



**Catherine McAuley School of Nursing and Midwifery
University College Cork
and
Participating Health Service Providers**

Peripheral Intravenous Infusion Policy for

**BSc General and BSc Children's and General
(Integrated) Nursing Undergraduate Students**

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Peripheral Intravenous Infusion Policy

BSc General and BSc Children's and General (Integrated) Nursing Students

1.0 Policy Statement

- 1.1 It is the policy of University College Cork in conjunction with Health Service Providers and the Health Service Executive (HSE) that **only** registered nurses (RN) and registered midwives (RM) who have undertaken the necessary education and training are enabled and facilitated to undertake safe administration of intravenous medications (Office of Nursing & Midwifery Services Director, 2013, p.4). Undergraduate nursing and midwifery students are not allowed to administer intravenous medications.

2.0 Purpose

- 2.1 This policy provides direction toward best practice for both BSc undergraduate nursing students and their educators in relation to what aspects of peripheral intravenous (IV) infusions students may participate and/or engage in during their undergraduate education programme.

3.0 Scope

- 3.1 This policy applies to BSc undergraduate nursing students who are either supernumerary and/or in their internship year of the BSc programme.
- 3.2 This policy does **not** apply to the administration of oral medication, transfusion of blood and blood products or Total Parenteral Nutrition or other routes of administration outside of IV fluids and IV medications.
- 3.3 BSc undergraduate nursing students (neither supernumerary nor internship) are not permitted, under any circumstances, to participate in the following activities:
- The preparation or administration of blood, blood products, Total Parenteral Nutrition (TPN), or IV fluids with electrolytes (added either at ward level or pre-prepared solutions).
 - Double check blood or blood products for IV administration.
 - Flush a peripheral IV device at any stage, either before, during, or after IV fluid administration.

4.0 Legislation / Other Related Policies

4.1 It is expected that each BSc undergraduate nursing student and their educators (preceptors, RGNs, etc.) who are supervising students during clinical placements are familiar with this document, as well as with other national publications by the Nursing and Midwifery Board of Ireland and the Health Service Executive relating to nursing practice, including the following:

- An Bord Altranais (2007) *Guidance to Nurses and Midwives on Medication Management*. Nursing and Midwifery Board of Ireland, Dublin.
- Nursing and Midwifery Board of Ireland (2020) *Guidance to Registered Nurses and Midwives on Medication Management*. Nursing and Midwifery Board of Ireland, Dublin.
- Nursing and Midwifery Board of Ireland (2014) *Code of Professional Conduct and Ethics for Registered Nurses and Registered Midwives*. Nursing and Midwifery Board of Ireland, Dublin.
- Nursing and Midwifery Board of Ireland (NMBI) (2015a) *Scope of Nursing and Midwifery Practice Framework*. Nursing and Midwifery Board of Ireland, Dublin.
- Nursing and Midwifery Board of Ireland (2015b) *Recording Clinical Practice*. Nursing and Midwifery Board of Ireland, Dublin.
- Office of Nursing & Midwifery Services Director (2013) *National Policy for Administration of Intravenous Medication by Registered Nurses and Midwives*. Health Service Executive, Dublin. <http://www.lenus.ie/hse>

4.2 They must also be familiar with and adhere to policy/procedure and guidance documents from their respective Health Service Provider area, in particular local policies for the administration of IV infusion therapy.

5.0 Glossary of Terms and Definitions

5.1 **ABA:** An Bord Altranais

5.2 **ANTT: Aseptic non-touch technique:** Aims to prevent pathogenic microorganisms in sufficient quantity to cause infection, from being introduced to susceptible sites by hands, surfaces and equipment.

5.3 **BSc Nursing student:** Refers to an undergraduate student in General or Children's and General (Integrated) Nursing programmes who is registered with the School of Nursing and Midwifery, UCC.

5.4 **Direct supervision:** The supervisor (RGN, RM), is physically present and observes the procedure/activity.

