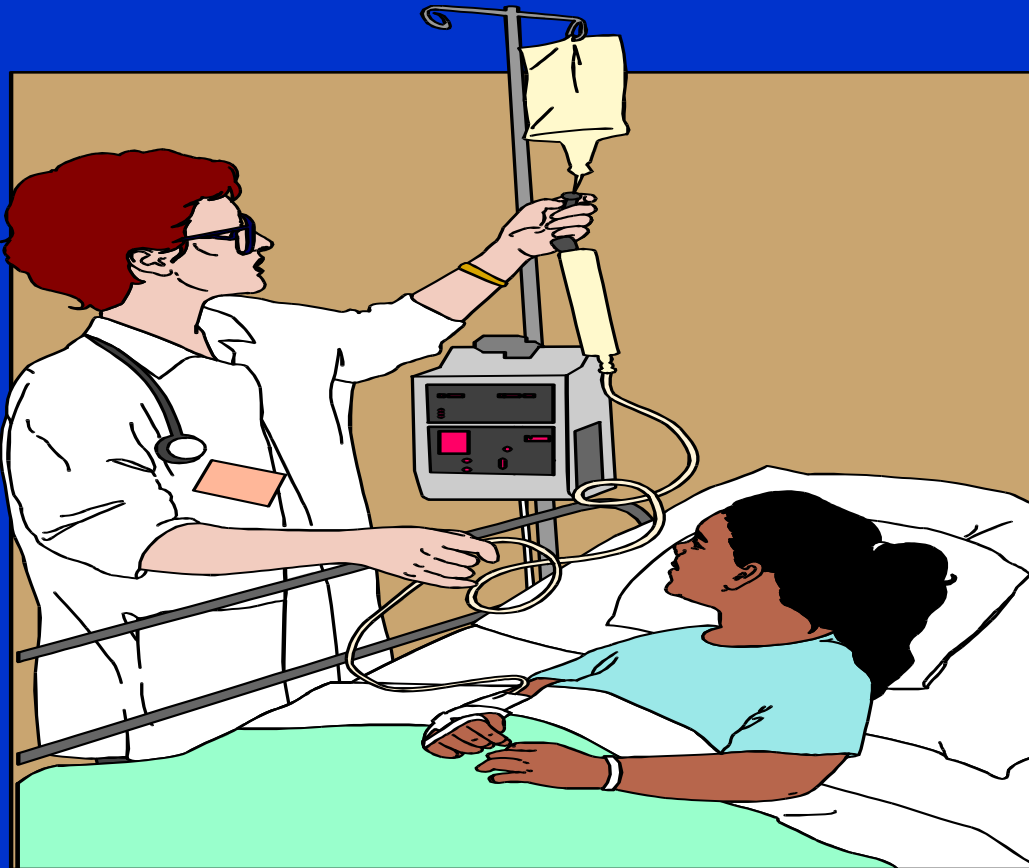
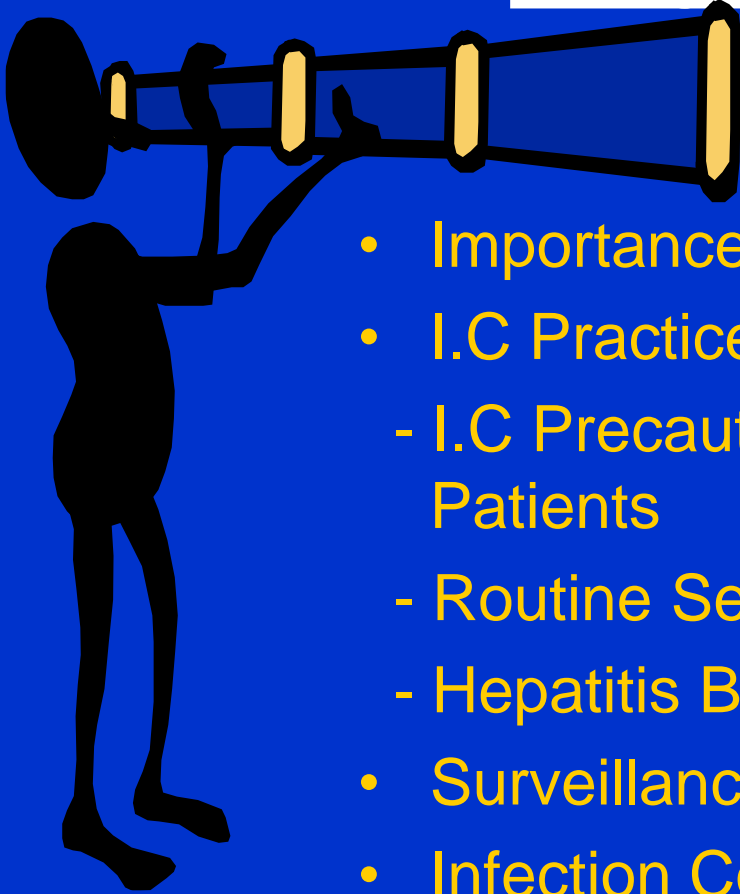


