Brent NHS
Teaching Primary Care Trust
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Policy for the Administration of Intravenous Drugs and Management of Intravenous Devices in the Community

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CONTENTS

1. INTRODUCTION

1.1 Policy Statement

This policy is intended to aid Brent tPCT health care professionals (HCPs) in relation to the administration of drugs via the intravenous route and management of intravenous devices for adults and children in the community setting.

Community settings include:

- patients own homes/residential care home
- school/nursery
- community bedded areas e.g. Willesden Centre for Health & Care

This policy must be used in conjunction with the following policies/ guidelines/ PCT documents:

- Infection Control Policies (Brent tPCT intranet)
- Brent tPCT Policy for provision of facilities for Cardiopulmonary Resuscitation (Jan 2004)
- Nursing Policy for the Management of Anaphylaxis in the Community and Primary Care NP24 (July 2006) Currently being reviewed
- Medicines Policy PMMP10 (Brent tPCT, 2005) currently being reviewed
- Brent tPCT Policy for the Reporting and Management of Incidents (March 2008)
- Cold Chain Standards (Brent tPCT 2009)

This policy does not consider issues relating to the administration of :

- Chemotherapy (see Brent tPCT Policy for the Administration of Cytotoxic Therapy in the Community NP12, 2004)
- Patient controlled analgesia (PCAs)
-

1.2 Monitor and Implementation

This policy will be made known to all Trust employees, by placing it on Brents tPCT intranet and publish it in the Trusts e journal, Update.
The policy will be shared with the specialist forums that this policy applies to.

1.3 Evaluation

The policy will be evaluated yearly by the evaluation questions (see appendix 19),
To be filled in by 20% of the staff. This will be coordinated by the clinical leaders and the information will be fed into the Professional Nurses Forum.

1.4 Rationale:

Intravenous (IV) therapy is now an integral part of the majority of community nurses' professional practice.

Advances in intravenous technology which meet the clinical requirements of individual patients at the same time as suiting their lifestyles, and extended roles

for community nurses are making community based intravenous therapy an increasingly viable option.

The use of intravenous route for drug administration is not without risk and should only be used when:

- The clinical condition of the patient does not allow administration by another route e.g. oral or rectal
- The clinical condition of the patient requires the medicine administration to produce an immediate effect and/or required therapeutic levels
- The medicine is unavailable for administration by any other route
- Administration by intravenous injection is in the best interests of the patient.

The potential hazards and risks of IV therapy can be extremely serious and can include anaphylaxis, drug interactions and local or systemic infection. Patient safety, asepsis and comfort must be paramount.

The use of any intravenous medication should therefore be kept to a minimum. Alternatives to intravenous administration must be considered wherever possible.

1.5 Eligibility Criteria

Nurses will administer IV treatment to patients in non-bedded areas, providing set criteria have been met see appendix 2 and appendix 9.

2. TRAINING / EDUCATION

2.1 Nurses involved in any aspect of intravenous therapy have a responsibility to acquire and regularly maintain the necessary skills in order to ensure competent practice.
Brent PCT will provide training for the administration of intravenous drugs and management of intravenous devices. Staff should also then attend yearly updates, Community Children's Nurses will attend 2 yearly updates due to the frequency by which they practice iv administration.

2.2 Nurses must understand their responsibilities and carry out drug administration in line with the Guidelines for The Standards for Medicine Management (NMC, 2008) and accept accountability for their actions

2.3 Nurses must have attended a recognised course for IV administration of drugs followed by a period of supervised practice on a minimum of 2 patients bolus, 2 patients infusion within a period of 6 months after the training. See practical competency assessment (appendix17)

2.4 New staff joining the PCT who have received training from a previous employer must provide documentary evidence of this and will be required to undergo a competency assessment.(this framework is currently being developed).

2.5 In cases where the patient / care giver has agreed to undertake administration of intravenous therapy, the nurse must give clear written instructions on the administration and the possible side-effects of the medication to be given.

2.6 Any training and education to patient / care giver should be competency assessed and documented in accordance with The Code. Standards of conduct, performance and ethics for nurses and midwives.(NMC, 2008) and The Standards for Medicine Management (NMC, 2008).

2.7 All staff administering IV medication must be trained and competent in basic cardio-pulmonary resuscitation and treatment of anaphylaxis.

2.8 All staff giving IV medication or handling IV devices must receive the mandatory PCT Infection Control training as per PCT Policy.

3. PRESCRIBING OF MEDICINES

3.1 Prescribing of intravenous medications, Under the Medicines Act 1968 and the Misuse of Drugs Act 1971 is the responsibility of the authorised prescriber. The prescriber must provide clear precise written instructions regarding administration, detailing the name of the medicine, dose, rate, route and the dates of administration and the time over which the intravenous drug is to be administered with prescriber's signature.

3.2 All Intravenous medications must be prescribed on the Brent tPCT Medication Prescribing Drug Chart, or on the referring acute hospital drug chart in certain circumstances e.g. where community nurses and acute nurses are sharing the patient administration.

3.3 All nurses must have access to the manufacturers professional and patients Information Leaflet for each medicine prescribed, and provide/discuss this with the patient/carer.

3.4 Verbal orders for commencement of, or changes to intravenous medications, must not be taken. Changes to a prescription must either be signed directly by the prescribing doctor, or a new prescription written by the doctor.

4. DISPENSING OF MEDICINES

4.1 **Hospital Initiated Home Intravenous Therapy**
All IV medicines, diluents, and flushes will be dispensed by the discharging hospital pharmacy for the duration of the treatment course.

4.2 **Intravenous Therapy for Bedded Units:**
All IV medicines, diluents and flushes will be dispensed by the transferring hospital for 7 days, and then bedded unit pharmacy will supply remainder of course

4.3 **Anaphylaxis Packs**
Anaphylaxis packs containing epinephrine (adrenaline) injection 1mg in 1ml (1 in 1000) 3 x 1ml, syringes and needles are supplied to the community nurses in sealed containers from St Charles Hospital, and the bedded units from CMH

pharmacy The Nurse must ensure that an anaphylaxis pack is available at all times when administering intravenous drugs

4.4 The use of commercially available pre-prepared infusions with additives must be used wherever possible when additives are required.

4.5 IV medicines prescribed and supplied for an individual patient and become the patient's property. When no longer required, must not be used for another patient and should be returned to the pharmacy from where they were obtained if no longer needed.

5. CUSTODY, STORAGE AND TRANSPORTATION OF MEDICINES

5.1 For details of storage of Medicines in PCT sites Refer to Brent Medicines Policy NMMP 10 (2008)

5.3 Anaphylaxis drugs remain the property of the tPCT.

5.4 Anaphylaxis drug packs must be stored in a secure, clean and dry area at the health centre or bedded unit. Each community nurse will be responsible for carrying an 'in-date' kit on their person. There must also be anaphylaxis pack in each bedded area i.e. on each ward.

5.5 Community Nurses should give advice about the safe storage of medications within the home. Medicines should be stored out of the reach of children, in accordance with manufacturers' instructions, in a dry, clean area. They must be stored at the appropriate temperature and if this requires refrigeration they should be kept away from food in a sealed container. Advice should be given that medication must not be stored near the freezer compartment or in the door of the refrigerator.

5.6 Nurses should not routinely collect and transport medicines, except emergency drugs to be used in the event of anaphylaxis. If medicines are transported by staff they should be kept at the appropriate temperature, secured and out of reach by children. (Brent tPCT Cold Chain Standards PMMP 01, 2006).

6 INTRAVENOUS DRUG ADMINISTRATION

6.1 Prescription for IV Medication

6.1.1 The nurse administering the IV medication must be satisfied with the prescription, ensuring clear and unambiguous instructions stating:

- Patient's name, address, weight and date of birth
- Hospital/Patient number (bedded unit).
- The date treatment to commence and a review/completion date
- Name of medicine
- Strength (if applicable)
- Dose

- Name of diluent's (if required) and the volume, if not supplied in drug package.
- Frequency of administration
- Route of administration
- Known allergies
- Signed by a registered medical practitioner or another authorised prescriber
- Flushes e.g. saline, heparin sodium 100 units/ml.

For Infusions this additional information should be included

- Volume
- Start time
- Duration of infusion

6.1.2 The nurse should delay administration and seek immediate advice if there are any doubts regarding the prescriber's instructions, the patient's condition or suitability of the IV medication to be administered in the community.

6.2 **Knowledge of the drug to be administered**

6.2.1 The nurse has a responsibility to ensure that he/she has an understanding of the proposed medicine prior to administration including:

- The recommended dose
- Indication
- Route
- Reconstitution
- Most appropriate method of administration
- Recommended time over which the drug should be administered
- Potential effects or side effects for the patient
- Contraindications
- Interactions/incompatibilities
- Any special requirements e.g. Blood monitoring
- Health & safety issues

6.2.2 Additional information can be obtained from current edition of British National Formulary. Technical information on intravenous medicines can be obtained from North West London Hospitals Medicines Information Dept (Willesden Hospital patients) or St Charles Hospital Medicine Information Department (community patients) and also accessible at www.emc.medicines.org.uk for individual summaries of product characteristics (SPC's)

6.2.3 Where a medicine is prescribed for use outside the product licence the nurse must clarify with the prescriber and / or medicines information pharmacist

6.3 Drug Calculations

6.3.1 The nurse must calculate the dosage for drug administration (e.g. calculating the dose and volume of drug to draw up or calculating the drip rate for an infusion)

and the calculations must be documented in the patient's notes. Full details of the drug, (including: drug strength & dose, name, strength and volume of diluents, frequency of administration and time over which the drug is to be given) must be listed and checked and signed. For Controlled Drugs refer to the Misuse of Drugs Regulations 1985 and the Misuse of Drugs (safe custody) Regulations 1973)

6.3.2 When the nurse administers the drug in the patient's home, he/she must carry out an independent calculation and check against what is already written in the patients care plan. If there is any discrepancy, he / she must not give the medication, but contact the referring team. For Controlled Drugs refer to the Misuse of Drugs Regulation 1985 and the Misuse of Drugs (safe custody) Regulations 1973.