5.5 **Double checking:** The process/activity of having a second colleague *independently* check the preparation of a medication for administration (ABA, 2007). These may include registered nurses, doctors or pharmacists, independently checking the medications.

5.6 **Extravasation:** An extravasation occurs when there is accidental infiltration of a vesicant or chemotherapeutic drug into the surrounding IV site.

- 5.7 **HSP:** Health service provider.
- 5.8 **Infiltration:** Occurs when fluid infuses into the tissues surrounding the venepuncture site. This sometimes happens when the tip of the catheter slips out of the vein, the catheter passes through the wall of the vein, or the blood vessel wall allows part of the fluid to infuse into the surrounding tissue.
- 5.9 **Infusion:** Fluid(s) prescribed in accordance with hospital policy and administered in accordance with the individual hospital's medication administration policy and ABA (2007) guidelines.
- 5.10 **Internship:** The student works as a member of the nursing/midwifery team and is an employee of the health service provider (Year 4/5).
- 5.11 **Intravenous medication:** A pharmaceutical delivered directly into the blood stream via a vein (Mosby's Medical Dictionary, 2009)
- 5.12 **NMBI:** Nursing and Midwifery Board of Ireland.
- 5.13 **Peripheral intravenous infusion:** The instillation into the vein of fluids via a peripheral venous catheter.
- 5.14 **Peripheral IV devices:** Cannula/catheters inserted into a small peripheral vein for therapeutic purposes such as administration of medications, fluids and/or blood products.
- 5.15 **Phlebitis:** Swelling, redness, heat, and pain related to local inflammation of the vein at or near the cannula site.
- 5.16 **Pump:** Refers to infusion pumps e.g. large volume pumps, syringe drivers, patient controlled analgesia (PCA) pumps.
- 5.17 **Supernumerary:** The student is a participant learner, additional to the scheduled complement of qualified nursing and/or midwifery staff.

6.0 **General Principles of Peripheral IV Management for BSc Nursing Students**

- 6.1 Participation in the preparation and management of IV fluids by BSc undergraduate nursing students should, at all times, be under the **direct supervision** of a **registered nurse/midwife** who has successfully completed the required intravenous study day (provided by the respective health service provider (HSP)), and has achieved competence in that practice (successfully completed assessment and supervised practice).
- 6.2 Participation in the preparation and management of IV fluids via peripheral IV device by nursing students is **strictly limited** to the following 4 fluids only:

- *Normal Saline 0.9%*
- *Hartmann's Solution*
- *Dextrose Saline*
- *Dextrose 5%*

6.3 Supernumerary nursing students are **not** permitted to **administer** IV fluids/IV preparations.

6.4 Supernumerary students who have successfully completed UCC's Intravenous Management Skills workshop and Numeracy Assessment, and received the appropriate certification are permitted to be **involved** with IV fluids (see 6.2) as outlined in Appendix 1.

6.5 Supernumerary Children's and General (Integrated) nursing students who have successfully completed the numeracy assessment in Year 3 (UCC), **AND** their "Double Checking Assessment" (CUH) on internship, are permitted to double check IV fluids in children's wards – **where hospital policy permits.**

6.6 **Internship** nursing students are permitted to be involved with IV fluids and IV medications as outlined in Appendix 1. Internship nursing students **are not permitted to administer IV medications.**

Internship nursing students must be cognisant of, and adhere to the NMBI (2020, p.18) guidelines on double-checking which states that:

'Double-checking of medications prior to administration is not a statutory requirement. However, for the administration of high-alert medications, medications whose dosage can change, dosages based on weight or medication that requires complex arithmetical calculations, local PPPGs may require a system of independent verification'.

6.7 **Internship** nursing students **are** permitted to recommence and administer the following IV fluids only and **must** be under the direct supervision/presence of a registered nurse/midwife:

- *Normal Saline 0.9%*
- *Hartmann's Solution*
- *Dextrose Saline*
- *Dextrose 5%*

6.8 All preparation and management of peripheral IV infusions by nursing students must, at all times, be in accordance with the respective HSP policies and ABA/NMBI guidance documents.

