IVI MANAGEMENT

Indications for Intravenous Therapy:

Several advantages exist when using the intravenous route as a vehicle for drug administration. Pritchard and David (1988:81) highlight these as being:

i. An immediate therapeutic effect is achieved due to rapid delivery of the drug to its target.
ii. Total absorption allows precise dose calculation and more reliable treatment.
iii. The rate of administration can be controlled and the therapeutic effect maintained and modified as required.
iv. Pain and irritation caused by some substances when given intramuscularly or subcutaneously are avoided.
v. Intravenous administration is suitable for drugs which cannot be absorbed by any other route due to large molecular size and irritation to, or instability in, the gastrointestinal tract.

Having seen the above advantages, one should not ignore the disadvantages such therapy carries, namely:

i. Inability to recall the drug and reverse its action which may lead to increased toxicity or a sensitivity reaction.
ii. Insufficient control of administration may lead to speed shock.
iii. Additional complications, including microbial contamination, vascular irritation, and drug incompatibilities and interactions when multiple additives are prescribed.

(Pitchard and David 1988)

Nursing Process Data

ASSESSMENT ***Data Base***

Note patient's allergies.
Note any drug or solution incompatibilities.
Assess amount and type of diluent needed to prepare medications.
Assess patient's general status to establish a baseline for administering medications.
Assess patency of infusion set and condition of IV insertion site.

PLANNING ***Objectives***

To maintain a therapeutic level of medication in the patient's blood stream.
To administer medication safely over a specific period of time.
To prevent complications associated with medication administration.

IMPLEMENTATION ***Procedures***

Adding medication to IV solution
Using a peripheral saline lock
Administering medications by peripheral IV line injection "Push".

EVALUATION ***Expected Outcomes***

Therapuetic blood level of medication is maintained.
Complications of medication administered are prevented.
Medication is infused over appropriate time span.

(Smith et al 2004)

IV Bolus Drug Administration
Procedure:

1. Wash hands.
   According to McFarlane (1990:250) "*Hand washing is recognised as the single most important procedure in preventing infction in hospital*".

2. Check drug with treatment chart using the *Five Rights*.

3. Check patient's name with wrist tag and treatment chart.

4. Enquire for any allergies associated with drug.

5. Double check dose.

6. Check drug for compatibility with other drugs and/or primary infusing solution.
   Rationale: Flushing the primary infusion tubing will be necessary both before and after administering the drug if incompatibility exists (Smith et al 2004).

7. Mix medication accurately according to instructions given on drug insert sheet.

8. If drug is ready prepared in an ampoule, clean with alcohol to remove dust or other material adhered to it.

9. Prepare 5ml to 10ml of 0.9% sodium chloride flush (more if several drugs are to be administered).

10. Aseptic technique should be observed while preparing the drug and flush solution.

    "*Aseptic technique is the key preventive measure in reducing the likelihood of infection associated with IV therapy*" (Lamb 1995:33), and is done to prevent extrinsic bacterial contamination (Pitchard and Mallett 1992).

11. Prepare the drug near the patient. If this is not possible the drug should be prepared in the treatment room and taken near the patient in a clean tray or kidney dish

12. Explain procedure to patient.

13. Check I.V. cannula site for signs of infection, phlebitis, infiltration, swelling, discomfort or pain. If the site is bandaged, the bandage must be removed to allow inspection of the site.

14. Disinfect the outside of the injection port of the cannula with alcohol before inserting the syringe nozzle.

15. Before administering the drug, administer a small amount (1-2ml) of the 0.9% sodium chloride flush to confirm the patency of the cannula. (0.9% sodium chloride is used for flushing purposes except in a few instances when the drug being administered is incompatible with sodium chloride. In these cases (e.g. amphoteracin), sterile bi-distilled water or 5% dextrose should be used instead.

16. Slowly administer the drug according to the manufacturer's instructions.

17. Administer the remaining flush or, if a number of drugs are being given, flush between each one to prevent mixing in the cannula.

18. Monitor patient for any adverse reaction to drug and watch for any side effects.

19. Enter and sign the drug on the treatment chart.

20. Dispose of all injecting materials correctly according to infection control policies.

Changing an I.V. Infusion Bag
Procedure:

1. Wash hands.

2. Explain procedure to patient.

3. Remove the infusion fluid from its outer wrapper and check the fluid bag for leakage, particles, cloudiness, expiry date, volume and batch number.

