Decontamination of Healthcare Equipment
Prior to Servicing, Repair, Investigation, or Inspection

2009
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Introduction:

Anyone who inspects, services, repairs or transports medical, dental or laboratory equipment, either on hospital premises or elsewhere, has a right to expect that medical devices and other equipment have been appropriately treated so as to remove or minimize the risk of infection or other hazards; appropriate documentation must be provided to indicate the contamination status of the item.

Policy Statement:

The aim of this policy is to propose a safe system of work for all healthcare equipment that comes into contact with patients or their body fluids or pathological specimens. It covers healthcare equipment most likely to be at risk of contamination and applies to the following circumstances:

- Returned to or attended on site by the manufacturer or the Biomedical Engineering Department for service or repair.
- The subject of a defect investigation.
- Pneumatic tube system spill

Returning surgical instruments and equipment for maintenance or repair:

A. Surgical instruments:

Surgical instruments which require maintenance or repair work by manufacturers or biomedical engineers must be decontaminated (cleaned and sterilized or disinfected where appropriate) by Central Sterile Services Department (CSSD).

B. Surgical equipment:

- Surgical equipment which require maintenance or repair work by manufacturers or biomedical engineers must be decontaminated (cleaned and sterilized or disinfected where appropriate) by Central Sterile Services Department (CSSD).
- Before returning equipment for reprocessing all associated disposable items should be discarded.
- All reservoirs should be emptied into a sluice hopper or alternative.
- Sharp items, e.g. needles, scalpel blades, must be removed from packs and disposed of in a sharps box.
- Equipment, e.g. theatre packs, bowls, that has been used on a patient with a known or suspected infection, e.g. Hepatitis B, C and HIV, must be placed in an autoclavable BIOHAZARD bag prior to being returned to CSSD.
- For larger pieces of equipment being returned should clean all accessible surfaces as above and inform the biomedical staff of the potential risks. A declaration of decontamination form (figure 1) should be completed and attached.
- Protective clothing should be worn when decontaminating equipment.

Handling of Surgical Instruments on Loan from Other Organizations:

In the event of use of loaned surgical instruments, these devices will require thorough and appropriate decontamination processes.
Time should be allowed in order that effective decontamination can be carried out prior to and after use.

Instruments should be decontaminated in accordance with the manufacturer's recommendations and in CSSD.

Protective clothing should be worn when decontaminating the instruments.

Loaned instrumentation must be accompanied by a list of contents and relevant reprocessing instructions. If either the list of contents is missing or the CSSD cannot perform the sterilization process required, the instruments must not be used.

Following use and prior to return to the organization, from which the item was loaned, decontaminate as per the manufacturer's recommendations and instrument trays and equipment used on patient must be recorded.

Returning equipment other than surgical instruments for maintenance or repair, eg pumps, suction machines, beds, mattresses etc

- Equipment should be decontaminated prior to repair, service or inspection. Protective clothing should be worn when decontaminating equipment.
- All equipment should be cleaned with detergent and water between use and prior to return.
- Disinfectants should be used where there is contamination with blood or body fluids, or if the equipment has been used on patients with specific infections (in accordance with the manufacturer's instructions).
- Prior to equipment being moved to another department, declaration of decontamination form (figure 1) should then be completed and attached.
- A manufacturer of a reusable medical device or accessory should supply information on how to clean and maintain the device. This information should include the types of decontamination agents that may be used to clean, disinfect or sterilize, and a warning of any compounds or processes which may be detrimental to the device.
- The method of cleaning/decontamination used must be appropriate to the level of contamination of the item, gives acceptable decontamination, and does not damage the article or any of its components.
- A change of decontamination agent or process, without seeking advice, may result in damage and/or inadequate decontamination.
- Equipment which can be autoclaved should be dismantled and sent to CSSD. It may be necessary to use a water soluble bag for transportation.
- For equipment which cannot be decontaminated without dismantling by the engineer, advice should be sought from the Biomedical Engineering Department and the equipment should be cleaned and then sealed in a clear plastic bag and should have an infection risk sticker attached.
- All equipment must be packed and dispatched with a declaration of contamination status.

Faulty equipment

In particular situations, for example when the condition of an item which is the subject of complaint or investigation may be altered or influenced by a decontamination process, (decontamination may prevent a full investigation) the investigator may wish the item not to be
decontaminated. In such situations, the advice of the investigating body should be sought and. If the item is to be sent the following should be followed:

- prior warning should be given to the intended recipient.
- dispatched from the hospital premises: the condition of the item should be clearly labeled so that it can be determined prior to opening of the inner packaging.
- the packaging should be sufficiently robust to withstand transport.
- the packaging should ensure that the content of the inner pack cannot contaminate the outer one.