6.9 **See Appendix 1** for specific detail for BSc undergraduate nursing students (Years 2 to 5) in relation to their education/training in peripheral IV infusions in accordance with level of learning (exposure, participation, identification, internalization and dissemination).

7.0 Roles and responsibilities

- 7.1 BSc undergraduate nursing students must, at all times, adhere to the conditions of their Practice Placement Agreement (PPA), with particular reference to points 8, 16 and 17 of the PPA.
- 7.2 BSc undergraduate nursing students (supernumerary and internship) must endeavour to recognise their own limitations and to seek help/support when their level of experience is inadequate to handle a situation relating to peripheral IV infusions (preparation/management). Section 4.5 of The Scope of Nursing and Midwifery Practice Framework (NMBI 2015) provides key guidance and consideration for nurses and midwives regarding delegation, supervision and education of nursing or midwifery students in providing safe patient care. NMBI Guidance for Registered Nurses and Midwives on Medication Administration (2020) Section 7.4 page 21 states:
‘A nursing or midwifery student should only administer a medication to a patient under the direct supervision of a registered nurse or midwife when they the student, agrees to undertake the administration’.
- 7.3 BSc undergraduate nursing students must have successfully completed their IV education and numeracy assessment in the School of Nursing and Midwifery UCC (**Year 3**) prior to undertaking IV preparation and management with the 4 specified fluids outlined here:
- *Normal Saline 0.9%*
 - *Hartmann’s Solution*
 - *Dextrose Saline*
 - *Dextrose 5%*
- 7.5 Registered nurses/midwives are professionally responsible and accountable for their practice, attitudes and actions, including inactions and omissions. The registered nurse or midwife who is delegating (the delegator) is accountable for the decision to delegate. This means that the delegator is accountable for ensuring that the delegated role or activity is appropriate to the level of competence of the BSc undergraduate nursing student to perform (NMBI, 2015a).
- 7.6 It is the responsibility of the School of Nursing and Midwifery UCC to ensure that all nursing students receive the required education and training regarding peripheral IV infusion preparation and management, in accordance with this policy.

8.0 School of Nursing and Midwifery UCC Education and Training

- 8.1 **YEAR 2.** Nursing students (General and Children’s and General (Integrated)) are introduced to pharmacology and the principles of medication management (Appendix 2).
- 8.2 **YEAR 3.** At the beginning of the 3rd academic year, nursing students are introduced to the principles, preparation and management of peripheral IV infusions. This is a stand-alone peripheral IV management programme specifically designed for BSc students to address the relevant theoretical and practical aspects of peripheral IV infusion therapy including the nursing care and management of IV access devices (Appendix 2).

- 8.3 Students must undertake UCC's Intravenous Management Skills workshop and Numeracy Assessment. On successful completion of the workshop and assessments students will receive a certification email to be presented to their preceptor as evidence of completion.
- 8.4 ***YEAR 4***. Students complete an IV online numeracy assessment in semester one (Appendix 2).
- 8.5 Evidence of successful completion of the IV management programme and numeracy examination is essential in order for nursing students to participate in the preparation and management of peripheral IV infusions while on clinical placement.

References

Mosby's Medical Dictionary (2009) 8th Edition, Elsevier.

