

Intravenous drug administration competency document

Intravenous drug administration and infusion management

The practitioner will be able to fully demonstrate the knowledge and skills required for becoming a safe and effective practitioner in the administration of intravenous (IV) drugs and infusion management.

Each practice area has speciality competencies particular to the care of their patients. Administration of IV drugs and infusion management is considered a speciality competency as it is not carried out in all areas of the Trust.

Guidelines for Completion

Before starting the competency pack, you must:

- a. Successfully complete the trust core competency: Administration of Medicines (excluding IV medications)'. All newly appointed staff are expected to have achieved this within the first month of their appointment and cannot carry out a drug round alone until they have done so.
- b. Attend the trust Intravenous Drugs and Infusion Management Study Day and successfully complete the medication calculations exam which has a 100% pass mark. This study day provides the underpinning theory and practice to complete the competency document.

Take the competency document to the clinical area and complete it with an assessor that is already proficient in IV medication and fluids administration. When signed off as proficient in all areas by your assessor complete and send in the last page of this document to stees.clinicalskills@nhs.net

This pack is also designed for you to provide evidence of continuing competence and ongoing development required for your professional portfolio, revalidation and SDR. By adding to it periodically you can demonstrate how you are keeping your skills and knowledge up to date and maintaining your competence.

Competence

The Nursing and Midwifery Council (NMC, 2018) - The Code requires that:

- *You keep your knowledge and skills up to date.*
- *You must have the knowledge and skills for safe and effective practice when working without direct supervision.*
- *You must recognise and work within the limits of your competence.*
- *You must keep your knowledge and skills up to date throughout your working life.*
- *You must take part in appropriate learning and practice activities that maintain and develop your competence and improve performance.*
- *Complete the necessary training before carrying out a new role.*
- *Maintain the knowledge and skills you need for safe and effective practice*

The Health and Care Professional Council Standards of conduct, performance and ethics for allied health professional (HCPC, 2024) states that duties as a registrant include:

- *You must provide (to us and any relevant regulators) any important information about your conduct and competence.*
- *You must keep your professional knowledge and skills up to date.*
- *You must act within the limits of your knowledge, skills and experience and, if necessary, refer the matter to another practitioner.*
- *You must effectively supervise tasks that you have asked other people to carry out.*

Competence is therefore a combination of skills, knowledge and the ability to apply these principles to practice in diverse situations and circumstances, the evidence you produce as you work through this pack and in the future should reflect this. As skill minus knowledge / understanding / appropriate attitude **does not** equate with competent practice.

For further information on the trust competency process, see Human Resource policy P08 Management of Capability Policy.

Assessment of practice

You should seek support from a practitioner already competent in the administration of IV drugs and infusion management. Together you should complete the competency assessment framework below.

Reflective Practice

Continuous professional development (HCPC 2024) and revalidation (NMC 2018) are essential elements of lifelong learning. They enable you to review your practice, improve standards of care and maintain your registration. It is expected that you prepare reflective accounts of your learning in practice and identify your future learning needs.

Different models of reflection may be used; a suggested format from the NMC is as follows:

- *What was the nature of the CPD activity?*
- *What did you learn from the development of competence in intravenous drugs and infusion management?*
- *How did this change or improve your practice as a result?*
- *How is this relevant to the Code? (NMC, 2018)*
- *How is this relevant to the standards? (HCPC, 2024)*

You and your assessor should discuss these accounts and develop any action plans required to meet the learning needs identified through the reflective process.

How will I be assessed?

This document contains competency elements that must be achieved in order that you achieve to a state of 'competence'. These competencies represent the minimum standard expected for a registered practitioner in the organisation. Completion of these competencies along with your reflective accounts of learning in practice will provide evidence for demonstrating the achievement of the required knowledge and skill framework domains.

The WASP framework has been used to host the required competencies, identifying the process of achievement of proficiency for every skill through measuring competence in each individual element of the skill. It uses the scoring system (below), to provide a robust

assessment of each element at every stage of learning. All steps may be revisited as necessary until proficiency is achieved and agreed by the assessor. To ensure that staff assess at the same standard, each competency has specific criteria that must be met.

Witnessed – The learner must observe or witness the skills required prior to being supervised.