# Infection Control in Dialysis Unit



# Objectives



- Importance
- I.C Practices for H.U :
  - I.C Precautions for All Patients
  - Routine Serologic Testing
  - Hepatitis B Vaccination
- Surveillance for Infections
- Infection Control Training

# Importance

- Chronic hemodialysis pts are at **high risk for infection**
- They are immunosuppressed

# Components of Infection Control Program

- Infection Control Practices for H.U
- Surveillance for Infections
- Infection Control Training and education



# I.C practices for H.U

- I.C precautions specifically designed to prevent transmission of bloodborne **viruses** and pathogenic **bacteria** among patients



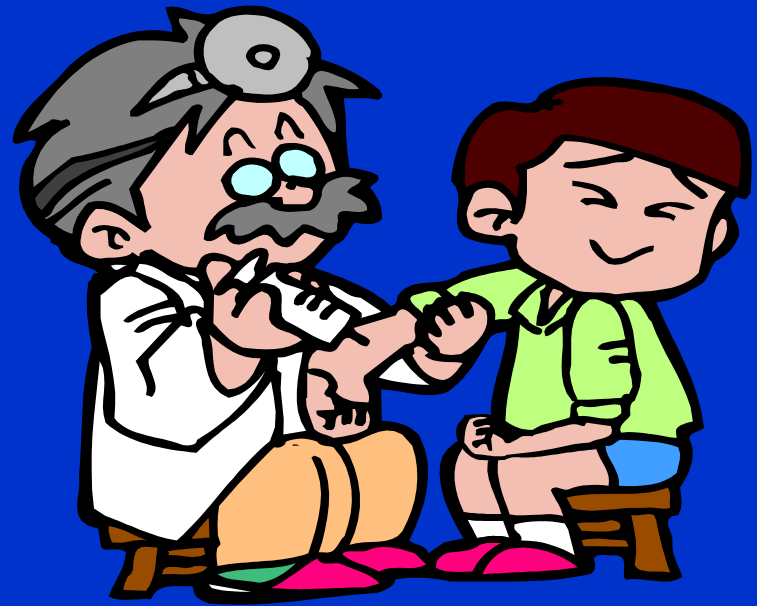
# I.C practices for H.U

- Routine serologic testing for **HBV,HCV**



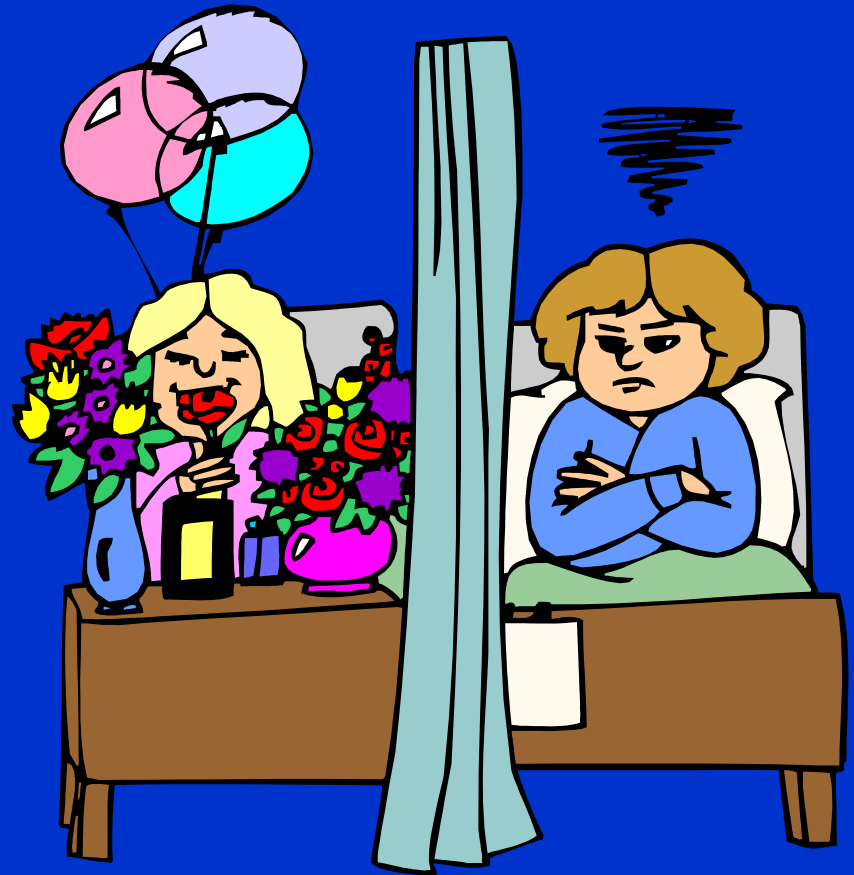
# I.C practices for H.U

- **Vaccination** of susceptible patients against HBV



# I.C practices for H.U

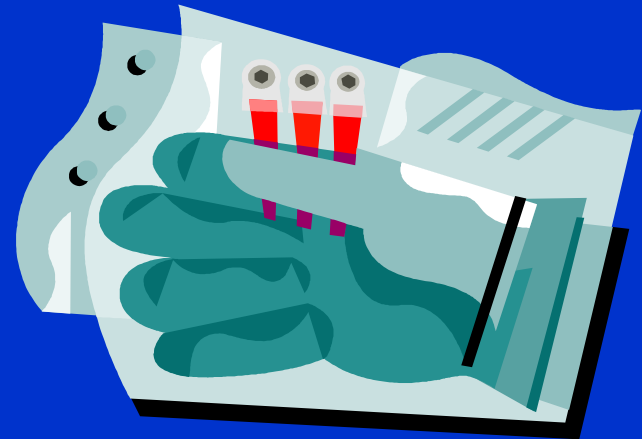
- **Isolation** of patients who are HBsAg +





# Infection Control Precautions for ALL Patients

- Wear disposable **gloves** when caring for the patients or touching equipment



# Infection Control Precautions for ALL Patients

- Remove gloves and **wash hands** between each patient or station



# Infection Control Precautions for ALL Patients

- **Items** taken into the dialysis station should either be disposed, or cleaned and disinfected before use on another patient
  - \_ Nondisposable items that cannot be cleaned and disinfected (adhesive tape, cloth-covered B.P cuff) should be **used only on a single patient.**

# Infection Control Precautions for ALL Patients

- Unused medications (multiple dose vials) or supplies (syringes, alcohol swabs) taken to the patient's station should be used only for that patient and should not be returned to a common area or used on other patients.

