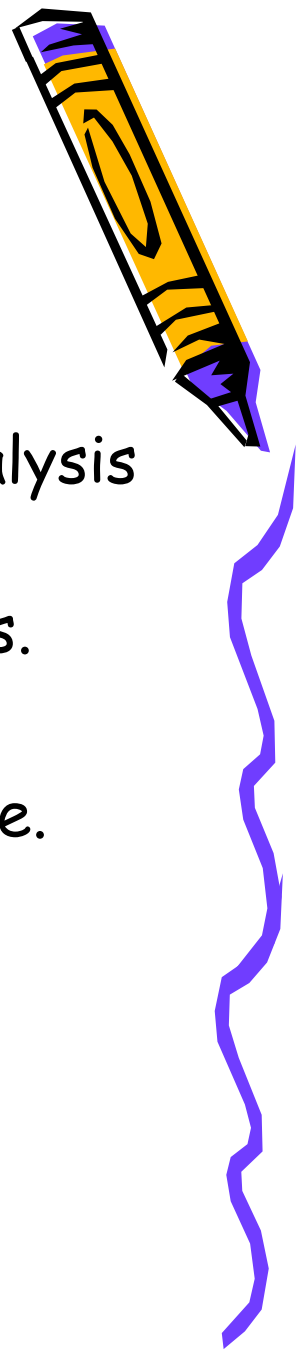


# Peritoneal Dialysis

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Nurse Manager  
&  
Peritoneal Dialysis Educator

# Objectives



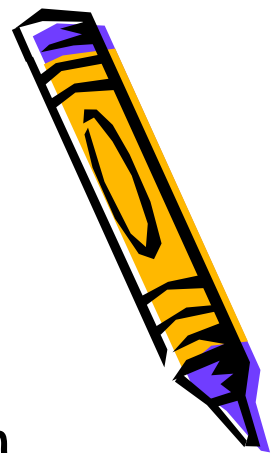
- Objectives:
- Describe the pre-op protocol of peritoneal dialysis (PD).
- Differentiate the different PD catheter sizes.
- State the common types of catheters in PD.
- Describe the manual PD set-up for the neonate.
- Differentiate between the different osmotic agents.
- Explain the major complications.



# Pre-Op Management\*

- Patient/Parent Education. Consent
- NPO at least 8 hours (prior to catheter insertion)
- Empty bladder and bowel prep if hx of constipation
- Weight
- Shower or bathe with disinfectant on day of surgery
- Mark exit site area for surgeon
- 1-3 hours pre-op bolus dose of an anti-staphylococcal antibiotics
  - First generation cephalosporin or Vancomycin 12 hours prior.

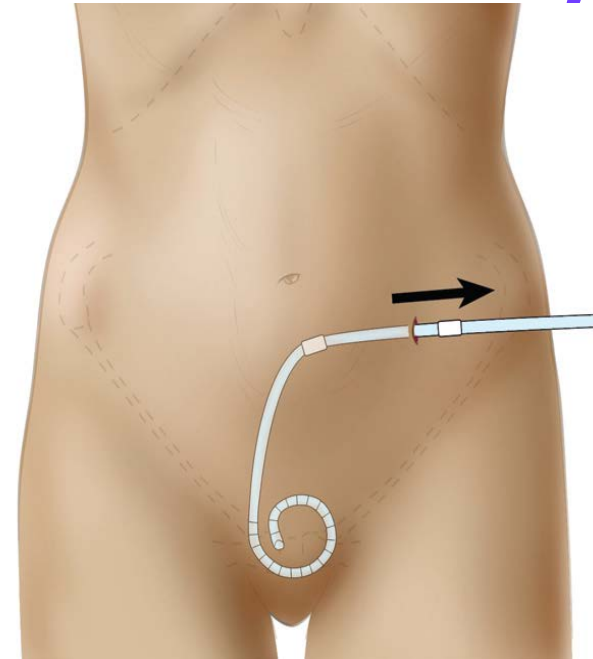
Optimal timing for peritoneal catheter insertion should take place 2 weeks prior to use of catheter. This is to ensure anchoring of the internal and external cuffs and healing exit sites.



