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## Hemodialysis

These policies and procedures have been written to provide a workable guide to hospital staff caring for the dialysis patients to protect patients and staff from unnecessary exposure to a potentially contaminated environment, and to prevent cross-infection and secondary infections.

### Staff.

- Hand washing. Personnel must wash their hands before and after patient contact, before performing any aseptic technique, and before and after caring for patients on isolation precautions.
- Staff members will follow “Universal/Standard Precautions” when exposure to blood or body fluids is likely.
- Personal Protective Equipment (PPE):
  - Disposable gowns, gloves, masks, and goggles or face shields must be worn when initiating or terminating hemodialysis. Disposable gloves will be worn when performing venipuncture, initiating IV therapy, performing CAPD exchange, cleaning dialysis machines, or when handling items or surfaces contaminated with blood or body fluids.
  - Gloves must be changed after contact with each patient. Hands must be washed after gloves are removed.
- Employee Health:
  - All personnel assigned to the Dialysis Unit will be screened initially and then annually for HBsAg, HBsAb, hepatitis C virus, and HIV.
  - If the HBsAg or HIV is positive, the head of the Dialysis Unit will be informed and the staff member will be referred to Occupational Health for further evaluation and follow-up. The staff member will refrain from patient care duties until the head of the dialysis unit approves his/her return to full duty..
  - If the HBsAg HBsAb, and HBcAg are negative, the staff member will be given hepatitis B vaccine per hospital policy.
  - In the event of a needlestick/sharps injury, any other accidental exposure of mucous membrane, or non-intact skin to blood or body fluids, the healthcare worker shall cleanse the affected area immediately, report the incident to their supervisor, and will be directed to report to Occupational Health during normal working hours or to the Emergency Room during evening hours or weekends.
- Dress Code:
  - Hair, beards, and mustaches will conform to current Navy regulations.
  - All nursing personnel will dress in hospital-provided scrub garments while performing hemodialysis or cleaning dialysis equipment.
  - Separate scrub gowns or lab coats will be worn as a cover-up outside the unit in accordance with current Naval Medical Center regulations.
- In-service. All new personnel will be instructed in infection control, aseptic technique, and sterile technique. Continuing education and review of the above will be scheduled on an annual basis. All personnel will receive annual training in accordance with OSHA’s Blood Borne Pathogens Standard and Tuberculosis guidelines.

### **Traffic Control.**

In general, visitors are not permitted in the Dialysis Unit. Immediate family and selected observers will be admitted with the approval of the charge nurse.

### **Isolation.**

- Isolation will be followed, if indicated in accordance with hospital policy. Refer to the Infection Control Manual.
- Patients will be screened initially for HBsAg and HBsAb. All patients that are negative for HBsAg and HBsAb will be encouraged to receive the hepatitis B vaccine.
- All patients will be screened monthly for elevations in liver functions while HBsAg and HBsAb remain negative. If their HBsAb is positive, it will be re-tested every 6 months. HIV and hepatitis C will be monitored annually.
- Any equipment having contact with a patient who is positive for HBsAg will be maintained permanently separate from the remaining equipment.
- All patients' blood and body fluids will be handled as if they are "infectious". "Universal/Standard Precautions" must be followed on all patients, regardless of the patient's diagnosis.

### **Aseptic Technique.**

- Strict aseptic technique will be used when handling AV access (Gortex grafts, AV fistulas). The access extremity will be washed with betadine solution prior to insertion of needles. (For patients allergic to betadine, the extremity will be scrubbed with chlorhexidine gluconate (Hibiclens) and cleansed with alcohol.)
- Aseptic technique will be used when initiating or terminating hemodialysis.
- If an infection of an access is suspected, blood cultures will be obtained and the attending physician and the Infection Control Department will be notified.
- Hemostats used during the dialysis procedure will be washed thoroughly and soaked for a minimum of 10 minutes in sodium hypochlorite, 1:10 bleach solution, between each use.