Assimilated – Demonstrate sound knowledge base for the competency element, utilising Trust Policies, Nursing & Midwifery Strategy and professional and legal issues relating to it. Assimilation of knowledge can be assessed through observation of practice, or through questioning / discussion / simulation of situations relating to the competency element.

Score is as follows-:

- 1 = Demonstrates fundamental knowledge and understanding of this element of the competency.
- 2 = Demonstrates broad knowledge and understanding
- 3 = Demonstrates an in-depth knowledge and understanding of the issues supporting the element of the competency / skill.

Supervised – Practice under supervision to demonstrate understanding and competence. Score as follows-:

- 1 = Needs further practice
- 2 = Shows aptitude
- 3 = Demonstrates skilled and professional practice

Understanding and competence can be assessed through observation of practice, or through questioning / discussion / simulation of situations relating to the competency if these situations have not arisen within the supervisory period. The “Supervision” element of the competency may be continuous observation by the preceptor/assessor until he or she is confident that skilled capable and professional practice has been achieved by the candidate and can be signed of as “Proficient”.

Proficient - Competent in both knowledge and skill elements of the competency.

Both the “Assimilated” and “Supervised” aspects of the competency can be scored more than once as necessary, and the combination of in-depth knowledge and understanding, coupled with skilled professional practice equals proficiency.

On the title page of the WASP framework, it is documented how the competency links to the:

- 1. Nursing and Midwifery Strategy Key Performance Indicators
- 2. NMC Code (2018)
- 4. South Tees Accredited Quality Care Standards (STAQC)

These links have been provided to facilitate understanding of how all these elements combine to ensure competence, resulting in the high standard of patient care and patient safety that the organisation expects. It is strongly advised that you use the links to help you fulfil your competencies.

The use of the competency framework is designed to highlight areas to help you monitor your progress and identify areas for further development. You will be encouraged and supported to work on these key areas.

Once this has been achieved, please complete the final meeting form on page 20, getting this signed by your assessor, and email a copy to stees.clinicalskills@nhs.net

Or send by post to:

Education and Practice Development Team

The James Cook University Hospital
The Murray Building;
South Tees Hospitals NHS Foundation Trust.

Criteria marked with an asterisk (*) on page 14 are only applicable in some areas of the Trust. Your preceptor / assessor will be able to advise you whether this is something you would be regularly required to perform in your practice area, do not complete if you have limited exposure to these elements.

<u>Administration of intravenous (IV) drugs and infusion management:</u>		
<i>Links to the NMC Code (2018):</i>		1.2,1.3,1.4, 2.1,2.5,3.3,4.2, 6.1,6.2,7.2,7.3,8.2,8.5,9.1,9.4,10, 5.5,.1,10.3,10.4,11.0,11.2,11.3,13.2,13.3,13.4,13.5,14.1,15.1,16.2,17.1,19.1,19.2,19.3,20.22.3,25.1
<i>South Tees Accredited Quality Care (STAQC):</i>		Domain 1: 10,13,17,18, 22, 23 Domain 2: 1, 2, 7, 21, 22, 25, 37, 39, 41, 47, 48, 57 Domain 3: 5, 26, 29, 38, 51, 52, 53, 58, 65, 91, 92, 93, 99, 101 Domain 4: 3, 4, 41
Competency Standard Statement		The practitioner will be able to fully demonstrate the knowledge and skills required for the Safe Administration of Intravenous Drugs and Infusion Management.
W	WITNESSED	Observe or witness the competency – it is considered good practice that the Health Care Practitioner (HCP) will have had the opportunity to observe the procedure prior to being supervised.
A	ASSIMILATED	Understands the underpinning knowledge associated with each element of the competency; score as follows: 1 = Demonstrates fundamental knowledge and understanding 2 = Demonstrates broad knowledge and understanding 3 = Demonstrates in depth knowledge and understanding
S	SUPERVISED	Practice under supervision to demonstrate understanding: score as follows: 1 = Needs further practice 2 = Shows aptitude 3 = Demonstrates skilled and professional practice (at level 3.)
P	PROFICIENT	Competent in both knowledge and skill elements of the competency.