# Peri-Operative

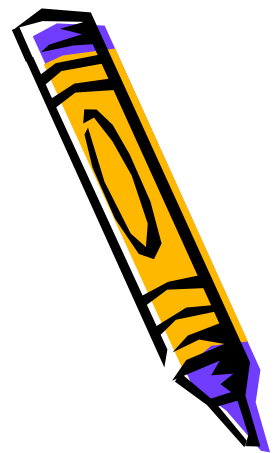
- Catheter tip should have deep pelvic location.
- Position exit site downward
- Omentectomy
- Verify patency
- Immobilize the catheter  
With adhesive tincture  
And sterile adhesive strips.

NO SUTURES PLEASE!



# Post-Op Management

- Keep sterile dressing clean, dry and secure for one week.
- No showers or tub baths until completely healed.
- Dressing to be done by trained dialysis nurses only, until healed for 2-3 weeks.

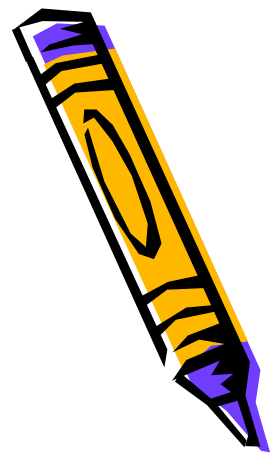


# Exit Site Care

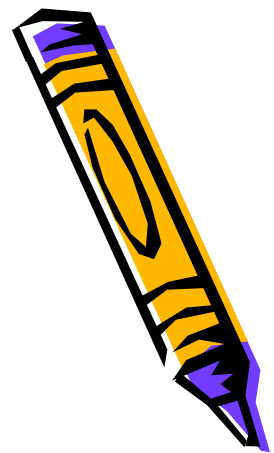
## Antibiotic Prophylaxis

ISPD recommends one of the following:

- Gentamicin 0.1% cream daily @ exit site, effective in reducing gram-pos & gram-neg infections.
- Mupirocin intranasal bid for 5-7 days for nasal staphs carriers.



# Catheter Selection



## Child's weight

Tenckhoff size

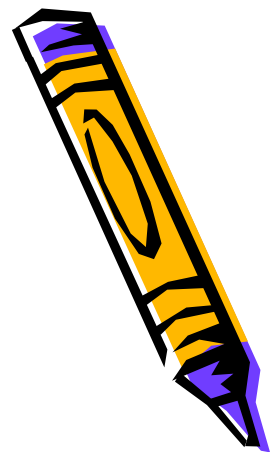
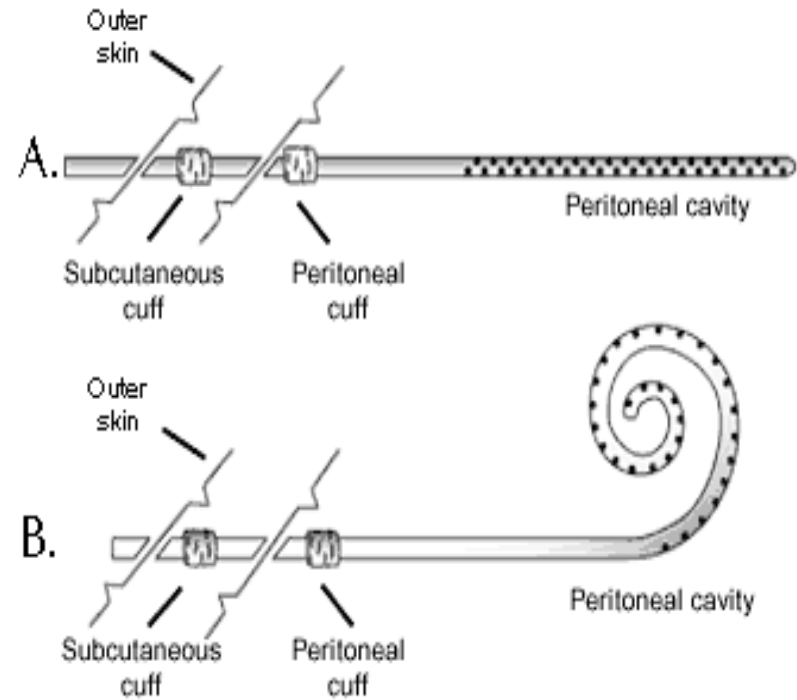
0-10kg infant  
10-20kg  
> 20kg