6.4 Preparation of the Drug

6.4.1 The intravenous medication must be prepared aseptically using a non-touch technique immediately prior to administration in accordance with the manufacturer's instructions for reconstitution and dilution.

6.4.2 The nurse must carefully examine all IV medicines and fluid containers ensuring that:

- they are the correct drug / diluents / IV fluid
- they appear free from particles, contamination and faults
- they have not passed their expiry dates

6.4.3 For patients who are left unattended during the infusion, and when medication is to be added to an infusion, the nurse must attach a signed additive label to the syringe or infusion bag which clearly states the patient's name, the drug, dose added, date, time of the addition, period of administration

6.4.4 Any surplus of the prepared drug or any unused drug must be discarded according to current Brent tPCT Waste Policy. Medicines must never be disposed of into household drainage. e.g. down the sink/toilet

6.5 Administration of intravenous medication

6.5.1 All drugs administered via the intravenous route must be administered under strict aseptic conditions using the non-touch technique

6.5.2 For administration of intravenous medication refer appendices 4, 5 and 11

6.5.3 Drugs may be administered by bolus injection, continuous infusion or intermittent infusion and must be initiated only against a written order by a medical practitioner. Also see Brent tPCT Medicines Policy (2008).

6.5.4 The nurse administering the intravenous medication is responsible for ensuring any pump / control device are in appropriate working order and serviced regularly.

6.6 Intravenous Parenteral Nutrition (IPN/TPN)

6.6.1 Parenteral nutrition should be administered according to the order of the medical practitioner prescribing the regime.

6.6.2 Infusion specific filtration and electronic infusion pump/device must be used during the administration of this therapy, organised by the discharging hospital.

6.6.3 Administration sets used for parenteral nutrition must be changed every 24 hours and immediately upon suspected contamination or when the integrity of the product or system has been compromised. For practice criteria please refer to Appendix 15.

6.7 Controlled Drugs

For administration of controlled drugs refer to Brent tPCT Controlled Drugs in Primary Care Policy (2008).

7. INTRAVENOUS ACCESS DEVICES

All nurses must follow this tPCT policy when caring for an intravenous access device. However, if the patient is self maintaining their IV device, they should follow the protocol/guidelines provided by their referring hospital.

The discharging hospital is responsible for supplying all the drugs, diluents and flushes for the course of the treatment.

7.1 Infection control

7.1.1 Needle-free systems and luer-lock syringes must be used on all IV devices. IV systems should be opened as infrequently as possible to minimise bacterial contamination.

7.1.2 The injection port or catheter hub of any IV line must be decontaminated with a 70% alcohol and chlorhexidine swab before and after each time it has been used to access the system.

7.1.3 Hand washing using a antibacterial agent such as chlorhexidine (or use of alcohol gel) must be performed both immediately before, and after any procedure involving an IV line (see Policy ICC 01).

7.1.4 Administration sets in continuous use must be changed every 72 hours. However, if used for blood or blood products, they must be changed every 12 hours.

7.1.5 In bedded areas (and where a patent is in the community and the nurse is not present) all administration sets must be labelled with the patient's name and date and time it was put into use.

7.1.7 A Sterile, transparent, semi-permeable polyurethane dressing must be used to cover an IV site. This should be replaced if it has become loosened or moisture has collected under the dressing. The dressing must be changed at least every 7

days for central lines. IV peripheral lines should be resited every 72 hours however the responsibility remains with the prescriber.

7.1.8 However if the patient has profuse perspiration or if the cannula / catheter site is oozing or bleeding, a sterile gauze dressing is preferable. A gauze dressing needs to be changed when damp, loosened or soiled.

7.1.9 Single-use sachets of aqueous chlorhexidine can be used for skin cleansing at dressing changes. However in preference if allowed within the manufacturer's instruction for the iv device skin cleansing should be performed using 0.5% chlorhexidine in 70% alcohol

7.1.10 Peripheral IV lines – a clean technique must always be used when handling any peripheral IV device. Clean examination gloves should be worn.

7.1.11 Central IV lines – a sterile technique must always be used when handling a central IV line. Sterile gloves must be worn.

7.1.12 All procedures for handing all intravenous lines must incorporate a non-touch technique i.e. the open end of a device or syringe must never be touched

7.2 **Peripheral cannula** (for short term intravenous use only)

If the course of intravenous therapy is predicted to be longer than 72 hours an alternative line should be used.

7.2.1 The nurse must:

- Check the patency of any device before and after administration and report / act on any concerns
- Ensure the removal of the cannula at the end of the course of treatment.
- Ensure the patient is aware of the measures to take in the event of displacement and has the relevant information sheet / patient information leaflet (See Appendix 3 for children and 10 for adults)

7.2.2 Whilst the cannula is in situ, the site must be observed for signs of infection/ phlebitis at least daily using the Jackson Phlebitis Scale (1998)
The subsequent score and action(s) taken (if any) must be documented.
(See appendix 1)

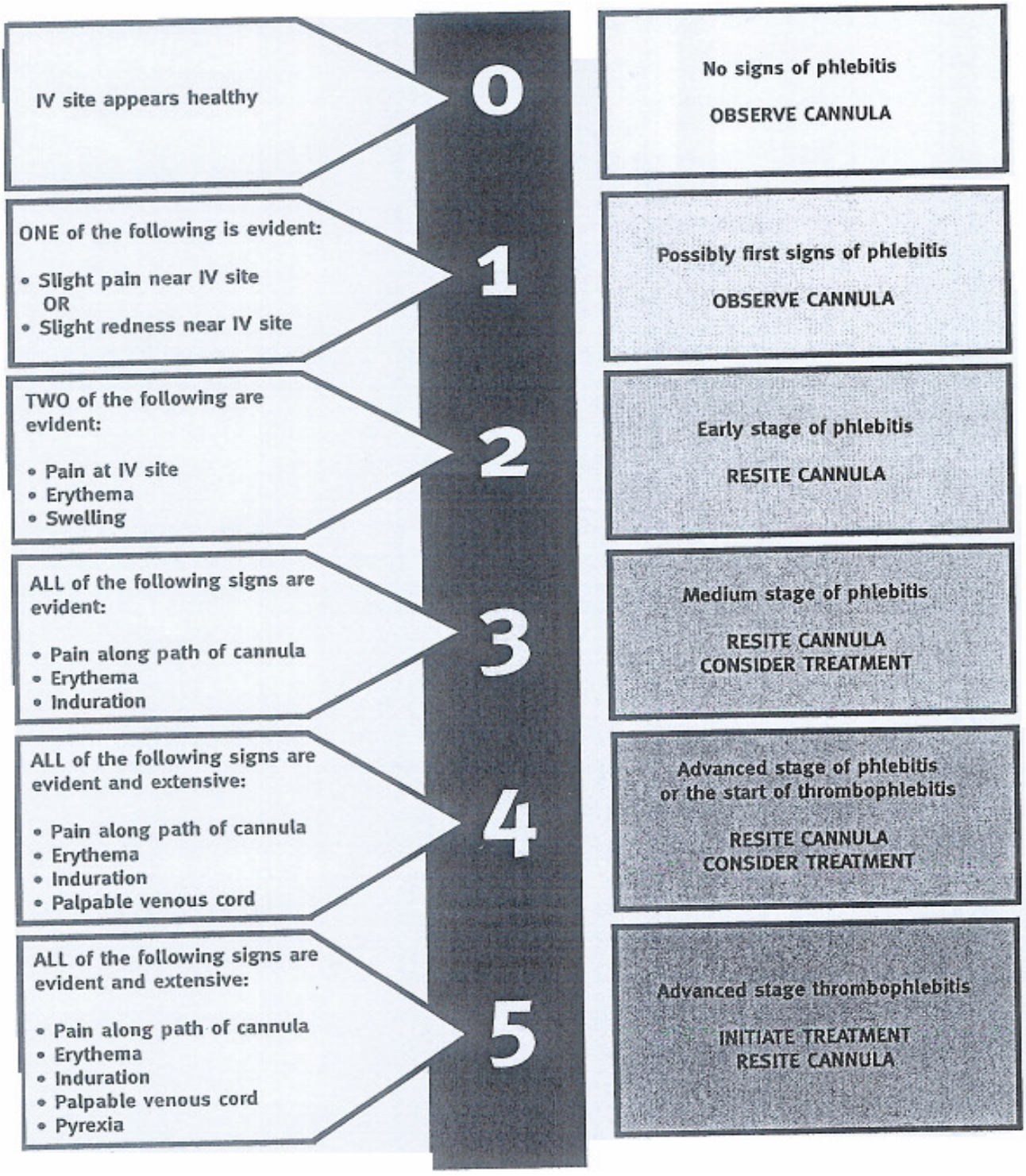
The cannula site must also be observed when:

- bolus injections are administered
- IV flow rates are checked or altered
- solution containers are changed

The incidence of infusion phlebitis varies but the following good practice points may assist in reducing the incidence of infusion phlebitis:

- Observe cannula site at least daily
- Secure cannula with a transparent semi permeable intravenous dressing

- Replace loose and contaminated dressings
- Cannula must be inserted away from joints whenever possible
- Use a clean, technique when handling the device
- The cannula should be resited at least every 72 hours (however the responsibility remains with the prescriber)
- Plan and document continuing care
- Use the smallest gauge cannula most suitable for the patients need
- Replace the cannula at the first indication of infusion phlebitis (stage 2 on the Phlebitis Scale)


IV site appears healthy
0
No signs of phlebitis
OBSERVE CANNULA
ONE of the following is evident:
• Slight pain near IV site
OR
• Slight redness near IV site
1
Possibly first signs of phlebitis
OBSERVE CANNULA
TWO of the following are evident:
• Pain at IV site
• Erythema
• Swelling
2
Early stage of phlebitis
RESITE CANNULA
ALL of the following signs are evident:
• Pain along path of cannula
• Erythema
• Induration
3
Medium stage of phlebitis
RESITE CANNULA
CONSIDER TREATMENT
ALL of the following signs are evident and extensive:
• Pain along path of cannula
• Erythema
• Induration
• Palpable venous cord
4
Advanced stage of phlebitis
or the start of thrombophlebitis
RESITE CANNULA
CONSIDER TREATMENT
ALL of the following signs are evident and extensive:
• Pain along path of cannula
• Erythema
• Induration
• Palpable venous cord
• Pyrexia
5
Advanced stage thrombophlebitis
INITIATE TREATMENT
RESITE CANNULA

7.2.3 Re-cannulation must only be performed by a nurse/other medical practitioner who has received theoretical and practical training and been assessed as competent in cannulation.

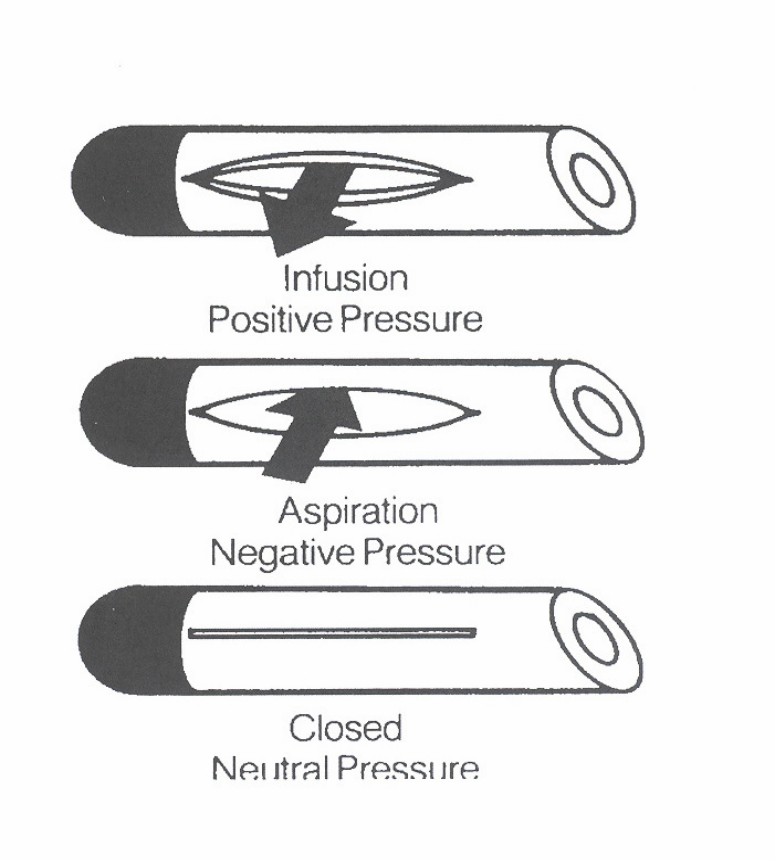
7.3 Central venous catheters

A central venous catheter is an indwelling catheter, which lies within the superior or inferior vena cava, right atrium or a large vein leading to these vessels. The discharging hospital is responsible for providing the patient with written information regarding the device and any emergency care.

7.3.1 Types of Central Venous Access Devices

There are various types of central venous catheter but the most common are:

- **Peripherally inserted central catheters (PICC)** – inserted peripherally into large veins of upper or lower limbs, usually via the antecubital fossa, and advanced into the central veins. These can be used for several weeks to several months of treatment. There will be no clamps on the lumens if there is a ***Groshong valve*** feature. Groshong Valve – is a 3-position pressure sensitive valve at the internal tip of the catheter.



1. Infusion (Positive Pressure) will open the valve outwards.
2. Aspiration / Vacuum (Negative Pressure) causes the valve to open inward allowing blood aspiration.
3. When not in use (Neutral Pressure) the valve remains closed restricting blood back-flow into the catheter or air embolism.

NB. As the closed valve prevents blood, which could subsequently clot, from re-entering the catheter there can be less need for heparinisation.

- **Skin tunnelled catheters** – inserted either in theatre or under X-ray guidance with general anaesthetic or local anaesthetic with sedation. They are suitable for months to years of treatment. The sub clavian vein is usually preferred. They are self fixed with a Dacron cuff within the tunnel to secure the line in place and reinforce the barrier to infection. The lumens will have clamps if there are internal open tips. The openings in the internal tip will be pre-staggered to allow drugs/infusions to enter the bloodstream separately. These catheters are associated with significantly lower catheter related infection rates, but if infection occurs, the prognosis is poor; consequently prompt removal is always necessary.

- **Implantable Ports** – A port attached to a silastic catheter is inserted under general anaesthetic with the port sutured to the chest wall under the skin. Requires accessing through the skin by insertion of a needle into the port. These are associated with the lowest catheter related infection rates.

7.3.2 Potential Complications of Central Venous Catheters:

- **Venous Air Embolism -** The occlusion of a blood vessel by the presence of air bubbles. Can develop whenever the external pressure to an open vein exceeds the central venous pressure. Air can be drawn into the major vein by negative intrathoracic pressure. The times of the greatest risk are at insertion or removal of the catheter and when breaking the closed system when flushing, changing tubing, bungs etc. A patient can become suddenly dyspnoeic, hypotensive, tachycardic, confused, anxious and may quickly lose consciousness and arrest.

- **Thrombosis/Blockage -** The formation of a blood clot within the catheter, heart or an artery or vein caused by stasis, coagulation of blood and possible vessel wall injury from the catheter. Common thromboses are seen in the neck, chest and arms. Signs and symptoms can include oedema of the fingers, arms, hands, face and/or shoulders, vein distension, aching and tenderness, tingling and numbness, severe pain, skin colour and/or temperature changes, inability to withdraw blood and/or flush the catheter.

- **Infection -** Infection can occur at the exit site (local) or within the lumens of the catheter (systemic) and can lead to septicaemia. Infection should be suspected in any patient with a central venous catheter who develops pyrexia.

- **Splitting/breakage/accidental removal of line –** the line may split or break anywhere along its length or in exceptional circumstances can become dislodged. This can lead to bleeding or septicaemia. Each patient must have a safety kit provided by either the acute trust or the community nurse. Bedded services must have a safety kit on each ward. The discharging nurse or community nurse must ensure the patient/carer has been instructed in emergency care of the central line

Safety kit includes:

Sterile gloves
Gauze
Spare bungs
Wipes impregnated with alcohol and chlorhexidine
2 disposable plastic clamps (scissor type)
Transparent semi-permeable, polyurethane dressing

For recommended action in the event of complications see appendix 16.

8. ADVERSE REACTIONS/ANAPHYLAXIS

8.1 Any adverse or suspected adverse reaction must be reported to the prescriber. In the bedded unit a member of the medical team must be informed as soon as possible.

8.2 The details of the adverse reaction should be documented in the patient's records and reported to the Committee on Safety of Medicine using the Yellow Card which can be found in the current British National Formulary.
An incident form must also be completed according to the Brent tPCT Policy for the Reporting and Management of Incidents (2008).

8.3 The nurse/carer/patient administering any intravenous drug must monitor the patient's condition during and following intravenous drug administration, observing for any adverse reactions. If any adverse reaction occurs during administration, the infusion/injection must be stopped immediately.
The nurse/carer/patient must act immediately if there is any sign of adverse reaction following administration, and contact the prescriber/nurse for advice.

8.4 All nurses must be familiar with Brent tPCT anaphylaxis policies.

8.5 In the event of cardiopulmonary arrest the nurse must initiate basic Cardio Pulmonary Resuscitation (CPR) in accordance with Brent tPCT Cardio Pulmonary Resuscitation Policy (2004) and call 999.

9. MAINTAINING RECORDS/DOCUMENTATION

9.1 The nurse must make a clear, accurate and immediate record of all medicine administered, intentionally withheld or refused by the patient, ensuring that all written entries and the signature are clear and legible (NMC Guidelines on record Keeping, 2005).

9.2 If a prescribed medicine has been omitted, then the omission and the reason must be recorded. If the medicine is not administered, then the Prescriber must be informed. The nurse must contact the Prescriber immediately on discovery of an omission to ensure that any risk to the patient is minimised and appropriate action is taken to ensure patient safety.
In bedded areas, the appropriate doctor should be informed.

10. REPORTING OF SUSPECTED AND ACTUAL DRUG ERRORS

10.1 The aim of reporting and investigating both suspected and actual drug errors is to enable the Trust to learn from these incidents and prevent any recurrence and not to apportion blame. (See Brent tPCT Policy for the Reporting and Management of Incidents, 2008)

10.2 The nurse must contact the Prescriber immediately on discovery of an error to ensure that any risk to the patient is minimised and appropriate action is taken to ensure patient safety. The GP should be informed.