Competency element	Rationale	W	A (Score)	S (Score)	P
Professional and legal issues	<i>Understands the importance of professional accountability in practice relating to the administration of intravenous drugs and infusion management</i>				
Discuss the principles laid out in the 'Professional Guidance on the Administration of Medicines in Healthcare Settings' Royal Pharmaceutical Society	To minimise risk in IV drugs and Infusion management errors.				
Discuss the key points of the Trusts drug administration policy	To comply with organisation requirements in IV drugs and Infusion Management.				
Discuss the principles of accountability in relation to own professional practice in IV drug administration.	To ensure that the learner is working within the scope of practice or within their respective professional frameworks- NMC Code, (2018), HCPC Standards, (2024).				
Discuss how on-going competence will be maintained, evidenced and documented in the future, using a reflective process.	To ensure that the learner is working within the scope of practice or within their respective professional frameworks- NMC Code, (2018), HCPC standards (2024)				
Discuss how the potential for drug errors in practice can be minimised.	To improve patient safety				
Discuss their actions when a drug error is discovered.	To ensure the patient are appropriately managed. To minimise the potential for errors to happen again.				
Discuss their actions when a drug error is made.	To ensure staff take responsibility for their actions and learn from them.				
Highlights the potential complications associated with the administration of IV drugs, infusions & fluids.	To be aware of signs of complications and measures in minimise these from happening.				

Competency element	Rationale	W	A (Score)	S (Score)	P
For each complication :					
i. Discusses how to recognise the complication (signs & symptoms).	To be aware of signs of complications and measures in minimise these from happening.				
ii. Their actions and management in the event of the complication occurring.	To be aware of signs of complications and measures in minimise these from happening.				
iii. What actions can be taken to minimise the risk of the complication.	To be aware of signs of complications and measures in minimise these from happening.				
iv. Describes the signs and symptoms of an allergic reaction to drugs administered.	To be aware of signs of complications and measures in minimise these from happening.				
v. Discusses their actions and the management of the patient when an allergic reaction to drugs occurs.	To be aware of signs of complications and measures in minimise these from happening.				
vi. Describes the signs and symptoms of an anaphylactic reaction to drugs.	To be aware of signs of complications and measures in minimise these from happening.				
vii. Discusses their actions and the management of the patient if an anaphylactic reaction to drugs occurs.	To be aware of signs of complications and measures in minimise these from happening.				
viii. Discusses how complications that occur should be documented.	To be aware of signs of complications and measures in minimise these from happening.				
ix. Discusses how reactions / adverse responses that occur to drugs administered that have not previously been documented in the BNF should be reported and documented.	To be aware of signs of complications and measures in minimise these from happening.				

Competency element	Rationale	W	A (Score)	S (Score)	P
1. Administration of IV drugs and fluids	<i>Safely and correctly prepares and administers bolus intravenous drugs and intravenous fluids using the different access options available</i>				
Identifies the benefits of administering drugs intravenously.	To facilitate the process of obtaining informed consent				
Identifies the contra indications / circumstances that may negate using intravenous drugs.	To minimise errors in IV drugs and Infusion management				
Describes the process of selecting and checking drugs and fluids prior to administration.	To minimise errors in IV drugs and Infusion management				
Demonstrates the process of selecting and checking drugs and fluids prior to administration.	To minimise errors in IV drugs and Infusion management				
Safely and correctly prepares and mixes drugs prior to administration.	To ensure the patient receives the appropriating dose of prepared IV drugs and Infusions.				
Discusses the factors considered in selecting the appropriate access / port to administer drugs.	To minimise errors in IV drugs and Infusion management				
Correctly and safely selects the most appropriate access port to administer drugs in different situations.	To minimise errors in IV drugs and Infusion management				