25cm  
36cm  
39cm - 40cm



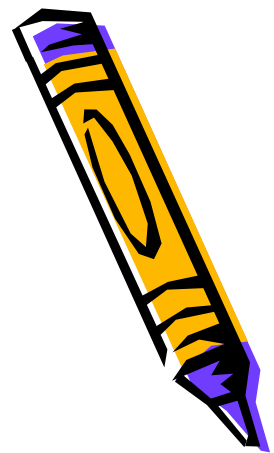
# Types of Catheters

- Straight Catheters
- Spiral Catheters
- Swan Neck Catheters

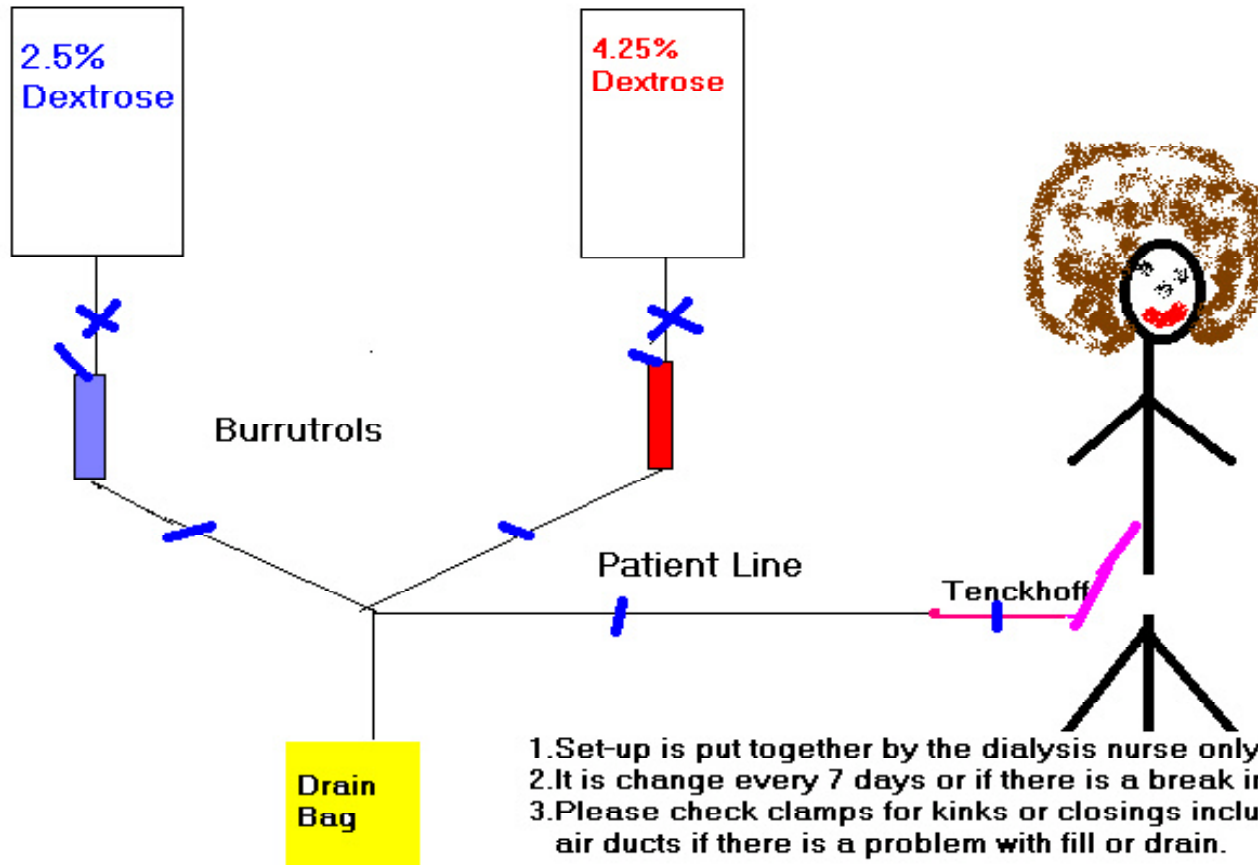
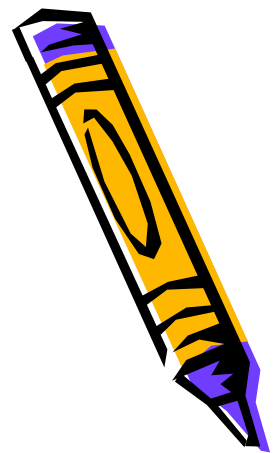