10.3 Brent tPCT staff should report errors or suspected errors in accordance with local policy (IR1). See Brent tPCT Policy for the Reporting and Management of Incidents, 2008.

11. REFERENCES

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APPENDICES

APPENDIX 1

Brent NHS
Teaching Primary Care Trust

Peripheral IV Cannula Record
(Please complete a separate sheet for each cannula inserted)

Patient Name: …… DOB …….. MPI/Hospital No : ……

If inserted in the community:

Date & time inserted: …….. Inserted by:

Cannula size: …….. Cannula lot number

Every patient with a peripheral IV cannula must be observed for signs of infection at least every day using the following scale, allocated an appropriate score and appropriate action taken.

JACKSON PHLEBITIS SCALE		
IV site appears healthy	**Score 0**	No signs of phlebitis OBSERVE CANNULA
One of the following is evident : • Slight pain near IV site OR • Slight redness near IV site	**Score 1**	Possibly first signs of phlebitis OBSERVE CANNULA
Two of the following are evident : • Pain at IV site • Erythema • Swelling	**Score 2**	Early signs of phlebitis RESITE CANNULA
All of the following are evident : • Pain along path of cannula • Erythema • Induration	**Score 3**	Medium signs of phlebitis RESITE CANNULA CONSIDER TREATMENT
All of the following are evident and extensive : • Pain along path of cannula • Erythema • Induration • Palpable venous cord	**Score 4**	Advanced stages of phlebitis or start of thrombophlebitis RESITE CANNULA CONSIDER TREATMENT
All of the following are evident and extensive : • Pain along path of cannula • Erythema • Induration • Palpable venous cord • Pyrexia	**Score 5**	Advanced stage of thrombophlebitis RESITE CANNULA INITIATE TREATMENT

Date / Time	Score	Action taken	Signature

CHILDRENS NURSING

APPENDIX 2

Brent NHS
Teaching Primary Care Trust

REFERRAL CRITERIA TO THE COMMUNITY CHILDREN'S NURSES FOR A CHILD NEEDING INTRAVENOUS MEDICATION

CHILD'S NAME……DOB…….

**MPI……WEIGHT…….. kg DATE TREATMENT ENDS ……..... **

0-16 years old	**YES/NO**
Fit for discharge	**YES/NO**
Person with parental responsibility is fully informed and consents to treatment	**YES/NO**
Family informed of the possible need to return to referring hospital for recannulation if necessary	**YES/NO**
Access to warm running water	**YES/NO**
Maximum twice daily administration of IV therapy at home	**YES/NO**
Drug infusion duration to be no longer than 60 minutes	**YES/NO**
Child has received at least 2 doses of the medication within the hospital setting (risk of anaphylaxis)	**YES/NO**
Referring medical team has accepted responsibility for the Child and will provide 24 hour advice	**YES/NO**
Any history of anaphylaxis?	**YES/NO**
Adequate venous access	**YES/NO**
ACCEPTED BY CCN TEAM FOR IV THERAPY	**YES/NO**

Signature of nurse accepting referral ……..

Print Name & Designation ……..

Date of referral……..

APPENDIX 3

Brent NHS
Teaching Primary Care Trust

PATIENT INFORMATION LEAFLET

INTRAVENOUS DRUG ADMINISTRATION FOR CHILDREN

INFORMATION FOR CHILDREN AND THEIR FAMILIES AT HOME WITH PERIPHERAL CANNULAS

It has been decided that your child may continue their intravenous (into a vein) treatment at home. In order to enable us to give your child their treatment into a vein it is necessary for them to have a small hollow plastic tube inserted into their hand/arm. This plastic tube is called a cannula.

The cannula goes through their skin and into a vein where it stays to allow us to give their medicines directly into the bloodstream. They will have a waterproof dressing over the cannula to help keep it in place.

As the cannula is sitting in a vein there is a risk of bleeding if the cannula accidentally falls out. THERE IS NO NEED TO PANIC IF THIS HAPPENS. Usually any bleeding will stop within a few minutes if pressure is applied to the bleeding point.

IF THE CANNULA FALLS OUT:

- Apply pressure to the area with cotton wool or a tissue
- Maintain this pressure until the bleeding has completely stopped
- Once the bleeding has stopped apply a plaster
- Contact the hospital where the treatment was started to arrange for review.

HOSPITAL……..TEL. NO……

IF THE BLEEDING DOESN'T STOP:

- Keep applying pressure to the area
- Lift their arm above their head
- Go to your nearest Accident and Emergency Department at your nearest hospital.

REMEMBER TO TELL THE DOCTOR AND TO INFORM YOUR COMMUNITY CHILDREN'S NURSE TEL: 0208 453 2125

APPENDIX 4

Brent NHS
Teaching Primary Care Trust

CHILDREN'S COMMUNITY NURSING TEAM
CORE CARE PLAN – Intravenous drugs

Name…….DOB……..…Sex: M/F MPI No:……..

Aim of care: To facilitate early discharge of medically stable children requiring intravenous medication

CARE BY CCN	DATE, SIGN AND PRINT NAME AND DESIGNATION
Before visit: Two nurses **must** calculate and document dosage and method of administration Ensure anaphylaxis pack available (check expiry date) Ensure adequate equipment available, including sharps box Telephone carer to ensure they have been given a drug chart, drugs, flushes and diluents Ensure you have access to telephone	
Administration: Check child's identity with parent/carer and drug chart Explain procedure to child and family using appropriate language Check medication against child's prescription and refer to drug information leaflet as needed Check expiry date of all medications and diluents Wash hands and put on plastic apron Clean work area with alcohol impregnated swab Open equipment on to sterile field Wash hands, dry thoroughly and use alcohol gel. Draw up prescribed medication and flushes using a blue needle (23g) Clean needle-free injection port with a swab impregnated with alcohol and chlorhexidine and allow to dry Flush intravenous access line with 1-2mls 0.9% sodium chloride to check patency Slowly administer medication according to the manufacturers instructions and the prescription, observing site at all times for signs of extravasation Observe child for signs of adverse drug reaction After giving each drug, flush intravenous access line with 1-2mls of 0.9% sodium chloride Dispose of sharps and equipment safely and in accordance with local policy Wash hands and then sign drug chart	

If using Central Venous Access Device refer to appropriate care plan

APPENDIX 5

Brent NHS
Teaching Primary Care Trust

Name……DOB…….. Sex: M/F
Weight……MPI No:……

CARE BY CCN	**DATE, SIGN, PRINT NAME AND DESIGNATION**
DRUG NAME AND DOSE……. AMPOULE CONTAINS…….. ADD……..MLS OF ……(Diluents as stated on drug information leaflet) DRAW UP……MLS OF PREPARED DRUG SOLUTION FURTHER DILUTION IF REQUIRED WITH…… ADMINISTER OVER …….MINUTES	**DATE:** **1. ……..** **……** **2……..** **……**
DRUG NAME AND DOSE……. AMPOULE CONTAINS…….. ADD……..MLS OF …….. (Diluents as stated on drug information leaflet) DRAW UP……MLS OF PREPARED DRUG SOLUTION FURTHER DILUTION IF REQUIRED WITH…… ADMINISTER OVER …….MINUTES	**DATE:** **1. ……** **……** **2. ……** **……**

References:

Great Ormond Street Hospital for Children (1997) Care of Central Venous Access Devices in Paediatric Oncology & Haematology
Royal College of Nursing (2005) Standards for Infusion Therapy
Royal College of Nursing (2001) Administering Intravenous Therapy to Children in the Community Setting

Brent NHS
Teaching Primary Care Trust

CHILDRENS COMMUNITY NURSING TEAM
CORE CARE PLAN – CARE OF A CHILD WITH A HICKMAN LINE

Child's name……DOB……..MPI NO……..Problem No…….

Child has a Hickman line in situ and requires regular blood sampling and care of exit site

Aims of Care: Hickman line will be accessed using a non-touch technique, remain patent and free from infection
Blood samples will be taken as required and results sent to appropriate Doctor
Hickman line exit site remains clean and free from infection

CARE BY MAIN CARER	CARE BY CCN
Carer to obtain prescription from GP and collect supplies from Pharmacy when dispensed Parents to store equipment safely and out of child's reach	Order drugs/equipment from GP as required **Blood sampling and flushing of line:** **Equipment required:** Sterile dressing pack Sterile gloves 10ml luer-lock syringes as needed Blue needles 23g 0.9% sodium chloride for injection Heparinised saline (10iu/ml) Wipes impregnated with alcohol and chlorhexidine Bungs Blood bottles

CARE BY MAIN CARER	CARE BY CCN
	Method: 1. Use strict aseptic technique 2. Wash hands and dry thoroughly 3. Prepare work surface 4. Open sterile pack and prepare equipment 5. Wash hands, dry thoroughly and use alcohol gel. 6. Put on sterile gloves 7. Draw up 10mls of 0.9% Sodium Chloride and required amount of heparinised saline (10iu/ml) 8. Clean bung with an wipe impregnated with alcohol and chlorhxidine, allow to dry and attach empty syringe 9. Open clamp, and aspirate 3mls of blood 10. Close clamp, disconnect syringe and discard 11. Attach empty syringe, open clamp and aspirate required amount of blood 12. Close clamp, disconnect syringe and decant blood into sample bottles 13. Open clamp, flush the catheter with 5-10mls Sodium Chloride 0.9%. Closes clamp 14. Clean end of catheter with an alcohol and chlorhexidine wipe and attach new bung. This must be changed weekly. **If there is a double lumen line insitu, flush second lumen as above.** 15. Dispose of equipment and sharps safely 16. Wash hands and then sign drug chart **Changing dressing:** **Equipment:** Sterile dressing pack/gauze Sterile glove Single use sachet of aqueous chlorhexidine solution or alcoholic chlorhexidine if patient able to tolerate and if allowed in the manufacturers instructions of the iv device.

