NATIONAL NURSING AUDIT MINISTRY OF HEALTH MALAYSIA

ELEMENT 5: **CONTINUUM OF CARE**

5.2 ADMINISTRATION OF INTRAVENOUS (IV) INFUSION

1. INTRODUCTION

Vascular access devices are essential to contemporary nursing, allowing the direct administration of supportive and interventional therapy into the bloodstream. Many different types of vascular access devices are in use, but the most common is the peripheral intravenous catheter (Tuffaha et al., 2018).

Intravenous fluid therapy is frequently and ubiquitously used across clinical disciplines, and it is considered indispensable for treating various serious diseases. Although this practice is currently widely used, the choice and amount of fluid, the timing, and the method of application have long been controversial (Mayerhöfer et al.,2023)

2. OBJECTIVES

2.1 All intravenous infusions are administer as prescribed.
2.2 Patient receive safe administration of intravenous infusion.
2.3 Accurate and complete documentation.

3. METHODOLOGY

3.1	Design	:	Direct observation of IV line and gathering of information from documents.
3.2	Setting	:	Hospital/ Institution
3.3	Inclusion criteria	:	All patients on intravenous peripheral infusions line including those with infusion devices
3.4	Exclusion criteria	:	Patients • Receiving blood/ blood product transfusion • On controlled analgesia (PCA) • With central venous lines (CVL)
3.5	Population	:	Registered Nurse
3.6	Sample design	:	Convenient sampling
3.7	Sample size	:	30% of Registered Nurses in hospital/ institution
3.8	Frequency	:	Once a year
3.9	Duration	:	2 months
4.0	Instrument	:	Audit Form (E5 AF 5.2 Pind.1/2026)

4. STANDARD

≥ 95% compliance to the standard for administration of intravenous infusion.

5. DEFINITION OF OPERATIONAL TERMS

NO	TERMS	DEFINITIONS
1.	CONCURRENT IV REGIME	A 24-hour plan that specifies the fluid type and time frame for the prescribed infusion (Emstmeyer & Christman, 2021).
2.	WRITTEN PRESCRIPTION	Any legal orders of intravenous regime must be endorsed in the patient's case notes/ Electronic Medical Record (EMR)/ Medical Information system on intravenous infusion.

3.	VERIFICATION OF INFUSION IN PROGRESS INCLUDES THE FOLLOWING	• Right solution. • Intravenous drip bottle in progress must indicate time commence and time completed. • Valid solution (not expired). • No change in color. • No sediments/ particles. • Titration of flow rate accordingly to the right flow rate. • Dry infusion – the fluid level in the intravenous (IV) bottle is below the spike, or less than half full in the drip chamber..

6. WORK PROCESS

Structure
1. Each patient has current written prescription. 2. There is a Standard Operating Procedure (SOP)/ manual procedure for administration of intravenous infusion. 3. The nurse is knowledgeable about the care and maintenance of intravenous infusions.

Process
1. Acknowledge/ Greet patient 1.1 Identify right patient 1.2 Verify prescription 2. Prepare a schedule for the regimen 2.1 Perform hand hygiene. 2.2 Prepare and check the intravenous solution. 2.3 Inform and explain the procedure to the patient. 2.4 Listen to and respond promptly and politely to the patient's questions. 3. Check for patency of line 3.1 Assess the infusion site for signs of phlebitis and dislodgment 3.2 Take appropriate measures if an adverse reaction is identified. (If an issue is found, it should be addressed before proceeding.) 3.3 Regulate the flow rate as prescribed. 3.4 Monitor the patient's response and document. 4. Monitor intake and output regularly. 5. Document fluid infused in intake/ output chart.

Outcome
1. Patient received safe administration of intravenous infusion during hospital/ institution stay. 2. Patient informed and received the intravenous regime as prescribed. 3. Intravenous infusion errors are detected early and appropriate measures taken accordingly. 4. Accurate and complete documentation.

7. TECHNICAL SPECIFICATION FOR ADMINISTRATION OF INTRAVENOUS (IV) INFUSION

Indicator	Percentage of compliance to the standard of administration for intravenous (IV) infusions.
Rationale	The nurse's is responsible in managing IV therapy include assessing, preparing, calculating the flow rates, monitoring to ensure: • Patients received safe administration of intravenous infusion during hospital stay. • Patient informed and received the intravenous regime as prescribed. • Intravenous infusion errors are detected early, and appropriate measures taken accordingly. • Accurate and complete documentation. (Emstmeyer & Christman, 2021)
Definition Of Terms	1. Intravenous (IV) - to administer of fluids, medications, or nutrients directly into a vein using a needle or catheter. This method allows for rapid delivery into the bloodstream, making it one of the most effective and commonly used routes for treatment in medical practice. 2. Line In Situ and Patent - the maintenance of an uninterrupted flow through the intravenous (IV) line, with no evidence of tissue infiltration, phlebitis, air bubbles, or