4. Check infusion bag with treatment chart and check patient's identity tag.

5. Close the roller clamp on the administration set.

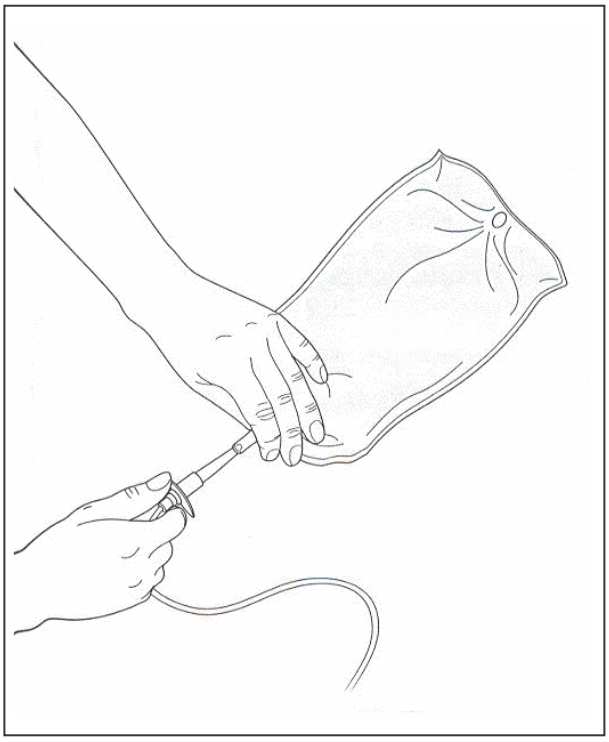
6. Remove the empty infusion bag from the stand and pull out the spike of the administration set, taking care not to contaminate it.

7. Remove the protective cover from the inlet port of the new infusion bag and insert the spike of the administration set, twisting until fully inserted (see diagram below).

8. Replace the bag on the infusion pole and adjust the roller clamp to the prescribed flow rate.

9. Enter and sign the new infusion on the treatment chart and intake/output chart.

10. Dispose of all materials correctly according to infection control policies.



Care of Peripheral Cannula: Site Evaluation, Care, and Dressing Change.

Site evaluation and care helps prevent infection at the venapuncture site and promotes early recognition of infiltration, phlebitis and other complications. Patients receiving continuous infusion of fluids/medications via peripheral intravenous access should be evaluated for evidence of catheter related complications **every 4 hours** for adult and hourly for paediatric patients. Patients receiving either intermittent

medications or have their peripheral intravenous access for standby, are to be evaluated every 8 hours. Perform site evaluation and care as follows:

Site check for infiltration, phlebitis, and signs of infection and equipment integrity should include:

i) skin temperature
ii) general condition or appearance of site
iii) swelling or inflammation around device/site
iv) pain or tenderness around device/site
v) unexplained fever
vi) presence and integrity of tape and dressing

Complete site care should be performed when an IV device dressing is not dry, clean and securely intact.

Dressing Change Procedure:

1. Gather equipment (Disposable towel or inco-pad, cleansing agent: [chlorhexidine gluconate, alcohol, or povidine iodine], tape, gloves, and preferably a transparent dressing).

2. Explain procedure to patient and emphasise the importance of remaining still during the procedure, to prevent dislodgement of the cannula.

3. Wash hands and put on gloves.

4. Ensure that all equipment is within easy reach. Protect the area under the arm with a disposable towel or inco-pad, to collect any spillage.