Safety kit should accompany child at all times, and anyone caring for child should be taught how to manage split or displaced line.	Transparent, semi-permeable dressing Steristrips **Method:** 1. Wash hands 2. Open sterile pack and prepare equipment 3. Put on gloves and remove and discard old dressing 4. Wash hands, dry thoroughly and use alcohol gel 5. Put on gloves. 6. Clean site working from the inside to outside, dealing with the cleanest parts first 7. Allow chlorhexidine to dry, secure line in a loop using steristrips. Apply dressing **How to manage a split or displaced line:** **Equipment for safety kit:** Clean gloves Gauze Spare bungs Wipes impregnated with alcohol and chlorhexidine 2 blue clamps Transparent, semi-permeable dressing **Method:** 1. If line splits, clamp line between chest and the break 2. Wrap the transparent semi-permeable dressing around the break to keep it clean 3. Take child to local hospital 4. If bung becomes displaced, make sure the clamp is closed, wash hands and clean end of line with alcohol and chlorhexidine wipe and replace with new bung.

References:

Dougherty L. and Lister S. (2004) The Royal Marsden Hospital Manual of Clinical Procedures pages 750-754
Bravery K and Hannan J (1997) The Use of Long Term Central Venous Access Devices in Children *Paediatric Nursing* 9 (10) 29-37

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CHILDRENS COMMUNITY NURSING TEAM
CORE CARE PLAN – GROSHONG PERIPHERALLY INSERTED CENTRAL CATHETER (PICC)

Child's Name…….DOB…….Problem no. …….MPI no: ……..

PICC line in-situ and requires regular blood sampling.

1 Aims of care: PICC line will be accessed using a sterile technique, remain patent and free from infection
Blood samples will be taken as required and sent to appropriate Doctor
PICC line exit site remains clean and free from infection

CARE BY MAIN CARER	CARE BY CCN
Carer to obtain prescription from GP and collect supplies when dispensed from their pharmacy. Parents to store equipment safely and out of child's reach	Order drugs/equipment from GP **Equipment required for blood sampling:** Sterile dressing packs Sterile gloves 10ml luer lock syringes 0.9% sodium chloride for injection Wipe impregnated with alcohol and chlorhexidine Bungs Blue needles 23g

CARE BY MAIN CARER	CARE BY CCN
	Method 1. Use strict aseptic technique 2. Wash hands and dry thoroughly. 3. Prepare work surface 4. Open sterile pack and prepare equipment 5. Wash hands, dry thoroughly and use alcohol gel. 6. Put on sterile gloves 7. Draw up 10mls 0.9% Sodium Chloride in luer lock syringe and set aside 8. Clean bung with alcohol and chlorhexidine impregnated wipe, allow to dry. 9. Attach empty syringe to bung.. 10. Pull back syringe plunger 1-2mls pausing for 2 seconds to allow catheter value to open and blood to flow into catheter. Slowly continue to aspirate 5mls of blood. 11. Disconnect syringe and discard. 12. Attach an empty syringe and aspirate as per step 5 to withdraw amount of blood sample required. 13. Disconnect syringe and attach Sodium Chloride filled syringe. 14. Flush catheter with 10mls 0.9% Sodium Chloride, infusing last 0.5 mls as the syringe is withdrawn from the bung (this helps prevent a vacuum which can pull a small amount of blood into tip of catheter and cause occlusion) 15. Clean bung with chlorhexidine and alcohol impregnated wipe 16. Dispose of sharps and equipment 17. Wash hands

CARE BY MAIN CARER	CARE BY CCN
	To maintain catheter patency : If blood samples are required less than weekly, PICC requires flushing every 7 days. **Equipment** Sterile dressing pack Wipe impregnated with alcohol and chlorhexidine 10ml syringe Blue needle 23g Sodium Chloride 0.9% for injection Sterile Gloves **Method** 1. Use a strict aseptic technique 2. Wash hands and dry thoroughly 3. Prepare work surface 4. Open sterile pack and prepare equipment 5. Wash hands, dry thoroughly and use alcohol gel. 6. Put on sterile gloves 7. Draw up 5mls Sodium Chloride 0.9% 8. Clean bung with alcohol impregnated wipes, allow to dry 9. Attach syringe filled with Sodium Chloride 0.9% to bung. 10. Inject Sodium Chloride 0.9%, infusing last 0.5ml as the syringe is withdrawn and disconnected (Helps prevent a vacuum which can pull a small amount of blood into tip of catheter)

CARE BY MAIN CARER	CARE BY CCN
	To change PICC dressing change weekly : **Equipment** Transparent Semi-permeable dressing Steristrips Sterile dressing pack Single use aqueous chlorhexidine sachet or alcoholic chlorhexidine if patient able to tolerate and if allowed in manufacturers instructions of iv device Scissors Sterile gloves Bandage Tape **Procedure** 1. Use a strict aseptic technique 2. Wash hands and dry thoroughly 3. Prepare work surface 4. Open sterile pack and prepare equipment 5. Put on gloves and remove old dressing, discard and remove gloves 6. Wash hands, dry thoroughly and use alcohol gel. 7. Put on new sterile gloves 8. Clean exit site with Chlorhexidine and allow to dry. 9. A suture wing will be attached to the PICC to hold catheter in place 10. Apply steristrip close to exit site to reduce any movement of line 11. Loop catheter and secure with semi permeable film dressing. 12. Bandage to prevent accidental damage and dislodgement.

CARE BY MAIN CARER	CARE BY CCN
Safety kit should accompany child at all times, and anyone caring for child should be taught how manage split line.	**How to manage a split line:** **Equipment:** Clean gloves Gauze Spare bung Wipes impregnated with alcohol and chlorhexidine 2 blue clamps Transparent, semi-permeable dressing **Method:** 1. If line splits, clamp line between chest and split 2. Wrap the transparent dressing around the split 3. Take child to local hospital 4. If bung becomes displaced, wash hands, clean end of line with alcohol and chlorhexidine impregnated wipe and replace with new bung

References:

IV Team, Great Ormond Street Hospital, Safety Aspects for PICCs (2001)
Bravery K and Hannan J (1997) Care of Central Venous Access Devices in Paediatric Oncology and Haematology

CHILDRENS COMMUNITY NURSING TEAM
CORE CARE PLAN – Care of a child with a portocath

Child's Name:……DOB……..MPI No……Problem No…….

Portacath/Gripper needle size……..

Aim of care: 1) Portacath will be accessed using a sterile technique, remain patent and free from infection
2) Blood samples to be taken as required and results sent to appropriate doctor

CARE BY MAIN CARER	CARE BY CCN	DATE, SIGN AND PRINT NAME
Carer to obtain prescription from GP and collect supplies from Pharmacy when dispensed. Ametop is to be applied over port area under adhesive dressing at least 30 minutes prior to procedure. Parents to store equipment safely and out of child's reach.	Order drugs/equipment from GP as required. Removed Ametop cream using clean tissue. **Equipment** Sterile dressing pack Sterile gloves 10ml luer lock syringes as needed Blue needles 23g Winged infusion set of appropriate size 0.9% Sodium Chloride for injection 4mls Heparinised Saline (100u/ml) Single use aqueous chlorhexidine sachet or alcoholic chlorhexidine if patient able to tolerate and if allowed in manufacturers instructions of intravenous device.	

CARE BY MAIN CARER	**CARE BY CCN**	**DATE, SIGN AND PRINT NAME**
	Wipe impregnated with alcohol and chlorhexidine Bung and transparent semi-permeable dressing if needle remaining in situ **<u>Method</u>** Wash hands thoroughly. Use a strict aseptic technique. Prepare work surface and open sterile dressing pack and equipment. Wash hands, dry thoroughly and use alcohol gel Put on sterile gloves. Draw up 10mls 0.9% Sodium Chloride and prime winged infusion set. Draw up further 10mls 0.9% Sodium Chloride. Draw up 4mls Heparinised saline (100u/ml). Clean skin over port using gauze soaked in Chlorhexidine Gluconate. Clean outwards using a circular motion over an area of 4-5cms in diameter. Allow to dry. Stabilise port and insert needle firmly at an angle of 90% until you feel the needle hit against the back of the port. Pull back on syringe plunger until blood is seen in line. Flush with 3-5mls Sodium Chloride to ensure patency. Clamp line. Connect empty 10ml syringe and withdraw 3-5mls blood and discard. Connect 2nd empty 10ml syringe and withdraw required amount of blood. Flush line with 5-10mls 0.9% Sodium Chloride	

CARE BY MAIN CARER	CARE BY CCN	DATE, SIGN AND PRINT NAME
	Flush with 4mls Heparinised saline and remove winged infusion set whilst injecting final 0.5ml, remember to stabilise and support port whilst removing. If winged infusion set is to remain in situ flush as above and clamp whilst injecting final 0.5mls. Secure needle in place with transparent semi-permeable dressing and ensure bung is in position. Clean bung with alcohol and chlorhexidine wipe Dispose of equipment and sharps safely. Wash hands Document procedure in notes.	