An Bord Altranais (ABA) (2007) *Guidance to Nurses and Midwives on Medication Management*. Dublin, Nursing and Midwifery Board of Ireland.
<https://www.nmbi.ie/nmbi/media/NMBI/Guidance-medicines-management.pdf>

Nursing and Midwifery Board of Ireland (2020). *Guidance for Registered Nurses and Midwives on Medication Administration* Dublin, Nursing and Midwifery Board of Ireland.
<https://www.nmbi.ie/NMBI/media/NMBI/NMBI-Medication-Administration-2020>

Nursing and Midwifery Board of Ireland (2014) *Code of Professional Conduct and Ethics for Registered Nurses and Registered Midwives*. Dublin, Nursing and Midwifery Board of Ireland.
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<https://www.nmbi.ie/Standards-Guidance/Scope-of-Practice>

Nursing and Midwifery Board of Ireland (2015b) *Recording Clinical Practice*. Dublin, Nursing and Midwifery Board of Ireland.
www.nmbi.ie/Standards-Guidance/More-Standards-Guidance/Recording-Clinical-Practice

Office of Nursing & Midwifery Services Director (2013) *National Policy for Administration of Intravenous Medication by Registered Nurses and Midwives*. Dublin, Health Service Executive. <http://www.lenus.ie/hse/handle/10147/304777>

Appendix 1

BSc General Nursing and BSc Children's and General (Integrated) Nursing students' involvement in peripheral IV infusions

YEAR 1 General YEAR 1 Integrated	YEAR 2 General YEAR 2/3 Integrated	YEAR 3 General YEAR 4 Integrated	YEAR 4 General YEAR 5 Integrated
<p>Exposure: This is limited to the nursing student <i>observing</i> a registered nurse / midwife performing the following:</p> <ul style="list-style-type: none"> ➤ Peripheral IV related documentation. ➤ Change of peripheral IV dressing using ANTT. ➤ Removal of peripheral IV cannula. ➤ Selection of prescribed IV fluid. ➤ Prime an IV line with prescribed fluid. ➤ Calculate flow rate of IV infusion and adjust using roller clamp or pump as appropriate. ➤ Preparation of infusion pump including threading tubing through device, connecting to peripheral IV cannula and commencing infusion. ➤ Troubleshooting of IV device alarms. ➤ Replace completed IV infusions with prescribed follow-on infusion. ➤ Discontinue fluids, disconnect from peripheral IV cannula and dispose appropriately. ➤ Use of pause function when attending to hygiene, clothes change or elimination needs. 	<p>Exposure: This is limited to the nursing student <i>observing</i> a registered nurse / midwife performing the following:</p> <ul style="list-style-type: none"> ➤ Selection of prescribed IV fluid. ➤ Prime an IV line with prescribed fluid. ➤ Calculate flow rate of IV infusion and adjust using roller clamp or pump as appropriate. ➤ Preparation of infusion pump including threading tubing through device, connecting to peripheral IV cannula and commencing infusion. ➤ Troubleshooting of infusion device alarms. ➤ Replace completed IV infusions with prescribed follow-on infusion. ➤ Discontinue fluids, disconnect from peripheral IV cannula and dispose appropriately. ➤ Use of pause function when attending to hygiene, clothes change or elimination needs. ➤ Use of pause function in the event of suspected phlebitis or extravasation. <p>Participation under direct supervision of a registered nurse/midwife:</p>	<p>Participation under direct supervision of a registered nurse/midwife with the following:</p> <ul style="list-style-type: none"> ➤ Selection of one of the 4 specified, prescribed IV fluids. ➤ Prime an IV line with one of the 4 specified, prescribed IV fluids only. ➤ Calculate flow rate of IV infusion and adjust using roller clamp or pump as appropriate. ➤ Preparation of infusion pump including threading tubing through device, connecting to peripheral IV cannula. ➤ Troubleshooting of infusion device alarms. ➤ Replace completed IV infusions with one of the 4 specified, prescribed follow-on infusion. ➤ Discontinue fluids, disconnect from peripheral IV cannula and dispose appropriately. <p>Identification</p> <ul style="list-style-type: none"> ➤ Observation and documentation in relation to peripheral IV cannula. ➤ Change of dressing of peripheral IV cannula using ANTT. ➤ Removal of peripheral IV cannula and completion of relevant documentation. ➤ Supernumerary nursing students who have successfully completed 	<p>Participation under direct supervision of a registered nurse/midwife with the following:</p> <ul style="list-style-type: none"> ➤ Selection of one of the 4 specified, prescribed IV fluids. ➤ Double check for IV fluids as listed in policy. ➤ Prime an IV line with one of the 4 specified, prescribed IV fluids. ➤ Calculate flow rate of IV infusion and adjust using roller clamp or pump as appropriate. ➤ Preparation of infusion pump including threading tubing through device, connecting to peripheral intravenous cannula. ➤ Troubleshooting of infusion device alarms. ➤ Replace completed IV infusions with one of the 4 specified, prescribed follow-on infusion. ➤ Discontinue fluids, disconnect from peripheral IV cannula and dispose appropriately. ➤ Seek permission to use the pause function when attending to hygiene, clothes change or elimination needs. ➤ Use of pause function in the event of suspected phlebitis or extravasation and notify a registered nurse/midwife immediately. <p>Internalisation</p>