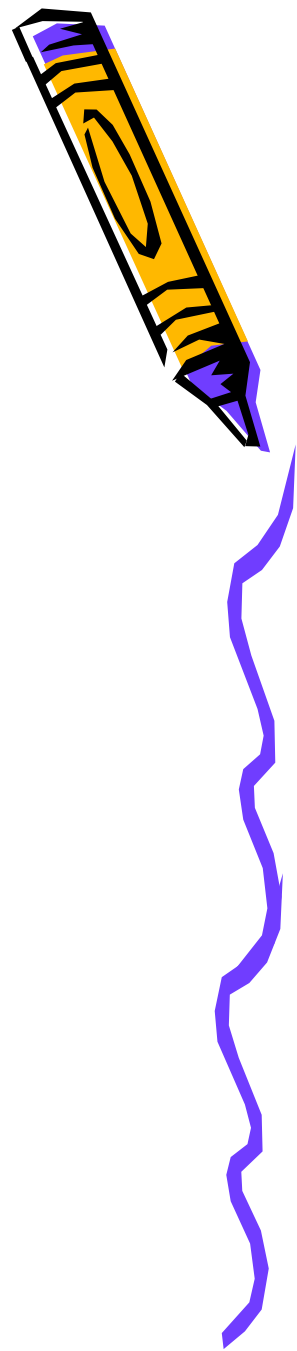
# Swan Neck Catheters



# Break-In Technique with Manual Set-Up



# PD Dialysis Prescription

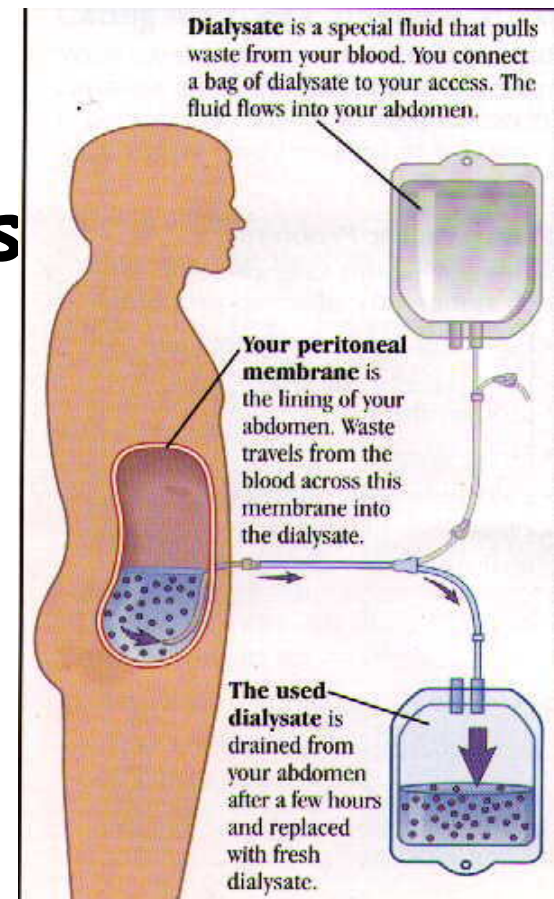


- Neonate & Infants
  - Manual dialysis <100mL/cycle
  - 2-5 mL/kg (neonates)
  - 10-20 mL/kg to 1100 m<sup>2</sup> BSA (Infants)
  - Manual dialysis exchanges for inflows volumes <50mL
  - Temperature of solution
  - Types of small volume sets:
    - Home made, Dially-Nate
    - Requires the use of timer