Competency element	Rationale	W	A (Score)	S (Score)	P
For each drug administered, discusses its desired effect, normal dosage range, possible side effects and incompatibilities.	To ensure knowledge of indications and contra indications of medications				
Correctly administers the prepared drugs / fluids monitoring patient condition continuously.	To ensure patient safety and reduce potential for deterioration				
Demonstrates the ability to correctly calculate accurate dosage of bolus drugs.	To ensure patient safety and reduce potential for medication errors				
Correctly and legibly completes the relevant documentation relating to the drugs administered.	To ensure patient safety and reduce potential for medication errors				
2. Principles of Infusion management and IV additives	<i>Safely prepares, administers and manages intravenous infusions and multiple IV therapies using correct labelling and documentation according to Trust policy and procedure.</i>				
Discusses the safety aspects involved in managing an intravenous infusion.	To ensure patient safety and reduce potential for medication errors				
Demonstrates the safe management of IV infusion/s.	To ensure patient safety and reduce potential for medication errors				
Discusses the potential problems associated with managing multiple intravenous infusions.	To ensure patient safety and reduce potential for medication errors				
Discusses the measures taken to minimise the risk of these complications occurring.	To ensure patient safety and reduce potential for medication errors				

Competency element	Rationale	W	A (Score)	S (Score)	P
Discusses and demonstrates in practice the procedure for the correct labelling of intravenous infusions and additives.	Demonstrates safe practice in the management of multiple infusions adhering to recognised protocols.				
Discusses the importance of labelling the giving sets and lines.	To ensure patient safety and reduce potential for medication errors				
Demonstrates the correct procedure for documenting or recording infusions on drug & observation charts.	To ensure patient safety and reduce potential for medication errors				
Demonstrates safe and effective line management when using multi lumen access.	Demonstrates safe practice in the management of different / multiple inotrope infusions adhering to recognised protocols				
Demonstrates the ability to correctly calculate infusion rates to ensure accurate dosage.	To ensure correct dose of medications given				
Demonstrates the ability to correctly calculate infusion reserves, renewal times and expiry times.	To ensure correct dose of medications given and timely preparation of next infusions				
Discusses and demonstrates the safe and correct checking, mixing and administration of potassium infusions appropriate to your clinical area	To ensure patient safety and appropriate administration of medication				
Discusses and demonstrates the procedure for the preparation and administration of high dextrose concentration solutions and TPN.	To ensure patient safety, appropriate administration of medication and that the correct patient is given the correct medication				

Competency element	Rationale	W	A (Score)	S (Score)	P
3. Demonstrates the principles of Aseptic Non- touch technique (ANTT) in the preparation and administration of IV drugs and infusion management.	<i>To minimise harm from iatrogenic infections and promote patient recovery</i>				
Correctly identifies the equipment required in IV drugs and infusion management	To ensure safe practice				
Correctly identifies the general and micro critical aseptic fields in IV drugs and infusion management	To reduce the possibility of cross infection				
Correctly identifies the key parts in IV drugs and infusion management	To reduce the possibility of cross infection				
Decontaminates hands, wears appropriate PPE, and prepares the general aseptic field	To reduce the possibility of cross infection				
Collects all the equipment, removes the tamper proof cap, cleans the top by wiping the bung using chlorhexidine wipe with 70% alcohol for 30 seconds; wait for it to air dry	To reduce the incidence of dust contaminants				
Prepares the diluent and injects it into the vial to dilute the drug while protecting the key parts. Introduces the needle in the vial to draw up the drug and disposes of sharps safely while protecting the key parts.	To reduce the possibility of cross infection				

Competency element	Rationale	W	A (Score)	S (Score)	P
Correctly places the syringe in the in the micro critical aseptic field onto the general aseptic field	To reduce the possibility of cross infection				
Changes the PPE and approaches the patient's bedside	To protect the patient and member of staff				
Checks the cannula site and cleans the needleless extension using chlorhexidine wipe with 70% alcohol by agitating it for 30 seconds using three areas of the wipe	To reduce the possibility of introducing infection into the cannula				
Introduces the syringe to the needleless extension protecting the key parts, opens the clamp gives the first flush with a slow push pause technique	To preserve sterility				
Clamps the needleless extension and disconnects the syringe when flush is complete- repeats the above step for the medication administration and final flush of the cannula.	To reduce the possibility of cross infection and give the medication and flushes with an appropriate speed and technique				
Disposes of equipment and gloves according to Trust/local guidance. Washes hands with soap and water or uses hand sanitiser Cleans tray/trolley after the procedure then washes hands with soap and water or uses hand sanitiser to finish the procedure.	To reduce the potential for cross infection				