# Infection Control Precautions for ALL Patients

- When multiple dose medication vials are used , prepare individual patient doses in a clean (centralized) area away from dialysis stations and deliver separately to each patient.
  - **Do not carry multiple dose medication vials from station to station**

# Infection Control Precautions for ALL Patients

- **Do not use** common medication carts to deliver medications to patients.
- **Do not** carry medication vials, syringes, alcohol swabs, or supplies in pockets.
- If trays are used to deliver medications to individual patients, they must be cleaned between patients.



# Infection Control Precautions for ALL Patients

- Clean areas should be clearly designated for the preparation, handling, and storage of medications and unused supplies and equipment .



# Infection Control Precautions for *ALL* Patients

- Clean areas should be clearly separated from contaminated areas where used supplies and equipment are handled.



# Infection Control Precautions for ALL Patients

- **Do not** handle and store medications or clean supplies in the same or an adjacent area to where used equipment or blood samples are handled.

# Infection Control Precautions for ALL Patients

- Use *external transducer* filters/protectors for each patient.
- Change filters/protectors between each patient treatment , and **do not reuse** them.
- *Internal transducer* filters **do not need** to be changed routinely between patients.

# Infection Control Precautions for ALL Patients

- Clean and disinfect the dialysis station (chairs, beds, tables, machines) between patients.
- Discard all fluids
- Clean and disinfect all surfaces and containers associated with the prime waste.

# Infection Control Precautions for ALL Patients

- For dialyzers and blood tubing that will be reprocessed, cap dialyzer ports and clamp tubing.
- Place all used dialyzers and tubing in leakproof containers for transport.