Responsibilities of Biomedical Engineers:

- If work on equipment reveals that it is contaminated, a safe system of work should be adopted.
- The department must ensure that before equipment is sent to a third party for service or repair the appropriate decontamination certification has been completed and all appropriate health and safety measures have been taken (eg, safe packaging and labeling).

Pneumatic tube system spill procedures:

A spill is considered to be any chemical, liquid or dry ingredient that has escaped from its original container and leaked into the pneumatic tube system. This could include, but is not limited to blood, medications, lab specimens, chemotherapy agents, etc.

When a spill occurs, the following steps must be observed to contain the contamination:

**NOTE:** Standard precautions should be taken when removing leaking carriers from stations.

- The user will consider the spill to be a biohazard, and must immediately secure the area.
- The user should try to determine which station sent the specimen or other agent, and notify the in-charge nurse that the specimen may need to be re-collected or agent remixed, to ensure optimum patient care.
- Because of the spill, and the nature of the required urgent shutdown procedures, the system is likely to be down for up to 6 hours during cleansing and purging. (Necessary to remove “floaters” from the system & to ensure proper cleaning.)
- Cleaning the tube system is a time consuming job, and all steps must be followed according to these directions to ensure the system is properly cleansed. The affected zones from the sending station to the receiving station (including all interzones) must be disinfected as well. Additionally, all recovered carriers, their liners and any Zip N’ Fold pouches, must be cleaned.

Who to notify:

Notify the following departmental personnel that a spill has occurred within the tube system and follow proper biohazard precautions. Contact the departments below:

- Biomedical Engineering
- Infection Control
- Nursing Administration
- Housekeeping  (For cleaning of the floors, carpet, walls)
Responsibilities:

- Biomedical Engineering will clean the tube system (including stations) and return the system to service when the process is completed.
- The recipient of a contaminated carrier will be responsible for the cleaning the carrier. The carrier and its contents will be taken to a dirty utility area (if available) and cleaned using the approved cleaner.

Biomedical Engineering’s immediate actions:

- Verify that the tube system has been shut down.
- From the “Transaction History”, verify from which station the carrier was dispatched, when it was dispatched, and which station received it.
- Clean out all possible routes (including interzones) that the transaction may have taken in traveling from the source station to the destination station.
- Determine if any other transactions used the same route or any part of it, their source and destination stations and clean out those routes in addition to the route in which the spill occurred. (This action may or may not be possible)

Stations & tubing cleansing notes:

- Be sure to use gloves and proper protective clothing
- Determine the makeup of the specimen, and what potential interactions can be caused from using the chlorine releasing agent.
  - Blood spills: the chlorine releasing agents, used in cleaning these spills.
  - Chemo spills: using Chemo Spills Kit (includes gown, gloves, etc.). A mixture of dishwashing soap and tap water can be used to clean this spill.
  - If you are unsure of the chemo chemical makeup, or if questions arise, contact the Pharmacy Department
  - Formaldehyde spills: Bleach is NOT to be used in cleaning these spills use tap water.

Policy guidance on pre-purchase checklist for infection control purpose

The transmission of infection in association with equipment has been well recognized. Inadequate decontamination has been frequently cited as being responsible for outbreaks infection. The pre-purchase checklist for infection control purposes has been designed to assist customers in selecting products which are not only appropriate for the purpose for which they are being purchased, but that can also be decontaminated and maintained appropriately. The checklist encourages customers to consider decontamination and infection control issues associated with products in use, prior to their purchase.(figure 2)
References:

4. University of Arkansas. Pneumatic tube system spill procedures
Figure 1: Declaration of decontamination form

- Possible contamination with blood or body fluids
  Other contaminant, please state----------------------------
  --------------------------------------------------------------------------------
  - Decontamination Method
    1. Soap & Water
    2. Chlorine releasing agent
    4. Other, please state ------------------------------------------------
       --------------------------------------------------------------------------------

Name --------------------------Signature: ----------------------------- Date: ---------------------
1. Description of item to be purchased: 

2. What recommendations does the manufacturer give in relation to decontamination?  
(Please forward written recommendations if available) 

What is the recommended method/s of decontamination?  
Cleaning: ……………. Disinfection: ……………. Sterilization: …………….

3. For the above stated decontamination method/s to be achieved does the manufacturer recommend other devices/equipment or protective clothing to be purchased or be available for use? 

Yes □ No □ N/A □ 

If yes, please state: 

Name …………………Signature …………………Date …………………

Figure 2: Pre-purchase Infection Control Check list