### **Equipment and Dialysis Unit Maintenance.**

- Daily.
  - After each patient use the dialyzing compartment and dialysate reservoir will be rinsed according to the manufacturers recommendations.
  - The external surfaces of the machine, bedside table, and patient chair or bed will be wiped with sodium hypochlorite, 1:10 bleach solution or EPA approved hospital disinfectant.
  - Machines with heat disinfect capability are to be disinfected each day according to the manufacturers procedure. They are to be further disinfected with bleach once per week and Minncare once per month.
  - Machines without heat disinfect capabilities are to be bleached and rinsed after use and then again just prior to the next treatment.
  - Soiled linen will be placed in an impervious linen bag, per hospital instruction.
  - All trash will be double bagged, tightly sealed, and removed to the trash storage area for disposal. Contaminated material and infectious waste items soiled with blood or body fluids will be disposed of in appropriately marked RED contaminated plastic bags using

- the double bag technique and in accordance with the hospital regulated medical waste policy.
- Floors will be kept clean and clear of trash. Blood spills will be wiped up with bleach solution (1:10). Gloves must be worn for cleaning up spills.
  - Surfaces & equipment that are contaminated with blood or other potentially infectious materials will be cleaned & disinfected promptly, using a 1:10 bleach solution or an EPA approved hospital disinfectant.
  - Needles and syringes will be disposed of in accordance with hospital policy in puncture resistant sharps containers. Full boxes will be tightly sealed prior to disposal and disposed of in accordance with hospital policy.
  - Housekeeping is responsible for: cleaning floors in the Dialysis Unit and offices, removal of trash, dusting and cleaning the CAPD room.
  - Weekly.
    - The Dialysis Unit staff will hold a weekly field day to stock and order needed supplies and perform any cleaning duties as assigned by the LPO.
    - Windowsills and other horizontal surfaces will be damp dusted with 1:10 bleach solution.
    - Equipment repairs will be carried out on non-dialysis days, or after dialysis treatments are completed for the day.
  - Monthly.
    - Cultures will be sent each month from the effluent dialysate from each machine in regular use and from influx water.

**Hemodialyzer Reuse.**

- Membranes.
  - Hemodialyzer membranes are reprocessed for the same patient use. Used dialyzers are rinsed with R/O water and then processed and stored in renalin disinfectant until the next use for a minimum of 11 hours and a maximum of one week.
  - Prior to reuse, the membranes are rinsed and checked by two persons to ensure that they are negative for residual disinfectant and that the correct dialyzer is set up for each patient.
  - Limulus assay for endotoxins is done on the effluent water in addition to cultures once a month
  - Dialysis Unit staff are to wear standard protective gear and follow “Universal/Standard Precautions” when handling used dialyzers. In addition, they are to wear a water repellent apron and work in a well-ventilated area when reprocessing dialyzers.

**CAPD.**

- A separate room is desired for training; however, treatments may be carried out on the Hemodialysis Unit for outpatients if space is not available. Inpatient treatments will be done on the inpatient wards.
- The cleaning and waste disposal for the CAPD/CCPD rooms will be carried out as described for the Dialysis Unit. Dialysate effluent must be handled following “Universal/Standard Precautions”.

**Cleaning Agents.**

- Sodium hypochlorite (bleach) in a 1:10 dilution will be used for external cleaning of equipment and horizontal surfaces, soaking instruments, and cleaning up blood spills. It will

also be used for internal disinfection of the dialysis machines per manufacturer's recommendations.

- Renalin/Minnicare Disinfectant is composed of hydrogen peroxide, peracetic acid, and acetic acid that is to be used in reprocessing of hemodialyzers and to disinfect the water lines.
- Biosan is a cleaning agent containing carbolic acid that is to be used to disinfect the portable R/O system.
- 409 – All-Purpose Cleaner is a detergent to be used to clean the renatron reprocessing machines.
- Betadine scrub can be used for handwashing and betadine solution or Hibiclens and alcohol are to be used for skin surface cleansing prior to cannulating hemodialysis accesses or performing other invasive procedures.