# Infection Control Precautions for ALL Patients

- Staff members should wear gowns, face shields, eyewear, or masks when performing procedures : initiation and termination of dialysis, cleaning of dialyzers, centrifugation of blood



# Infection Control Precautions for ALL Patients

- Change protective equipment if it becomes soiled with blood,...



# Infection Control Precautions for ALL Patients

- Staff members *should not* eat, drink, or **smoke** in the dialysis treatment area or in the lab.
- Patients can be served meals or eat food brought from home at their dialysis station

# Infection Control Precautions for ALL Patients

- The glasses, dishes, and other utensils should be cleaned in the usual manner
- No special care of these items is needed.



# Schedule for Routine Testing for HBV,HCV

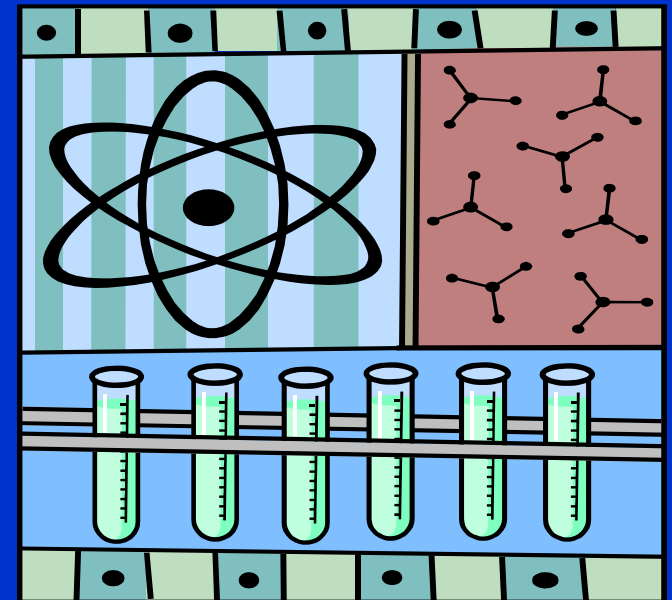
Pt	On adm.	Monthly	Semiannual
All patients	HBsAg, Ab Anti-HBc, Anti-HCV,ALT		
HBV-suscep., Nonrespond.		HBsAg	

# Schedule for Routine Testing for HBV,HCV

Pt. status	Monthly	Semiannual	Annual
Anti-HBs + , Anti-HBc -			Anti-HBs
Anti-HBs & Anti-HBc +	No additional HBV testing needed		
Anti-HCV -	ALT	Anti-HCV	

# Routine Serologic Testing

- Routinely test all chronic h. pts for HBV and HCV infection.
- Routine testing for HDV or HIV infection for purposes of infection control is *not* recommended.



# Hepatitis B Vaccination

- Vaccinate all susceptible patients against hepatitis B
- Test for anti-HBs 1-2 mo. After last dose :
  - If  $Ab \geq 10$  mIU/ml, retest annually, give booster dose if  $Ab$  declines to  $< 10$
  - If  $Ab < 10$  mIU/ml, revaccinate and retest



# Hepatitis B Vaccination

- HB vaccination is recommended for **all** susceptible chronic h. **patients** and for **all staff** members.
- **Test all vaccinees** for anti-HBs 1-2 months after the last primary vaccine dose.
- Adequate response:  $\geq 10$  mlu/ml



# Management of HBsAg+ Pts

- Follow infection control practices for H.U for all pts
- Dialysis HBsAg+ pts in a separate room using separate machines, equipments, and supplies

# Management of HBsAg+ Pts



- Staff members caring for HBsAg+ pts should no care for HBV-susceptible pts at the same time ( during the same shift or patient changeover)

# Hemodialysis Staff Members

- Routine testing of staff members **is not recommended** except when required to document response to hepatitis B vaccination.
- Routine testing of staff members for HCV, HDV or HIV infection **is not recommended.**



# Cleaning and Disinfection

- Establish **written protocols** for C./D. surfaces and equipment in the D.U
- After each pt treatment, clean environmental surfaces
- Use any soap, detergent, or detergent germicide