Care plan negotiated with parent/carer/child? YES/NO Date……

Carers signature (if applicable)……

Print name……..

References:

Bravery K. and Hannan J. (1997) Care of Central Venous Access Devices in Paediatric Oncology and Haematology. Great Ormond Street Hospital.

Bravery K. and Hannan J. (1997) The Use of Long-Term Central Venous Access Devices in Children. *Paediatric Nursing* 9 (10) 29-37.
Dougherty L. and Lister S. (2004) The Royal Marsden Hospital Manual of Clinical Procedures. P724-773.

NICE (2003) Prevention of Healthcare Associated Infection in Primary and Community Care – Care of Patients with Central Venous Catheters

Brent NHS
Teaching Primary Care Trust

ADULT NURSING

APPENDIX 9

Brent NHS
Teaching Primary Care Trust

REFERRAL CRITERIA TO THE DISTRICT NURSES FOR AN ADULT PATIENT NEEDING INTRAVENOUS MEDICATION

16 years old and above	**YES/NO**
Fit for discharge	**YES/NO**
Patient or carer is fully informed and consent to treatment	**YES/NO**
Family informed of the possible need to return to referring hospital for re-cannulation if necessary	**YES/NO**
Access to warm running water	**YES/NO**
Maximum twice daily administration of IV therapy at home	**YES/NO**
Patient has received at least 3 doses of the medication within the hospital setting (risk of anaphylaxis)	**YES/NO**
Referring medical team has accepted responsibility for the Patient and will provide 24 hour advice	**YES/NO**
No history of anaphylaxis	**YES/NO**
Adequate venous access	**YES/NO**

Brent NHS
Teaching Primary Care Trust

PATIENT INFORMATION LEAFLET

INTRAVENOUS DRUG ADMINISTRATION FOR ADULTS INFORMATION FOR PATIENTS AND THEIR CARERS AT HOME WITH PERIPHERAL CANNULAS

It has been decided that you may continue their intravenous (into a vein) treatment at home. In order to enable us to give you your treatment into a vein it is necessary for them to have a small hollow plastic tube inserted into your hand/arm. This plastic tube is called a cannula.

The cannula goes through their skin and into a vein where it stays to allow us to give their medicines directly into the bloodstream. They will have a waterproof dressing over the cannula to help keep it in place.

As the cannula is sitting in a vein there is a risk of bleeding if the cannula accidentally falls out. THERE IS NO NEED TO PANIC IF THIS HAPPENS. Usually any bleeding will stop within a few minutes if pressure is applied to the bleeding point.

IF THE CANNULA FALLS OUT:

- Apply pressure to the area with cotton wool or a tissue
- Maintain this pressure until the bleeding has completely stopped
- Once the bleeding has stopped apply a plaster
- Contact the hospital where the treatment was started to arrange for review.

HOSPITAL……..TEL. NO……

IF THE BLEEDING DOESN'T STOP:

- Keep applying pressure to the area
- Lift their arm above their head
- Contact your District Nurse team
- Go to your nearest Accident and Emergency Department at your nearest hospital.

APPENDIX 11

Brent NHS
Teaching Primary Care Trust

ADULT CARE PLAN

Patient's Name:_____ D.O.B._____ Date :_____ **PROBLEM: Potential for complications (Air Embolism, Infection, Thrombosis) related to the presence of _____(type of IV device)** **GOAL:**
• **TO ENSURE THAT THE CANNULA REMAINS PATENT** • **TO TAKE BLOODS AND ADMINISTER MEDICATION AS PRESCRIBED BY THE DOCTOR** • **PREVENTION AND EARLY DETECTION OF ANY COMPLICATION (LOCAL COMPLICATIONS SUCH AS INFECTION, PAIN, OCCLUSION, DISPLACEMENT; SYSTEMIC COMPLICATIONS AFFECTING VITAL ORGANS AND THEIR FUNCTION)**

NURSING ACTIONS:

All IV Devices:

- Explain and discuss the procedure with the patient.
- Encourage patient and carer to ask questions, express any worries and anxieties.
- Assess and observe general condition of the patient – ask if any new or different symptoms.
- Wash hands using a antibacterial agent such as chlorhexidine (or use alcohol gel) immediately before, and after any procedure involving an IV line
- Wear an apron and pair of gloves for any manipulation of an IV device.
- Use needle-free systems and luer-lock syringes on all IV devices. IV systems should be opened as infrequently as possible to minimise bacterial contamination.
- Decontaminate the injection port or catheter hub of any IV line with either alcohol or alcoholic solution of chlorhexidine gluconate in individual sachets before and after using it to access the system.
- Change administration sets in continuous use every 72 hours. If used for blood or blood products, they must be changed every 12 hours.
- Label all administration sets with the patients name as well as the date and time it was put into use.
- Use sterile, transparent, semi-permeable polyurethane dressing to cover an IV site. This should be replaced if it has become loosened or moisture has collected under the dressing. The dressing must be changed at least every 7 days for central lines.
- If the patient has profuse perspiration or if the cannula / catheter site is oozing or bleeding, a sterile gauze dressing is preferable. A gauze dressing needs to be changed when damp, loosened or soiled.
- An individual sachet of alcoholic chlorhexidine gluconate solution should be used to clean the catheter site during dressing changes and allowed to air dry. An

aqueous solution of chlorhexidine gluconate should be used if the manufacturer's recommendations prohibit the use of alcohol with the product.

- Obtain a microbiological swab of the IV site if infection is suspected monitor vital signs, pulse, blood pressure, temperature an respiration rate and record.
- Report any abnormalities to the GP/hospital doctor.
- Flush catheters with 0.9% normal saline before and after administering drugs, or taking bloods as prescribed by a physician. All flushes must be prescribed and recorded on the Drug Chart.
- Use 20 mls of syringe when flushing, employing a push-pause positive pressure technique. See appendix 16
- Avoid exertion of excessive pressure.
- Use infusion pumps with occlusion and air alarms if available.
- Dispose of sharps safely.
- Teach patient and carer on how to look after the catheter, proper ways of cleaning the site, and to recognise early signs of complications. There should be written advice given to patients see appendix 10

Peripheral IV Access:

- Assess insertion site at least daily for signs of infection using Jackson Phlebitis Scale and record.
- Always use a clean, non-touch technique when handling any peripheral IV device.
- Always wear clean examination gloves for any manipulation of the cannula.

Central IV Access:

- Obtain microbiological swab from catheter site and blood culture from the lumen if infection is suspected. Always use a sterile technique when handling a central IV line.
- Always wear sterile gloves for any manipulation of a central IV line.

Brent NHS
Teaching Primary Care Trust

PROCEDURE FOR MAINTAINING PATENCY OF A CENTRAL VENOUS ACCESS DEVICE IN ADULTS

Aim:
To ensure the patency of the catheter, and to ensure catheter remains infection free, this procedure must be performed after each use, or at least once weekly for catheters not in frequent use. For implantable ports this procedure may be advocated only monthly.

Equipment:
Sterile dressing pack
Sterile gloves.
Wipe impregnated with alcohol and chlorhexidine
10ml Luer lock syringes.
Sterile needle-free bungs (frequency of change as stated by manufacturer)
23g blue needles
For type of flush see table below:

Type of catheter	Frequency of flushing	Flushing solution
Groshong	Minimum weekly	Sodium chloride 0.9% 10mls
Hickman	Minimum weekly	Sodium chloride 0.9% 10mls Followed by Heparin sodium 10iu/ml 5mls if prescribed.
Portacath	Minimum monthly	Sodium chloride 0.9% 10mls Followed by Heparin sodium 100iu/ml 5mls if prescribed.

Procedure:
This must be an aseptic procedure.

ACTION	RATIONALE
1. Explain procedure to patient.	To ensure patient understands procedure and gives consent.
2. Wash hands thoroughly and prepare equipment, drawing up appropriate flush into syringe	To reduce the risk of contamination and infection.
3. Check patient identity and prescription.	To ensure correct drug is administered to the correct patient.
4. Wash hands thoroughly using an antibacterial agent if available or soap followed by alcohol gel and put on sterile gloves.	To maintain asepsis throughout the procedure.
5. If clamped catheter, ensure lumen is clamped. If Groshong remember there will be no clamp.	To prevent blood loss or air entry.
6. Clean the bung with an alcohol	To minimise the risk of contamination.

and chlorhexidine impregnated wipe and allow to dry.	
7. Using non-touch technique attach the10 ml luer lock syringe containing appropriate flush	To reduce risk of rupture or forcing of clots into the circulation. Prevent accidental disconnection and subsequent blood loss or air entry.
8. Unclamp line, gently pull back to see blood flow back into syringe and using a push-pause technique inject the flush	To check correct placement and patency of the catheter. To create turbulence within the lumen to ensure thorough flushing
9. Maintain positive pressure on the plunger during the injection of the last 0.5ml and simultaneously either clamp the catheter (if has clamps) or gently remove the syringe from the bung.	To prevent back-flow of blood into the internal tip of the catheter and thus reducing the risk of clot formation.
10. Change bung as recommended by manufacturers instructions after cleaning the end of the catheter with alcohol and chlorhexidine impregnated wipe	Prevent infection
11. Repeat steps 6-10 for each lumen of a multiple lumen catheter.	To ensure each separate lumen is adequately flushed.
12. Dispose of any sharps and equipment safely	To prevent needle stick injury and cross-contamination
13. Wash hands thoroughly	To prevent cross infection
14. Document procedure in patient's records.	To provide evidence that the procedure has been performed

Brent NHS
Teaching Primary Care Trust

PROCEDURE FOR TAKING BLOOD VIA A CENTRAL VENOUS CATHETER IN ADULTS

Aim: Safely obtain blood samples whilst minimising risks to patient.

