

**National Competency Framework  
for Registered Nurses  
in Adult Critical Care**

**Intermittent Haemodialysis (IHD)**

**Speciality Competencies**



## Foreword

### Intended Audience

- This competency is intended for use alongside the National Critical Care Nurses Competency package in centres with and on-site renal services (defined as tier 1 or 2 centres in the ACC renal service specification). Robust governance and collaboration between local critical care and renal services is a mandatory prerequisite.
- This document is designed for nurses who look after patients requiring Intermittent Haemodialysis (IHD) in adult critical care, when this is considered a viable alternative to conventional Continuous Veno-Venous Haemofiltration (CVVH).

### Aims and Objectives

The aim of this document is to identify knowledge gaps and highlight important issues around the care of patients receiving Intermittent Haemodialysis. With this knowledge the nurse can care for and understand the needs of the patient receiving intermittent Haemodialysis and understand the importance of involving the specialist team.

### Assessment and Assessors

These competencies are intended to be used in addition to the Critical Care Network's (CC3N) Step Competencies for nurses working in a critical care environment which provides care for patients that can deliver Intermittent Haemodialysis on a regular basis. The CC3N Step One, Two and Three Competencies should be completed first as a pre-requisite. While these are recommendations it is also acknowledged that clinical environments and staffing arrangements may vary from unit to unit. This may require adaptation to how this document is operationalised. It is strongly advocated that adaptations to use of this document are approved by Nursing Leads and Unit Managers within the speciality.

This document is designed to be included into the National Competency Framework for Registered Adult Critical Care Nurses. Competencies can be signed by an Assessor who has undertaken post registration critical care specialist training in the relevant speciality and has relevant experience and qualification as a mentor / assessor preferably with an educational qualification.

Competence is defined throughout this document as:

**‘The combination of skills, knowledge and attitudes, values and technical abilities that underpin safe and effective critical care nursing care and interventions’**

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## Learning Contract

The following Learning Contract applies to the Individual Learner, Lead Assessor/Mentor and Unit Manager/Lead Nurse and should be completed before embarking on this competency development programme.

It will provide the foundations for:

- Individual commitment to learning
- Commitment to continuing supervision and support
- Provision of time and opportunities to learn

### LEARNERS RESPONSIBILITIES

As a learner I intend to:

- Take responsibility for my own development
- Successfully complete a period of induction/preceptorship as locally agreed
- Form a productive working relationship with mentors and assessors
- Deliver effective communication processes with patients and relatives, during clinical practice
- Listen to colleagues, mentors and assessors advice and utilise coaching opportunities
- Use constructive feedback positively to inform my learning
- Meet with my Lead Assessor/Mentor at least 3 monthly
- Adopt a number of learning strategies to assist in my development
- Put myself forward for learning opportunities as they arise
- Complete all Step 4 competencies in the agreed time frame
- Use this competency development programme to inform my annual appraisal, development needs and NMC Revalidation
- Report lack of mentorship/supervision or support directly to the Lead Assessor/Mentor, and escalate to the Clinical Educator/Unit Manager or equivalent if not resolved.

Learner Name (Print) .....

Signature ..... Date: .....

### LEAD ASSESSOR RESPONSIBILITIES

As a Lead Assessor I intend to:

- Meet the standards of regulatory bodies (NMC, 2008)
- Demonstrate on-going professional development/competence within critical care
- Promote a positive learning environment
- Support the learner to expand their knowledge and understanding
- Highlight learning opportunities
- Set realistic and achievable action plans
- Complete assessments within the recommended timeframe
- Bring to the attention of the HEI, Education Lead and/or Manager concerns related to the individual nurses learning and development as appropriate
- Plan a series of learning experiences that will meet the individuals defined learning needs
- Prioritise work to accommodate support of learners within their practice roles
- Provide feedback about the effectiveness of learning and assessment in practice

Lead Assessor Name (Print) .....

Signature ..... Date: .....

### CRITICAL CARE LEAD NURSE/MANAGER

As a critical care service provider I intend to:

- Facilitate a minimum of 40% of learners' clinical practice hours with their mentor/assessor and/or Practice Educator or delegated appropriate other within the multidisciplinary team
- Provide and/or support clinical placements to facilitate the learners' development and achievement of the core competency requirements
- Regulate and quality assure systems for mentorship and standardisation of assessment to ensure validity and transferability of the nurses' competence

Lead Nurse/Manager Name (Print) .....

Signature ..... Date: .....

## Authorised Signature Record

To be completed by any Lead Assessor/Mentor or Practice Educator.

Print Name	Sample Signature	Designation	NMC Number	Organisation

## Anatomy & Physiology

You must be able to demonstrate your knowledge using a rationale through discussion, and the application to your practice.	Competency Fully Achieved Date/Sign
<b>Reasons for fluid redistribution in critical illness</b>	
<b>Auto-regulation and the hormones that affect fluid homeostasis - renin angiotensin, Anti Diuretic Hormone (ADH), aldosterone</b>	
<b>Causes of acute kidney injury (AKI)</b> <ul style="list-style-type: none"> <li>• Pre-renal</li> <li>• Intra-Renal (intrinsic kidney failure)</li> <li>• Post-renal (obstruction)</li> </ul>	
<b>Review a patient's arterial blood gases and discuss their interpretation in relation to acid base balance and electrolytes in order to optimise therapy</b>	
<b>Review a patient's biochemistry and haematology results and discuss their interpretation in relation to AKI</b>	
<b>Evaluate the effectiveness of fluid replacement and medications and adjust therapy in response to a patient's condition</b>	
<b>Treatment choices available and the principals involved in:</b> <ul style="list-style-type: none"> <li>• CCCHDF</li> <li>• CVVHD</li> <li>• CVVH</li> <li>• SLEDD</li> <li>• Intermittent Haemodialysis (IHD)</li> <li>• Peritoneal dialysis (PD)</li> </ul>	
The reasons why intermittent renal replacement therapy may be the treatment of choice above continuous haemofiltration.	
Understanding of the intermittent renal replacement therapy prescription.	
Understanding of virology /BBV relevant to IHD	