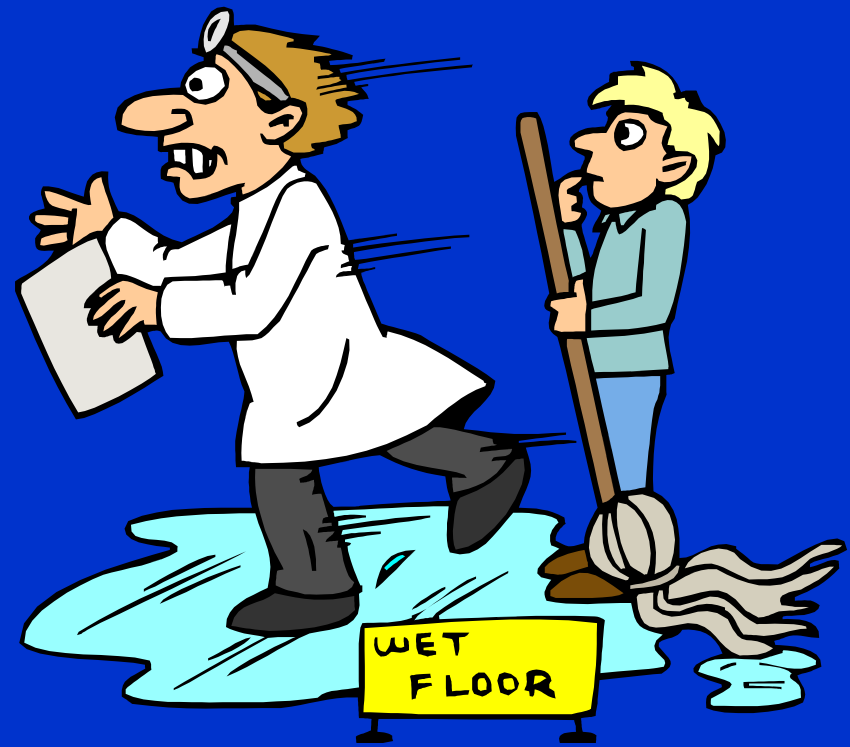
# Cleaning and Disinfection

- Between use of medical equipment ( scissors, hemostats, clamps, stethoscopes, blood pressure cuffs), clean and apply a hospital disinfectant( LLD)
- If the items are visibly contaminated with blood, use a tuberculocidal disinfectant (ILD).



# Cleaning and Disinfection

- For a **blood spill**, immediately clean the area with a cloth soaked with a tuberculocidal disinfectant or a 1:100 dilution of household bleach (300-600 mg/L free chlorine) (ILD)



# Disinfection Procedures in H.U

Item/surface	LLD	ILD
• Gross blood		✓
• Hemod. Port caps		✓
• Inter. Path. D. mach.		✓
• Water treat.	✓	✓
• Scissor, clamp, cuff, stethoscope	✓	✓
• Environ. Surface, ext. H. machine	✓	

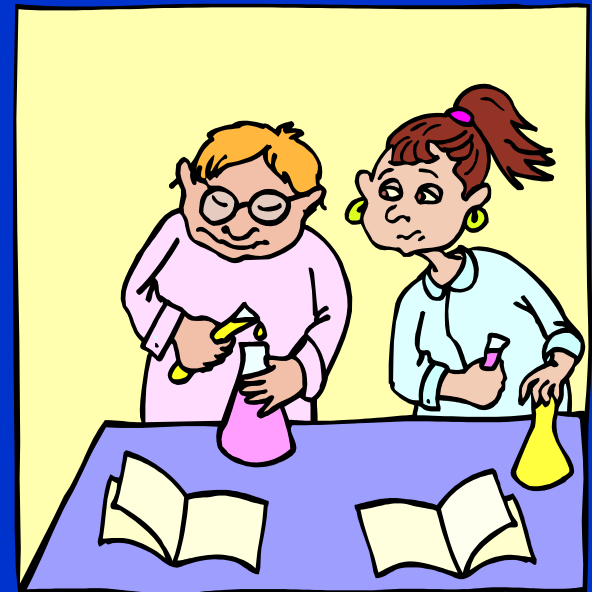
# Cleaning and Disinfection

- Routine bacteriologic assays of water and dialysis fluids should be performed.



# Surveillance for Infections

- Develop and maintain a separate record-keeping system to record the results of :
  - pts vaccination status
  - serologic testing results for viral hepatitis (including ALT)
  - episode of bacteremia
  - , . . . . .



# Infection Control Training and Education

- Training and education for both staff members and patients (or their family care givers)



# Training and Education

## At least annually :

- Proper hand hygiene technique
- Proper use of PPE
- Modes of transmission for bloodborne viruses
- I.C practices for H.U
- Housekeeping
- ....





**Thank you**