*Management of Inotropes (Applicable to Critical Care Areas and Theatre)		<i>Demonstrates informed safe practice in the management of different / multiple inotrope infusions adhering to recognised unit protocols.</i>				
*Discusses the indications for commencing inotrope therapy.						
*Lists the commonly used inotropes in ICU.						
*Discusses the physiological effects of each.						
*Discusses the potential complications of using each.						
*Describes the specific safety aspects involved in managing a patient with an inotrope infusion in progress.						
*Describes the procedure for the correct and safe change over ('piggy-back') of inotrope infusions.						
*Demonstrates the safe change over (piggy-back) of inotrope infusions.						
*Discusses the safety aspects involved when discontinuing inotrope infusions.						
Staff Member/Preceptee (Print Name)		NMC Number				
Assessor/Preceptor (Print Name)		NMC Number				
Competency Achieved		Date				Yes/No

Record of Learning & Achievement (ROLA) - Evidence Log Sheets

	<p><i>Competency Element (IV Drugs and Infusion Management)</i></p> <p>Use these ROLA sheets to keep an ongoing record of your learning and development. Reflect upon anything you see as relevant or significant, where possible use a reflective approach in your entries and make reference to current evidence to underpin your work. Please record each administration of intravenous drug or infusion and add reflection to the reflect log.</p>
Date	

	<p>Competency Element (IV Drugs and Infusion Management)</p> <p>Use these ROLA sheets to keep an ongoing record of your learning and development. Reflect upon anything you see as relevant or significant, where possible use a reflective approach in your entries and make reference to current evidence to underpin your work.</p> <p>Please record each administration of intravenous drug or infusion and add reflection to the reflect log.</p>
Date	

Reflection on Learning in Practice

You should now reflect on what you have learnt by completing this competency *or* an episode of IV Drug and Infusion management and identify any future learning needs.

Describe the learning activity?

How many hours was the session?

What have you learnt?

How will this influence your practice?

What further learning needs has this identified?

Associated policies and references

Hospital Infection Control Policies

HIC 01 Standard Principles of Infection Control policy

HIC 04 Blood – borne virus and inoculation incident policy

HIC14 Hand hygiene policy

HIC 19 Decontamination policy

General Policies

G 13 Consent to examination and treatment policy

G34 Medicines Policy

G 38 Policy and Procedure for the Positive Identification of Patients

G 80 Healthcare Records Standards Policy

G158 Injectable Medicines Policy

Health and Safety Policies

HS16 Dealing with the Safe Handling of Sharps policy

References

Aseptic Non-Touch Technique (2019) Foundation for effective infection control (online) http://www.antt.org/ANTT_Site/home.html [accessed 19/08/2024]

Health and Care Professional Council (2024) Standards of conduct, performance and ethics (online) [Standards of conduct, performance and ethics](#) [accessed 09/12/2024]

Mental Capacity Act (2005) (online) <https://www.legislation.gov.uk/ukpga/2005/9> {accessed 19/08/2024}

National Institute for Health and Care Excellence. (2015). Guideline NG5. Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes. NICE London. <https://www.nice.org.uk/guidance/ng5/resources/medicines-optimisation-the-safe-and-effective-use-of-medicines-to-enable-the-best-possible-outcomes-pdf-51041805253> [accessed 19/08/2024]

Nursing and Midwifery Council. (2018). The Code: Professional standards of behaviour for nurses, midwives and nursing associates Nursing and Midwifery Council

Nurses and Midwives Council (NMC 2019) Revalidation (online) [accessed 10/12/2024]

Royal Pharmaceutical Society. (2019). Professional Guidance on the administration of medicines in healthcare settings (online) <https://rpharms.com/Portals/0/RPS%20document%20library/Open%20access/Professional%20standards/SSHM%20and%20Admin/Admin%20of%20Meds%20prof%20guidance.pdf?ver=2019-01-23-145026-567> [accessed 19/08/2024]

Royal Pharmaceutical Society. (2018). Professional Guidance on the safe and secure handling of medicines. <https://www.rpharms.com/recognition/setting-professional-standards/safe-and-secure-handling-of-medicines/professional-guidance-on-the-safe-and-secure-handling-of-medicines> {accessed 19/08/2024}

South Tees NHS Trust (2018) Human Resource policy P08: Management of Capability Procedure (online) <https://staffintranet.xstees.nhs.uk/resources-guidelines/p08-management-of-capability-policy/> [accessed 19/08/2024]

Final Meeting: IV Drugs and Infusion Management

Staff members name:

Job title:

Ward/Department:

Assessors Name:

Date of course attended:/...../.....