<p>➤ Use of pause function in the event of suspected phlebitis or extravasation.</p> <p>Participation under direct supervision of a registered nurse/midwife:</p> <p>➤ Removal of peripheral IV cannula and completion of relevant documentation.</p> <p><i>Supernumerary nursing students are <u>not</u> permitted to press the stop, start button, recommence or administer IV fluids</i></p>	<p>➤ Change of dressing of peripheral IV cannula using ANTT.</p> <p>➤ Removal of peripheral IV cannula and completion of relevant documentation.</p> <p><i>Supernumerary nursing students are <u>not</u> permitted to press the stop, start button, recommence or administer IV fluids</i></p>	<p>the numeracy assessment in Year 3, and received appropriate stamp in their clinical booklet, may double check IV fluids.</p> <p><i>Supernumerary nursing students are <u>not</u> permitted to press the stop, start button, recommence or administer IV fluids</i></p>	<p>➤ Observation and documentation in relation to peripheral IV cannula.</p> <p>➤ Change of dressing of peripheral IV cannula using ANTT.</p> <p>➤ Removal of IV cannula and completion of relevant documentation.</p> <p>➤ Double check for IV fluids</p> <p>➤ Double check IV medications as per local hospital policy.</p> <p>➤ Sign as the “second checker” <u>in accordance with local HSP policy</u> and NMBI double-checking medications guidelines (2007, p.11,12) https://www.nmbi.ie/nmbi/media/NMBI/Publications/Guidance-Medicines-Management.pdf?ext=.pdf and only under direct supervision or, in the presence of, a registered nurse/midwife.</p> <p><i>Internship students only are permitted to:</i></p> <p><u>Press the start button to commence/recommence the following IV fluids only and under the direct supervision of a registered nurse/midwife:</u></p> <p><i>Normal Saline 0.9%</i> <i>Hartmann’s Solution</i> <i>Dextrose Saline</i> <i>Dextrose 5%</i></p> <p><u>Where hospital policy permits</u></p>
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APPENDIX 2

Medication and Intravenous Management Education

Medication and Intravenous Management Education
for
BSc General and Children's and General (Integrated) Nursing Students
School of Nursing and Midwifery, UCC



YEAR TWO: NU2003

- Pharmacology and Medication Management for Nurses and Midwives (5 credits)
- Workbook on drug calculations
- Completion of an online drug calculations MCQ (oral and IV medications)
- Completion of HSEland Medicines Management programme



YEAR THREE: ESSENTIAL SKILLS – NU3068, NU3082

- Online Theoretical Instruction and Assessment (Infusion pumps and devices; Priming and connecting an infusion set; Intravenous infusions & Problem solving: Visual Infusion Phlebitis (VIP) Score).
- IV Skills Workshop:
 - Station 1: Preparation and Administration of IV Fluids
 - Station 2: Infusion Pump Orientation and Practice
 - Station 3: Peripheral Venous Cannula (PVC) Assessment, Dressing Change and Documentation
- Online Numeracy Assessment (Pass mark 100%)