	blood clots along the line. 3. Verification of intravenous infusion progress - these involves continuously monitoring and confirming that the correct medication or fluid is being administered at the proper dosage, flow rate, and through an intact IV line, while also ensuring the patient's response is being appropriately tracked and documented to prevent complications such as infiltration, phlebitis, or other adverse reactions.
Criteria	**Inclusion:** All patients on intravenous peripheral infusions line including those with infusion devices **Exclusion:** Patients who are: i. Receiving blood/ blood product transfusion ii. On controlled analgesia (PCA) iii. With central venous lines (CVL)
Numerator	Total conformance of items
Denominator	Total number of items
Formula	$\frac{\text{Numerator}}{\text{Denominator}} \times 100\%$
Standard	**≥ 95%**
Data Collection	1. **Where:** Data will be collected from hospitals or institutions. 2. **Who:** Data will be collected by the NNA Committee in the hospital/institution. 3. **How to collect:** Audit Form (E5 AF 5.2 Pind.1/2026) 4. **How frequent:** Once a year and duration 2 months 5. **Who should verify:** All data must be verified by the Head of Nursing.
References	Emstmeyer, K., & Christman, E. (Eds.). (2021). *Nursing skill book. Chippewa Valley Technical College.*

8. AUDIT FORM

NATIONAL NURSING AUDIT MINISTRY OF HEALTH MALAYSIA	**VERSION 8/ Pind.1/2026**
ELEMENT 5 : CONTINUUM OF CARE	
TOPIC : 5.2 ADMINISTRATION OF INTRAVENOUS INFUSION	**DATE: 15 JAN 2026**
DOCUMENT NO : E5 AF 5.2 Pind.1/2026	

OBJECTIVES

1. All intravenous infusions are administered as prescribed.
2. Patient receive safe administration of intravenous infusion.
3. Accurate and complete documentation.

STANDARD	**:**	≥ 95% compliance to the standard for administration of intravenous infusion

Date of Audit : .....

Locality : .....

Auditor : .....

Auditee : .....

N.B. Instructions for Auditors

1. To tick [√] at appropriate column.
2. S/ T/ D indicate soft skill/ technical skill/ documentation respectively.

S/N	ITEM		SOURCE OF INFORMATION	YES	NO
S1	Greet and acknowledged patient		Listen/ observe		
T2	Does the nurse check the infusion in progress, to ensure proper administration and patient safety?				
	T2.1	Is the IV solution concurrent with the prescribed regimen?	Observe and check		
	T2.2	Does the intravenous bottle have an indicator of the start and completion time?	Observe and check		
	T2.3	Does the nurse check the expiry date on the IV solution?	Observe and check.		
	T2.4	2.4.1 - Does the nurse check the solution for any change in color?	Observe and check		
		2.4.2 - Does the nurse check the solution for any sediments or particles?	Observe and check.		
	T2.5	Is the IV infusion titrated as scheduled?	Observe and check.		

	T2.6	Is the fluid level in the intravenous bottle above the spike or more than half in the chamber?	Observe and check.		
T3	Is the IV line in situ, patent, and inspected?		Observe and check		
T4	Observe for signs of Phlebitis:		Listen/ check		
D5	Is the documentation accurate and complete?		Observe and check		

AUDIT REPORT

(Please [√] the appropriate box)

Rating:

Criteria	Item	Conformance	Non conformance
Technical	9		
Documentation	1		
Soft skill	1		
Total	**11**		

Calculation: _____ X 100% = _____

REMARKS:

Auditor (name and signature) : …….

**Calculation: $\frac{\text{Total conformance of items}}{\text{Total number of items}}$ X 100%

9. REFERENCES

Emstmeyer, K., & Christman, E. (Eds.). (2021). *Nursing skill book. Chippewa Valley Technical College.*

Mayerhofer, T., Shaw, A. D., Wiedermann, C. J., & Joannidis, M. (2023). *Fluids in the ICU: Which is the right one? Nephrology, Dialysis, Transplantation: Official Publication of the European Dialysis and Transplant Association - European Renal Association, 38(7), 1603–1612.* https://doi.org/xxxxx

Tuffaha, H. W., Rickard, C. M., Webster, J., Marsh, N., Gordon, L., Wallis, M., North, N., & Scuffham, P. A. (2018). Cost-effectiveness analysis of clinically indicated versus routine replacement of peripheral intravenous catheters. *Applied Health Economics and Health Policy, 16*(2), 209–221. https://doi.org/10.1007/s40258-017-0369-6