## Intermittent Dialysis Therapy

You must be able to undertake the following in a safe and professional manner:	Competency Fully Achieved Date/Sign
Pre assessment of the patient prior to commencement of intermittent renal replacement therapy, including: <ul style="list-style-type: none"> <li>• Blood profile</li> <li>• Fluid Balance</li> <li>• Cardiovascular Stability</li> <li>• Dialysis prescription</li> </ul>	
The care and management of the vascular access required for intermittent renal replacement therapy. Including: <ul style="list-style-type: none"> <li>• Assisting with line insertion</li> <li>• Maintenance of asepsis</li> <li>• Safety checks associated with vascular access</li> </ul>	

INTERMITTENT HAEMODIALYSIS COMPETENCIES

<ul style="list-style-type: none"> <li>• Maintenance of the patency of vascular access</li> <li>• Vascular access assessment Association of Nephrology Nurses (ANN)</li> <li>• Dressing changes and security of the device in line with local policy</li> <li>• Documentation</li> </ul>	
<p>Preparation of the machine, including:</p> <ul style="list-style-type: none"> <li>• Check machine is clean &amp; disinfect pre dialysis</li> <li>• Connect water / drainage</li> <li>• Check water quality, salt, Reverse Osmosis (RO) working</li> <li>• Lining and priming of dialysis machine</li> <li>• Check dialyser – type, size, clearances</li> <li>• Check dialysate - type</li> </ul>	
<p>Knowledge of dialysis concentrates (dialysate) available and their appropriate use</p>	
<p>Ability to programme haemodialysis machine, including:</p> <ul style="list-style-type: none"> <li>• Treatment time</li> <li>• Total fluid volume to be removed</li> <li>• Isolated / intermittent ultrafiltration</li> <li>• Dialysis adequacy (Kt/V)</li> <li>• Dialysate temperature</li> <li>• Sodium level</li> </ul>	
<p>Anticoagulation:</p> <ul style="list-style-type: none"> <li>• Prepare the chosen anticoagulation therapy in line with local policy</li> <li>• Safely administer anticoagulation therapy</li> <li>• Establish monitoring plan for full blood profile including coagulation profiles</li> <li>• Conduct point of care testing as required</li> <li>• Titrate anticoagulation therapy in response to results according to local policy.</li> </ul>	
<p>Demonstrate connection procedure for central venous catheters, maintaining asepsis throughout. <i>(Arteriovenous fistulae ONLY to be accessed by competent Renal Service staff)</i></p>	
<p>Monitor the <i>patient's condition during treatment</i> and adjust <i>therapy appropriately</i>. Check connections to dialysis access regularly.</p>	
<p>Demonstrate ability to recognise deteriorating patient and take appropriate actions especially with regard to fluid depletion and electrolyte imbalance.</p>	
<p>Observe, monitor and troubleshoot alarms associated with</p> <ul style="list-style-type: none"> <li>• Air detector</li> <li>• Arterial pressure (AP) and venous pressure (VP)</li> <li>• Transmembrane (TMP) pressure</li> <li>• Clotted dialyser</li> <li>• Temperature alarm</li> <li>• Conductivity alarm</li> <li>• Spanner</li> <li>• Blood leak</li> <li>• Water failure &amp; power failure</li> <li>• Microbubbles in venous chamber</li> </ul>	

## INTERMITTENT HAEMODIALYSIS COMPETENCIES

<p>On completion of treatment perform</p> <ul style="list-style-type: none"> <li>• Disconnection procedure (including locking of lumens in central venous catheter)</li> <li>• Post dialysis observations / evaluation / documentation</li> <li>• Cleaning and sterilisation of machine and appropriate disposal of consumables.</li> </ul>	
<p>Be aware and able to manage dialysis associated emergencies</p> <ul style="list-style-type: none"> <li>• Cardiac arrest</li> <li>• Hypotension</li> <li>• Dislodged needle</li> <li>• Line disconnection</li> <li>• Disequilibrium</li> </ul>	

### Associated Pharmacology

You must be able to demonstrate your knowledge using a rationale through discussion, and the application to your practice	Competency Fully Achieved Date/Sign
<p>Commonly used medications in AKI, indications, contraindications and the appropriate care of the patient during therapy</p> <ul style="list-style-type: none"> <li>• Diuretics</li> <li>• Dextrose and insulin</li> <li>• Salbutamol, nebulised</li> <li>• Calcium</li> <li>• Calcium resonium</li> <li>• Novel potassium binding drugs (eg. Lokelma, Veltassa)</li> <li>• Sodium bicarbonate</li> </ul>	
<p>Evaluate the effectiveness of fluid replacement and medications and adjust care accordingly</p>	

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