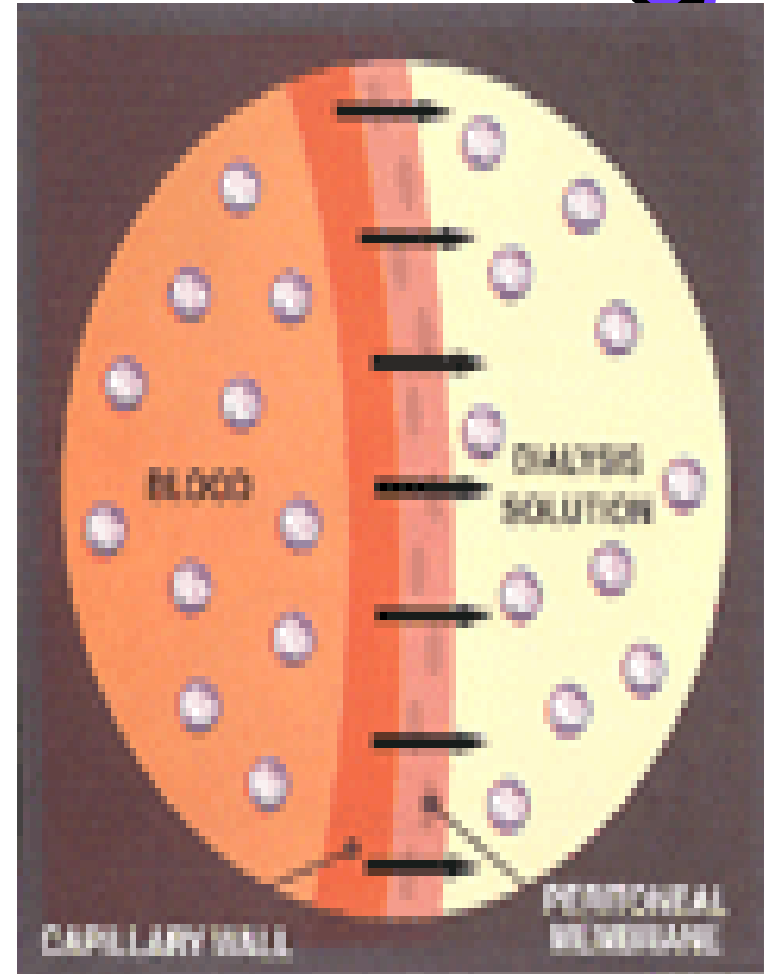
# PD Prescription

- Type of Solution- Dextrose
- Fill- Volume
- Dwell- How long
- Drain - How long in minutes
- Cycles-How many
- Additives- Antibiotics & Anticoagulant



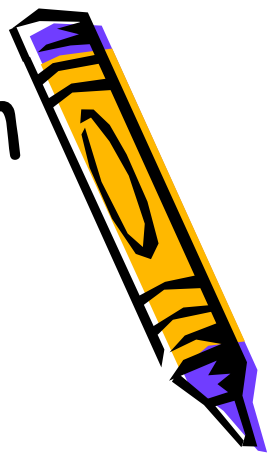
## Solutions Used in PD

- 1.5% dextrose solution
- 2.5% dextrose solution
- 4.25% dextrose solution



# When do you transition from Manual to Machine?

?



# Parent Training

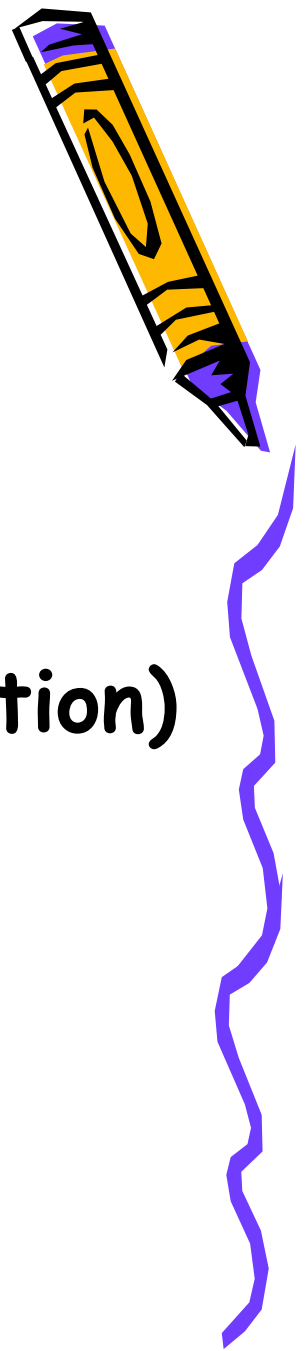


Day 1	Day 2	Day 3	Day 4	Day 5
Introduction to CAPD	Intro to aseptic technique concepts	Intro to procedure of adding medications	Intro to complications of PD & catheters	Inventory & Ordering Supplies
Normal A&P	Review of vital signs	Taking specimens	Consultation with dietician and SW	Assessment + Test
Intro to CAPD with model	Practice... Practice... Practice...	Intro to dressing changes	Practice... Practice... Practice...	Going Home with Nurse



