1. ACUTE PERITONEAL DIALYSIS (PD) should be administered promptly to patients requiring rapid correction of metabolic abnormalities not amenable to medical management only.

2. **Indications** for acute PD are as follows:
   a. uraemic encephalopathy
   b. severe metabolic acidosis
   c. diuretic resistant hypervolaemia with pulmonary oedema in patients with cardiovascular compromise
   d. uraemic neuropathy
   e. hyperkalaemia not amenable to medical management (if hyperkalaemic ECG changes are present the patient should receive emergent haemodialysis)
   f. hypothermia
   g. hemorrhagic pancreatitis (where peritoneal lavage may be beneficial)

3. **Contraindications** to acute PD are as follows:
   a. Recent surgery requiring abdominal drains
   b. Known fecal or fungal peritonitis
   c. A known pleuroperitoneal fistula
   d. Severe hyperkalaemia

4. **Relative contraindications** are:
   a. Abdominal wall cellulitis
   b. Adynamic ileus
   c. A new aortic prosthesis
   d. Presence of abdominal adhesions or fibrosis
   e. Gastroesophageal reflux disease (GERD)
   f. Peritoneal dialysis can complicate the care of patients with respiratory failure as it may mechanically interfere with respiration and may increase the production of carbon dioxide resulting from metabolism of the absorbed glucose

5. Under aseptic conditions, place a semi-rigid temporary PD catheter approx 1.5cm below the umbilicus and gently advance into the peritoneal cavity. Suture the catheter securely into place and apply a sterile dressing with bactroban or a suitable antiseptic ointment at the exit site. **Of note, during the procedure the patient must be masked and draped and the physician must be capped, masked and gowned.**
6. To rapidly correct hyperkalaemia, acidosis and urea levels, initial exchanges should be rapid exchanges and continued until acceptable serum levels are obtained, i.e: **15 minute fill time + 1 hour dwell time + 15 minute drain time**. Dwell times less than 30 minutes are ineffective. After every 6th of these rapid exchanges a U&E must be obtained and dialysis efficacy evaluated. Occasionally acutely ill patients will require prolonged periods of hourly exchanges, especially those who are catabolic and in need of nutritional and therapeutic support. This may last days.

7. Once the patient has reached acceptable serum potassium or HCO3 levels, a maintenance PD regimen should be instituted, 4 hourly exchanges (dwell time 3.5 hours).

8. As the dialysis requirement for patients may change from day to day, it is prudent to write peritoneal dialysis orders for only 24 hours at a time.

9. The **dialysate concentration** must be chosen according to the patient’s volume status. 4.25% for volume overloaded patients, 1.25% for euvolaemic patients or a combination of both. Dehydrated patients can receive IV fluids while on PD and will need to be managed carefully to prevent exacerbating the renal injury via prerenal injury. A CVP is usually not necessary to evaluate a patient’s volume status.

10. When very rapid fluid removal is required. The osmotic effect of high-dextrose dialysis solution diminishes rapidly. The high-dextrose dialysis solution is most effective in the initial 15 to 30 minutes. Patients in severe pulmonary oedema can be treated initially with two or three in-out (zero dwell time) 2L exchanges of 4.25% solution. Each exchange will remove approximately 300ml of fluid, approx 1Litre/hour.

11. Every patient’s peritoneal membrane is different with varying transport times and PD must be individualized according to patient response, i.e. adjusting dwell times and dialysate used.

12. For **ALL** exchanges the patient and sister **MUST** wear a surgical mask.

13. For **ALL** exchanges the sister **MUST** wear sterile gloves.

14. The **dressing** must be removed once daily and a new sterile dressing with Bactroban ointment placed. The patient, physician or sister must be masked for this and aseptic technique used.

15. Patients with Severe Hyperkalaemia with ECG changes must receive emergent Haemodialysis. Peritoneal dialysis cannot remove potassium rapidly enough in these patients. (They should also receive IV Calcium Glutonate and potassium shift).

16. Intake and output must be carefully monitored and recorded, including ultrafiltrate volume (Volume drained – fill volume)
17. The patient must be monitored daily for signs of **peritonitis**: vital signs including temperature, abdominal pain, cloudy or bloody drained fluid. IP antibiotics should be administered only after the dialysate has been sent for cell count and culture.

18. **Potassium replacement** may be necessary. Potassium Chloride (3.5 – 4.0 mEq/L) can be added to the dialysate. Even in normokalaemic patients, KCl replacement may be adviseable. During the correction of metabolic acidosis 4.0mEq/L may not be enough to prevent hypokalaemia and parenteral supplementation may be required.

19. **After 72 hours of effective peritoneal dialysis uraemic encephalopathy should have cleared and other causes for continued encephalopathy ought to entertained.**