Section 16 - Administration of Medicines by the Intravenous Route

The use of injectable medication has many health care benefits for patients of all ages, however the complexities associated with prescribing, preparing and administering injectable medicines means that there are greater potential risks for patients than for other routes of administration.

1. General Principles

1.1 Staff are required to comply with the principles of the CRAG Document - 'Good Practice Statement for the Preparation of Injections in Near-Patient Areas, Including Clinical and Home Environments '.
http://www.gov.scot/Publications/2002/12/16049/15908

1.2 All injections prepared in the near patient area by ward based staff must be administered immediately. Injections prepared in the near patient area by ward based staff must never be prepared in advance and stored for later use.

1.3 Staff must not administer medication that has been drawn into a syringe or container by another practitioner when not in their presence.

2. Prescriber's Responsibility

2.1 It is the prescriber's responsibility to ensure that the medicine to be given by the intravenous route is appropriate for this method of administration and for the vehicle in which it is to be given

2.2 The prescriber must ensure when they write prescriptions for this form of therapy that their instructions are complete, unambiguous and clear and include the vehicle for administration and rate of administration.

3. Nurse's Responsibility

3. 1 Nurses must be aware of their personal accountability and should not undertake this practice unless they have undertaken and passed the NHS Lanarkshire IV drug training programme.

3. 2 Before the preparation and administration of a drug additive for intravenous infusion/bolus, the nurse must ensure that the prescriber's written instructions are unambiguous and complete.

3. 3 A nurse must exercise professional judgement in determining the suitability of administration and must be prepared to seek further advice if necessary before administration.

3. 4 It is the responsibility of the nurse to be familiar with all NMC documents and local policies which relate to this practice.

4. Pharmacist's Responsibility.

4.1 Pharmacy will provide advice on all aspects of intravenous therapy as requested and should direct staff to appropriate literature and on-line sources for information.

4.2 Pharmacy has a role to play in monitoring prescriptions and in highlighting problems concerning safety, stability and compatibility.

5. Dosage Calculations for Administration by the Intravenous Route.

5.1 Two persons must always be involved in all aspects of administration of medicines when given by the intravenous route. When dosage calculations are involved these should be independently calculated and the dosage verified before administration.

5.2 Additional care is required for neo-natal and paediatric dosage calculations. (See Section 25).

6. Persons Authorised to Check Calculations and Medicines Administered by the I.V. Route.

6.1 Those persons authorised to check calculations and medicines being administered by the intravenous route. e.g.

(a) two doctors
(b) a doctor and a registered nurse/midwife who has been assessed as professionally competent for this role
(c) two registered nurses both who have been professionally prepared for this role.
(d) a pharmacist plus any one of the above.

Calculations must be checked independently by an authorised person prior to the administration of an intravenous drug, particularly for neonates/paediatrics. A record of multi step calculations carried out should be retained with medical or nursing notes.

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7. Persons Authorised To Make Additions

Medicines may be added to intravenous infusion fluids by:-

a) doctors
b) pharmacists
c) nurses (See para 8 below)

8. Category Of Nurses Allowed To Add Medicines To Intravenous Infusion Fluids.

8.1 Before undertaking such procedures all nurses must have successfully completed specific approved NHS Lanarkshire training on adding medicines to infusion fluids.

8.2 All registered nurses will be eligible to receive such training.

8.3 The registered nurse in charge must be satisfied that the nurse, having been trained, is proficient to add medicines to intravenous infusion fluids in the practical situation within a given speciality. He/she will ensure that registers are kept of all participants who have successfully completed the above training.

8.4 The form of training must be approved by the Director of Nursing and the Chief Pharmacist.

9. Authority Of The Nurse To Prepare And Administer Medicines By The Intravenous Route

The nurse's authority to add medicines to intravenous infusion fluids is restricted to the addition of one single medicine to:

- a standard infusion fluid container (bag/bottle) of appropriate volume for continuous or intermittent infusion.
- an appropriate sized syringe with or without diluent for continuous, intermittent or bolus injection via an existing cannula.

10. Intensive Care Areas

Nurses working in intensive care areas may be trained and authorised to give intravenous drugs by methods other than those listed in para 8 above. The training for this must reflect the higher risk involved and comply with the requirements of above.

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11. Midwives

11.1 Practising registered midwives, in the absence of a doctor and in an emergency, may administer any preparation They are authorised via Prescription Only Medicine (Human Use Order) 1997 SI 1997/1830

11.2 This should be documented in the case record and subsequently countersigned by a doctor.

12. Syringe Pumps/Drivers/Volumetric Pumps

12.1 Nurses who have successfully completed training in the use of syringe pumps and who have demonstrated their proficiency in the use of this equipment may administer medicines intravenously by this means, providing clear and unambiguous written directions are given on the appropriate prescription chart(s).

12.2 A second nurse who has been trained in the use of syringe pumps must check that the correct preparation in the prescribed dose is introduced into the syringe. Both nurses should check that the syringe is fitted to the correct patient's pump and that the infusion rate is set as prescribed.

12.3 The Charge Nurse will ensure that training records are kept of all nurses who have received training in the use of syringe pumps.

12.4 A similar procedure should be adopted for subcutaneous pumps.

12.5 All potential incompatibilities which may arise by mixing two / three drugs in a syringe should be checked before preparation.

13. Prescribing of Medicines to Be Added to Intravenous Infusion Fluids

13.1 Medicines which are to be added to intravenous infusion fluids must be entered legibly and indelibly, on the medicine prescription form along with the words "As Charted". The entry should be signed and dated by the prescriber.

13.2 The medicines and the fluid into which they are to be added must also be entered, clearly and completely on the Fluid (Additive Medicine) IV Therapy Prescription Chart and signed and dated by the doctor.

13.3 The prescription must clearly state:-

a. The name, strength and volume of the intravenous fluid to be administered.

b. The name and dose of any medicine(s) to be added to the intravenous infusion fluid.
c. In the case of a syringe pump, the diluent vehicle and the final volume in the syringe should be stated.
d. The rate or duration at which the resultant intravenous admixture or intravenous fluid is to be administered.
e. The time at which administration of the resultant intravenous admixture or the infusion fluid is to be commenced.

14. Labelling and Checking of Drugs Added to Intravenous Infusion Fluids

14.1 All containers must be clearly labelled using yellow intravenous drug additive labels. All sections of the label must be completed and countersigned by the person checking the addition.

14.2 All additions to intravenous infusion fluids, whether prepared by a doctor or a nurse, must be checked at the preparation stage by a registered nurse or by a doctor or by a pharmacist.

14.3 All infusions, whether or not they contain drugs, should be changed every 12 hours. Administration sets must be changed at least once in every 24 hours, or 72 hours if the line is filtered, e.g. epidural etc. (For patient controlled analgesia systems see separate protocol)

15. Records

15.1 A record of all additions made must be kept on the Fluid (Additive Medicine) IV Therapy Prescription Chart. The record must include the signature of the person who added the medicine to the fluid and the signature of the person who checked the addition.

15.2 A record of volume of intravenous infusion fluids given must be made, if relevant, on the fluid balance chart after the fluid has entered the patient.

15.3 The following data must be logged when administering intravenous drugs/fluids through an infusion pump.

a) The pump type and serial number
b) The name of the drug and diluent, strength and volume
c) The date and time at which a syringe change is made
d) Appropriate biochemical parameters, e.g. BMs, APTTs, INR, electrolytes
e) Rate of infusion
f) Volume infused or the volume remaining, depending on the type of pump used.