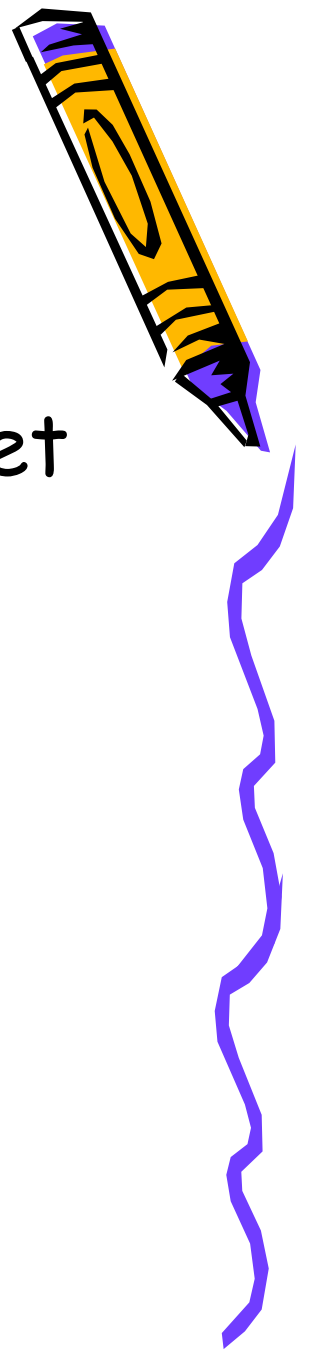
## Complications of PD

- Air in the Peritoneum
- Dialysate Leak
- Fibrin Production
- Inflow/ out flow problems (Obstruction)
- Hernias
- Infection: Exit site, Peritonitis & Tunnel Infection





# Peritoneal Catheter Obstruction

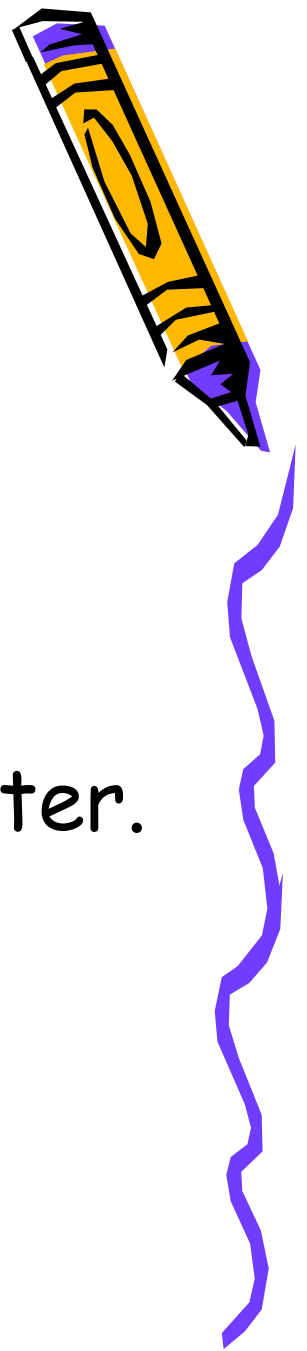


- Mechanical blockage of transfer set
- Blood clots or fibrin
- Peritonitis
- Constipation
- Catheter entrapment
  - Omentum wrap
  - adhesions



# tPA Administration

- Prepare solution sterile water (tPA 1mg/mL)
- Fill abdomen with some dialysate
- Instill @ least 2mg tPA diluted with sterile water the length of the catheter.
- Allow to dwell 1-2 hours, then drain
- Repeat if necessary.