Equipment:
Sterile dressing pack.
Sterile gloves.
Wipe impregnated with alcohol and chlorhexidine
Vacutainer holder and blunt adaptor for use with catheters or sterile luer lock syringes.
Blood sample bottles.
Sterile needle-less bung
23g blue needles
Pathology forms and specimen bags.

For flush see table below:

Type of catheter	Frequency of flushing	Flushing solution
Groshong	Minimum weekly	Sodium chloride 0.9% 10mls
Hickman	Minimum weekly	Sodium chloride 0.9% 10mls Followed by Heparin sodium 10iu/ml 5mls
Portacath	Minimum monthly	Sodium chloride 0.9% 10mls Followed by Heparin sodium 100iu/ml 5mls

Procedure:
An aseptic technique must be used. Bloods should be taken from the proximal lumen of a multiple lumen catheter.
Where multiple lumen catheters have different sized lumens, the largest (often coloured red) should be used where possible for obtaining blood samples.
The first 6-10mls of blood withdrawn from the catheter should be discarded prior to taking samples to ensure the removal of any heparin or sodium chloride in the lumen, which might lead to inaccurate blood results. **This does not apply if the blood sample is being sent for microbiological culture.**

ACTION	RATIONALE
1. Follow steps 1 - 8 of Procedure for maintaining patency, (appendix 12)	
2. Attach vacutainer holder, attach extra sample bottle, fill and discard.	To remove blood and any heparin, sodium chloride, drugs, electrolytes from the lumen prior to samples to avoid inaccurate results.
3. Attach required sample bottles for requested specimens	To obtain samples. It is not necessary to clamp the catheter between changing collection bottles as the system is not open.

4. Re-clamp the catheter and detach the vacutainer	To prevent blood loss or air entry.
5. Follow steps 7-9 of procedure for maintaining patency	To clear the catheter of blood and prevent clot formation in the catheter in between uses.
6. Ensure blood samples and forms are promptly and clearly labelled with the patients details, place in pathology bags	To ensure results are obtained for and returned to the correct patient records.
7. Dispose of any sharps and equipment safely	To prevent needle stick injury and transmission of infection.
8. Wash hands thoroughly	To prevent cross infection
9. Document the procedure in the patients clinical notes	To provide evidence that the procedure has been performed

Occasionally difficulty in aspirating the required blood may occur. This may be because the lumen is occluded (and is often the result of the catheter tip lying against the vessel wall).

Ask the patient to:

- Take a deep breath or cough.
- Raise his/her arms.
- Increase general activity, e.g. walk around, climb stairs, if appropriate.
- Change position e.g. sits up, turn head.
- The nurse can try moving any clamp and gently rolling the area where the lumen has been clamped.

If the tip of the catheter is covered in a fibrin sheath flushing the lumen with sodium chloride initially may help.

Clotting samples:
Clotting samples should ideally be taken peripherally and *not* from the catheter to avoid the potential for inaccurate results due to presence of heparin in the catheter. If the patient is known to have significantly reduced clotting ability refer back to the referring clinician.

If peripheral access is poor and the sample has to be taken via the catheter then a minimum of 20mls of blood must be taken before the clotting sample.

Refer to PCT “Policy for the Safe collection, storage and transfer of clinical specimens” (ICC 06) for details of transport of any specimen.

PROCEDURE FOR DRESSING A CENTRAL VENOUS CATHETER EXIT SITE IN ADULTS

Aim:
To reduce the risks of bacterial contamination and local or systemic infection.

Equipment :
Sterile dressing pack.
Sterile gloves.
Single use alcoholic chlorhexidine if patient able to tolerate and if allowed within the manufacturers advice for the intravenous device. Aqueous chlohexidine can be used if not tolerated or if incompatible with device
Sterile dressing - transparent semi-permeable polyurethane dressing or sterile gauze if any exudates
Wound swab (if any exudate present).
Skin anchorage device for PICC.
Hypoallergenic tape.

Procedure:
AN aseptic technique must be used. This should be performed at least weekly, if there are no signs of infection or more frequently if the site is wet or soiled

ACTION	RATIONALE
1. Explain procedure to the patient	To ensure patient understands procedure and gives consent.
2. Wash hands thoroughly using an antibacterial agent if available or soap followed by alcohol gel.	To reduce the risk of contamination and infection.
3. Remove dressing and/or anchorage device taking great care to avoid any tension on the catheter (particularly if the line is not cuffed or sutured)	To avoid any displacement of the catheter.
4. Assess site for any signs of infection such as, redness, swelling, exudate or tracking along the path of the catheter.	To allow for early detection of any potential infection.
5. If any signs of infection present, swab the area and send for microbiological assessment and report immediately to treating hospital and/or GP.	To identify any organisms. To allow for early treatment of any local infection and thus prevent systemic complications.
6. Wash hands (as 2) Put on sterile	To maintain asepsis throughout the

gloves.	procedure.
7. Clean around the site with Chlorhexidine. Clean from exit site outwards, discarding each piece of gauze after one wipe. Allow to dry.	Normal skin flora can pose a risk of infection To prevent spread of bacteria back into site.
8. If PICC line, attach new anchorage device taking great care not to cause any tension on the catheter.	PICC line may not be cuffed or sutured and can therefore easily be displaced.
9. Apply sterile dressing, centrally over catheter.	To prevent cross-infection
10. With PICC and Hickman line, secure the remaining length of catheter by looping and taping it.	To prevent any direct tension on the site, Dacron cuff and catheter if accidentally pulled.
11. Dispose of waste and equipment safely.	To reduce risks of infection and environmental contamination.
12. Wash hands thoroughly	To prevent cross infection
13. Document procedure and assessment of catheter exit site.	To enable continuous monitoring of catheter exit site.

Practice Criteria for Administration of Intravenous Parental Nutrition

Standard

Parental nutrition should be administered according to the order of the clinician.

Informed consent by the patient or legal guardian should be obtained prior to commencing the administration of parenteral nutrition and should be documented in the patient's medical record.

Infusion specific filtration and an electronic infusion device (EID) must be used during the administration of this therapy.

Administration sets used for parenteral (PN) must be changed every 24 hours and immediately upon suspected contamination or when the integrity of the product or system has been compromised.

PN administration sets must be changed using aseptic technique

Practice criteria

- The nurse shall communicate with the clinician, pharmacist and dietician on the development and implementation of a nutrition care plan (Colagiovanni 1997; King's Fund 1992).
- Nutritional solutions containing final concentrations exceeding 10 per cent dextrose and/or 5 per cent protein (nitrogen) should be administration via a central venous catheter with tip placement in the superior vena cava (BMA & RPS 2003).
- PN solutions in final concentrations of 10 per cent dextrose or lower and/or 5 per cent protein (nitrogen) or lower should not be administered peripherally for longer than 7 to 10 days unless concurrent supplementation with oral or enteral feeding is provided to ensure adequate nutrition (BMA & RPS 2003).
- Parenteral nutrition solutions should be infused or discarded within 24 hours, once the administration set is attached (Burham 1999).
- A protocol for changing PN administration sets should be established in organisation policies and procedures (King's Fund 1992).
- Product integrity should be established before using the administration set.
- The changing of add-on devices such as, but not limited to, extension sets, filters, stopcocks, and needle less devices should coincide with the changing of the administration set.
- Parenteral nutrition solutions should be removed from refrigeration one hour prior to infusion in order to reach approximate room temperature.
- Parenteral nutrition solutions not containing lipids should be filtered with a 0.2 micron filter during administration (Weinstein 2001), or as specified in the product information (BMA & RPS 2003).

- Parenteral nutrition solutions containing lipid emulsion should be filtered using a 1.2 micron filter during administration, or as a specified in the product information (BMA & RPS 2003).
- Solutions should be prepared in the pharmacy using aseptic technique under a horizontal laminar flow hood (Hart 1999).
- Medications added to parenteral nutrition prior to administration of the solution should be assessed for compatibility (BMA & RPS 2003).
- Medications added to parenteral nutrition should be documented on the label that is affixed to the infusate container (Harkreader 2000).
- Medications should not be added to the parenteral nutrition solution once it is actively infusing (Weinstein 2001).
- Parenteral nutrition administration systems, whether central or peripheral, should be dedicated to those solutions (Burnham 1999).
- Parenteral nutrition should be administered via a lumen kept exclusively for this purpose (DH 2001).
- Push or piggy-back medications should not be added to these infusion systems, with the exception of lipid emulsions with verified compatibility (BMA & RPS 2003).
- The nurse should monitor the patient for signs and symptoms of metabolic-related complications and electrolyte imbalances (Henry 1997; Burham 1999).
- The nurse should monitor the patient for signs and symptoms of catheter-related complications (Henry 1997).
- The nurse should assess, monitor and document the patient's response to therapy in their medical record (Burham 1999).

