely heavily on manufacturer's recommendations for mannequin and pocket mask use and maintenance and must be followed during decontamination procedures. These recommendations should be examined carefully before purchasing mannequins, pocket masks and other training equipment.

RECOMMENDATIONS

1. Agencies should thoroughly examine the manufacturers' recommendations and provisions for sanitary practices when purchases of first aid training equipment are being considered.
2. Students should be told in advance that the training sessions will involve "close physical contact" with their fellow students and training equipment.
3. Students should not actively participate in training sessions (hands-on training) if they have dermatological lesions (open wounds) on hands or mouth, if they have upper or lower respiratory tract infections or if the student has reason to believe that he or she has been exposed to, or is in the active stage of an infectious process. This includes any possible symptoms of a Flu Virus or common cold.

FIRST AID TRAINING EQUIPMENT

4. If more than one mannequin is used in a particular training class, students should preferably be assigned in pairs, with each pair having contact with only one mannequin. This would lessen the possible contamination of several mannequins by one individual and therefore limit possible exposures or other class members.
5. All persons responsible for first aid training should be thoroughly familiar with hygienic concepts (e.g., thorough hand washing and use PPE prior to equipment contact, not eating during class to avoid contamination of equipment with food particles, etc.) as well as the procedures for cleaning and maintaining mannequins and pocket masks. Mannequins and pocket masks should be inspected routinely for signs of physical deterioration, such as cracks or tears in plastic surfaces, which make thorough cleaning difficult or impossible. The clothes and hair of mannequins should be washed periodically (e.g., monthly) or whenever visibly soiled.
6. During the training of two-rescuer CPR, there is no opportunity to disinfect the mannequin between students when the “switching procedure” is practiced. In order to limit the potential for disease transmission during this exercise, the second student taking over ventilation on the mannequin must ventilate with their own pocket mask that has a one way valve and cellulose filter or use a BVM. This recommendation is consistent with current training recommendations of the American Red Cross and the American Heart Association.
7. Training of the “obstructed airway procedure” involves the student using his or her gloved hand to finger sweep foreign matter out of a mannequin’s mouth. This action could contaminate the student’s finger with exhaled moisture and saliva from previous students in the same class and/or contaminate the mannequin with material from the student’s finger. When practicing this procedure, the finger sweep should either be simulated or done on a mannequin whose airway was decontaminated after the procedure.
8. At the end of each class, the procedures listed below should be followed as soon as possible to avoid drying of contamination on mannequin surfaces:
 - a. Disassemble the mannequin, pocket mask and any other potentially contaminated training equipment as directed by manufacturer;
 - b. As indicated, thoroughly wash all external and internal surfaces and reusable components with warm soapy water and brushes;
 - c. Rinse all surfaces with fresh water;
 - d. Wet all surfaces with a sodium hypochlorite solution having at least 550 ppm free available chlorine (60ml or 1/4 cup liquid household bleach per 4 litres tap water for 10 minutes). This solution must be made fresh at each class and discarded after each use;
 - e. Rinse with fresh water and immediately dry all external and internal surfaces, this drying will prevent the survival and growth of bacterial or fungal pathogens.

FIRST AID TRAINING EQUIPMENT

9. Between students or after the instructor demonstrates a procedure such as clearing any obstruction from the airway, the mannequin face and inside the mouth should be wiped vigorously with clean absorbent material (e.g. 4" x 4" gauze pad) wet with either the hypochlorite solution described in recommendation #8 above or with 7% alcohol (isopropanol or ethanol). The surfaces should remain wet for at least 30 seconds before they are wiped dry with a second piece of clean absorbent material. We are somewhat reluctant to recommend use of alcohols in this instance and to do so only as an alternative, since some persons find the odor of sodium hypochlorite objectionable. Although highly bactericidal, alcohols are not considered primarily as an aid in mechanical cleaning; also, in a short contact period alcohols may not be effective against bacteria or other pathogens. Nonetheless, in the context of vigorous cleaning with alcohol and absorbent material, little viable microbial contamination of any kind is likely after the cleaning procedure. Caution must be exercised when cleaning equipment using alcohol as it is flammable and the MSDS must be immediately available and posted near where those products are used.

10. People responsible for the use and maintenance of mannequins and pocket masks should be encouraged not to rely totally on the mere presence of a disinfectant to protect them and their students from cross-infection during training programs. Emphasis should be placed on the necessity of thorough physical cleaning (scrubbing, wiping) as the first step in an effective decontamination protocol. Microbial contamination is easily removed from smooth, non-porous surfaces by using disposable cleaning cloths moistened with a detergent solution, and there is no evidence that a soaking procedure alone in any liquid is as effective as the same procedure accompanied by a vigorous scrubbing.

11. With specific regard to recent concerns about potential for all forms of influenza, hepatitis B and AIDS transmission in first aid and CPR training, it has recently been shown that the hepatitis B virus is not as resistant to disinfectant chemicals as it was once thought to be. Current recommendations for strategies dealing with influenza, AIDS contamination are the same as those for viral hepatitis B.

HSFC BLS Instructor Manual 2001, HSFS BLS Instructor Manual, 1996