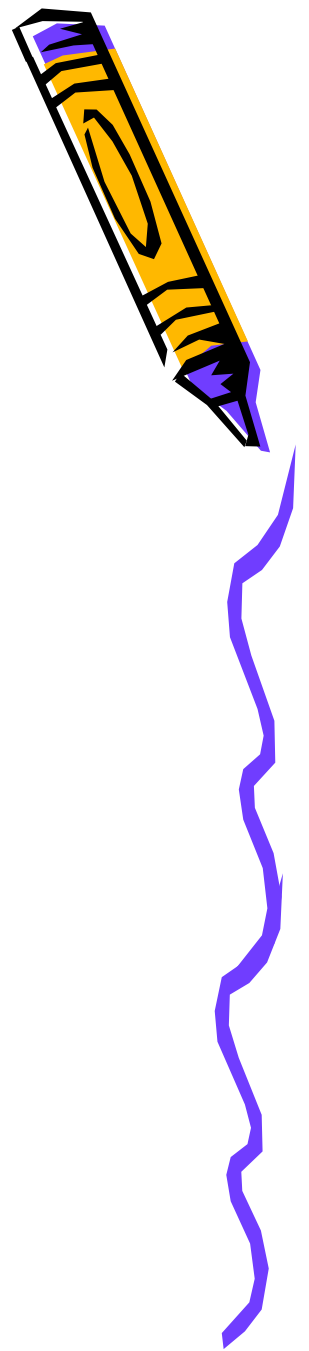
# Exit Site Treatment

- Obtain culture and gram stain
- 1<sup>st</sup> generation cephalosporin i.e Cephalexin (Keflex) 250-500 mg BID
- Ciprofloxacin 20mg/kg/day in divided doses

• Rifampin 20/mg/kg orally in divided doses (max 600mg/day)\*\*\*



# Peritonitis Management



- Clinical Diagnosis
  - Cloudy effluent w/ WBC  $>100/\mu\text{L}$  of which 50% (PMN)
  - Identification of organisms on Gram stain or culture



# Dosing for Peritonitis

## Loading

- Cefazolin /Cephalothin 250mg/L
- Ceftazidime 250mg/L
- Vancomycin 15/30 mg/kg every 5-7 days
  
- Tobramycin 8mg/L
- Gentamycin 8mg/L
- Heparin 500-1000units/L

## Fungal Peritonitis

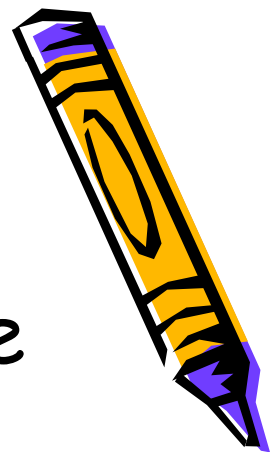
• Amphotericin N/A

• Fluconazole N/A

• Rifampin 20mg/kg/day (max dose 600mg/day)

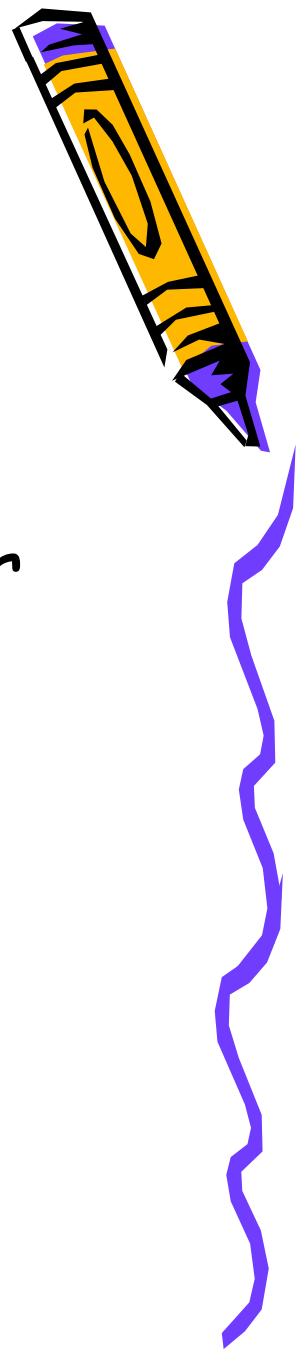
## Maintenance

- Cefazolin 125mg/L
- Ceftazidime 125mg/L
- Vancomycin 25mg/L
- 21 day therapy
  
- Tobramycin 4mg/L
- Gentamycin 4mg/L
- Heparin 500-1000units/L
- Fungal Peritonitis
- Amphotericin 1.5mg/L
- Fluconazole 200 mg every 24-48 hours



# Therapeutics

- Loading therapy 1-6 hours
- Maintenance 14-21 day therapy for infectious peritonitis
- Sterile Peritonitis 10-14 days



# Questions



# References

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