5. Remove the old dressing carefully. Assistance may be required to secure the cannula during this procedure.

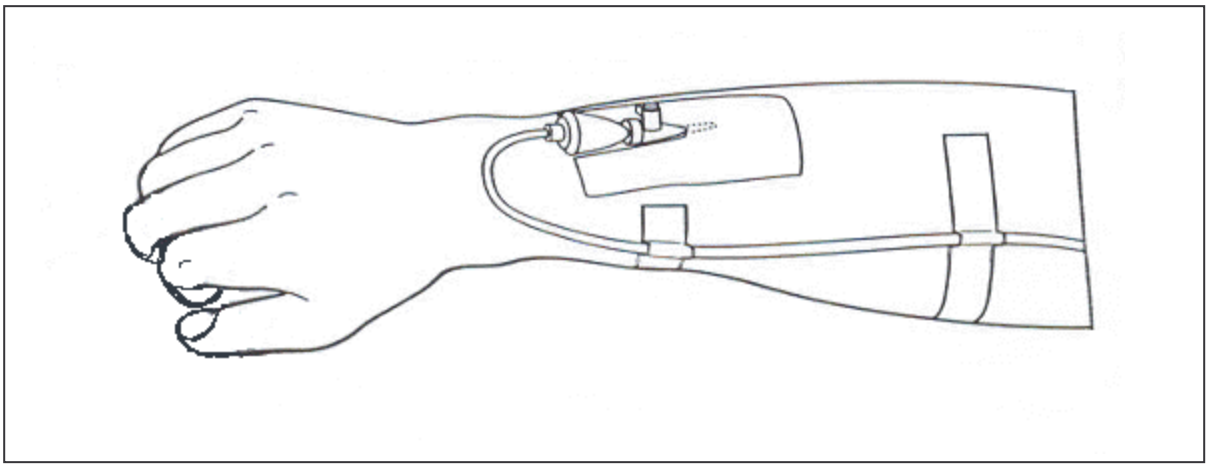
6. Clean the insertion site and surrounding area with cleansing agent and allow to dry. If pus or exudate is present, the cannula should be removed.

7. Apply the new dressing, taking care not to touch the part, which will be directly over the insertion site.

8. If an IV infusion is running, secure the tubing of the administration set to prevent pulling and accidental dislodgement of the cannula (see diagram below).

9 Dispose soiled dressing and other waste correctly. Remove gloves and wash \ hands.

10. Document the care and report any abnormalities.



University of South Carolina Hospitals (2003)

Discontinuing an IV and removing a Peripheral Cannula Procedure:

1. Gather equipment (2 x 2 gauze pads, tape, clean gloves)

2. Wash hands and wear gloves.

3. Explain the procedure to the patient.

4. Turn off infusion, if present.

5. Loosen dressing and tape, peeling edges back toward puncture site. **Rationale:** Minimizes trauma to puncture site.

6. Stabilize cannula while removing dressing and tape. **Rationale:** Stabilizing site prevents unnecessary movement which could injure the vein.

7. Hold sterile gauze over site and remove cannula carefully and smoothly, keeping it almost flush with skin. Do not press down on top of needle point while it is in the vein.

8. Quickly press sterile pad over venapuncture site, and hold firmly until bleeding stops.

9. Hold pressure for several minutes if patient's *drug therapy* prolongs bleeding (eg. Warfarin therapy).

10. Apply clean pad and tape in place.

11. Elevate arm to reduce venous pressure and help collapse vein to facilitate clot formation. Do not bend arm at elbow. **Rationale:** Bending elbow causes haematoma formation.

12. Observe venapucture site for redness, swelling, or haematoma.

13. Dispose of equipment and gloves.

14. Wash hands.

15. Check site again in 15 minutes and report any abnormalities.

16. Record volume infused on I & O chart if patient had an IV infusion going.

(Smith et al 2004)

References

Lamb, J. (1995). Peripheral IV Therapy. *Nursing Standard*, Apr 19, Vol 9, No. 30, pp 32:35.

Mc Farlane, A., (1990). Why do we forget to remember Hand Washing? *Professional Nurse*, Feb.

Pritchard, A.P., and David, J.A., (1988). *Manual of Clinical Nursing Practice*, *2nd edition*, London, Harper and Row.

Pitchard, A.P., and Mallett, J., (1992). *Manual of Clinical Nursing Procedures, 3rd edition*, London, Blackwell Scientific.

Smith, S.F., Duell, D.J., & Martin B.C., (2004). *Clinical Nursing Skills, 6th edition*, New Jersey, Pretince Hall.

University of South Carolina Hospitals (2003). Nursing Procedure Manual . http://www.med.unc.edu/nursing/manuals/contents/procedure/prc.intravenous.device.peripheral.site.assessment.care.dressing.pdf#search='IV%20dressing%20change'. Accessed on 29/12/05.