Date of completion:/...../.....

Discussion between assessor & the staff member completing to identify and agree that the:

- Course has been attended and complete
- The IV Drugs exam was successfully passed
- Adheres to ANTT principle.
- The competency pack has been completed and the staff member has met the criteria to carry out this training

Comments from the assessor:

Comments from the staff member after completion:

Signatures:

Staff members signature.....

* Staff Member's email address

** certificates will be sent to this email address - please ensure you provide this information*

Assessor/Mentor's signature

.....

On completion of this form please retain a copy in your portfolio, file a copy in your personnel file and send a copy to:

stees.clinicalskills@nhs.net or

Education and Practice Development Team. Second Floor, Murray Building, JCUH.

Education and Development Team IV Drugs & Infusion management Competency pack Version 6

Review Date: September 2027

Guideline for IV administration bolus including ANTT

Elements of Performance
Approaches patient and introduces self. Performs hand hygiene. Confirms right patient, with 4 checks allergies, explains procedure and gains an informed consent.
Checks cannula for signs of infection, inflammation, phlebitis, displacement, infiltration, extravasation and reviews previous VIP score, performs hand hygiene.
Reads the patient's prescription chart and confirms the following: (a) correct patient (b) drug (c) dose (d) date and time of administration (e) route and method of administration (f) validity and legibility of prescription (g) signature of prescriber.
Performs correct drug calculation, using BNF, MEDUSA or local protocol. Checks the calculation with an independent second checker.
Selects appropriate Drug/ 0.9% Sodium Chloride flush, collects appropriate PPE and 2% chlorhexidine alcohol wipes, syringes, needles and tray. Checks drug against prescription with independent second checker, and checks expiry date of drug, diluent, flush and equipment.
Performs hand hygiene, wears gloves and an apron.
Opens packaging of syringe and needle to be used to draw up drug, and connects needle to end of syringe protecting key parts using ANTT.
Removes the tamper-evident seal on the vial, cleans the septum using 2% chlorhexidine with alcohol wipe for 30 seconds and allow to air dry for a further 30 seconds, protecting key surfaces as per ANTT guidelines.
Draws up appropriate amount of diluent into syringe and slowly injects the diluent into vial at 180°. Gently mix following instructions then inspect the reconstituted drug for colour, sediments and evidence of drug dissipation into the diluent.
Inserts the needle into vial bevel up, at a 45°-60° angle. Draw up the reconstituted drug by inverting the needle to 90° and then draw it into the syringe. In two separate 5 ml syringes draw up 0.9% Sodium Chloride flush, making sure to dispel any air from all syringes.
Bedside checks and commencement of IV bolus
Checks 4 patient identifiable data against the prescription, and re-check allergy status
Checks the patient understands the procedure and ongoing informed consent. Ensure a needleless extension is available and select one port to be used (if several ports). Clean the port with 2% chlorhexidine alcohol wipe for 30 seconds leaving it to air dry for 30 seconds (ensuring it does not touch other surfaces) as per ANTT.
Unclamp port, flush cannula with 5mls 0.9% Sodium Chloride (using push pause technique) to ensure patency, ask the patient to report any pain at injection site and monitoring for any signs of phlebitis or swelling.
Injects IV drug at required rate per minute as per BNF, MEDUSA or local protocol, as per ANTT, always monitoring the injection site and patient for an unexpected reaction
Flushes cannula with 5mls 0.9% Sodium Chloride; clamp port using ANTT.
Checks patient is comfortable and that there are no adverse effects. Thank patient.
After care-completion of IV bolus
Correctly dispose of clinical waste and sharps, perform hand hygiene.
Completes necessary documentation in drug chart, making sure signature is clear and concise at the time the drug was given record score on VIP chart.