POTENTIAL COMPLICATIONS IN ADULTS WITH CENTRAL INTRAVENOUS ACCESS DEVICES

PROBLEM	POSSIBLE CAUSE	RECOMMENDED ACTION
Dyspnoea, tachypnoea, chest pain, cyanosis, respiratory arrest.	Air embolism	Clamp the catheter and then check for damage, rupture or disconnections. If damage or rupture located clamp immediately above (toward patient) damaged part. Monitor the patient. Ring emergency services if patient at home. Inform Dr/GP, hospital. Lay patient in *Trendelenburg position* - head down 45 degrees with legs hanging over raised end. Administer oxygen if available. Commence CPR if necessary.
Oedema, pain, swelling and/or tenderness of arm, neck and/or chest. Engorged peripheral veins. Peripheral neuropathy. Skin colour and/or temperature changes. Blocked catheter.	Thrombosis	Report to Hospital, ward doctor or GP. Wound swab of exit site. Venogram may be required. Possible anti-coagulant therapy. Possible catheter removal.
Pain, redness, inflammation, exudate at wound site.	Local infection of the tunnel or exit site.	Report to Hospital, Dr, GP. Wound swab Blood cultures may be required peripherally and from each lumen. Antibiotics - I.V. Possible catheter removal. This will require urgent assessment by the relevant doctor.
Pyrexia, tachycardia, rigors.	Systemic infection.	As above. I.V. antibiotics.
Unable to obtain blood.	Occlusion/blockage. Catheter tip against vessel wall.	Try flushing catheter with sodium chloride 0.9%. Move clamp and massage catheter where the clamp was. Ask patient to:- cough, deep breathe, raise arms, change position. If no success but catheter will flush, take bloods peripherally and try to aspirate again later. If still unsuccessful refer to hospital.
Inability to flush	Occlusion /	Check clamps are open and the catheter is not

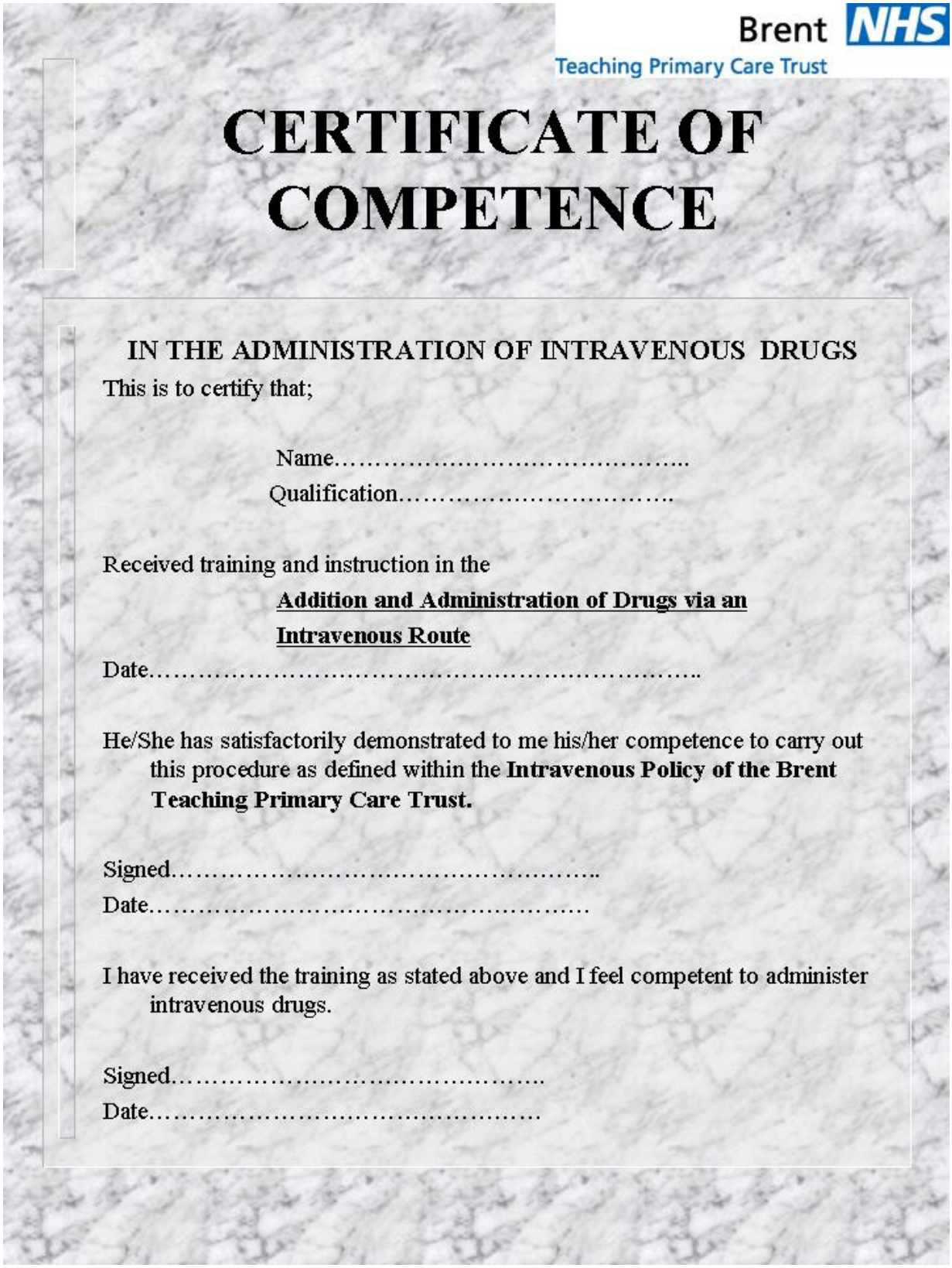
catheter.	blockage.	kinked. Try gentle pressure and aspiration with sodium chloride 0.9% in syringe. NB. Use a syringe of 10ml or above ONLY to avoid excessive pressure. DO NOT use excessive force. If no success, report to hospital to arrange for instillation of Urokinase to dissolve any thrombi and restore patency. NOT to be administered in community setting. Potential for catheter removal.
Visible damage to catheter. Fluid leaking from catheter.		Requires urgent attention. Clamp catheter above (toward patient) damaged area or as close to patient as possible if damage not visible. Contact hospital immediately. Catheter may be repaired using special equipment.
Catheter falling out.	Catheter partially or fully displaced.	If partially removed contact hospital immediately to arrange urgent attention. If completely out apply pressure to entry site (if skin tunnelled also apply pressure to area where catheter would have entered vein) for 5 - 10 minutes and observe for bleeding. Inform hospital.
Chest pain, cold/clammy, tachycardia, hypotension.	Pulmonary embolism due to catheter tip embolus. (Can occasionally occur particularly on removal of catheter)	Ring emergency services if patient at home or contact Dr. As for air embolism.

REFERENCES:

Dougherty L. and Lister S. (2004) The Royal Marsden Hospital Manual of Clinical Procedures pages 750-754

NICE (2003) Prevention of Healthcare Associated Infection in Primary and Community Care – Care of Patients with Central Venous Catheters

Brent NHS
Teaching Primary Care Trust



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CERTIFICATE OF COMPETENCE

IN THE ADMINISTRATION OF INTRAVENOUS DRUGS

This is to certify that;

Name……..

Qualification……..

Received training and instruction in the

Addition and Administration of Drugs via an Intravenous Route

Date……..

He/She has satisfactorily demonstrated to me his/her competence to carry out this procedure as defined within the **Intravenous Policy of the Brent Teaching Primary Care Trust.**

Signed……..

Date……

I have received the training as stated above and I feel competent to administer intravenous drugs.

Signed……..

Date……

NAME OF CANDIDATE:
DEPARTMENT/ TEAM:
NAME OF ASSESSOR:
SPECIFIC ROUTE OF DRUGS SUPERVISED:

CHECKING:

Did the candidate safely check the prescription for completeness and clarify the drug and dilutent for:

- **dose**
- **condition (e.g clarity, expiry date)**
- **compatibility**
- **effects and side-effects**

The patient's identification

The tubing and intravenous site

PREPARATION:

Did the candidate apply strict asepsis in the administartion of the injection

Was the drug administerd at the correct rate

did the candidate observe the patient

DOCUMENTATION:

Did the candidate record the drug administration completely

If applicable, was a completed addiative label attached to the container if the IV fluid

LEGAL IMPLICATIONS:

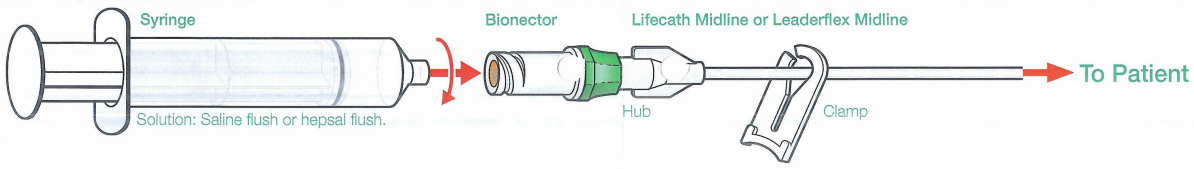
Has the candidate explained the Brent tPCT policy

The procedure following an adverse reaction or administrative error.

Signature of candidate:

Signature of assessor:

Push and Pause Technique



1. Connect syringe to Bionector with a push and twist technique.
2. Intermittently push the plunger of the syringe "push - pause technique" to create a turbulent flush to clear the catheter.
3. With the final 1-2ml of flush, apply pressure to the syringe plunger while simultaneously sliding the clamp of the catheter to the closed position.
4. Disconnect your syringe (twist and pull) and dispose.

Positive Pressure Flushing

www.vygon.com

EVALUATION QUESTIONS

1. Have you attended the training for the administration of intravenous drugs.
2. Where would you find the policy.
3. Have the records used for the administration of intravenous drugs been audited in the last 12 months?