



**INSTITUTE
OF MEDICINE**

ROYAL COLLEGE OF
PHYSICIANS OF IRELAND

INTERNATIONAL CLINICAL FELLOWSHIP TRAINING IN

Nephrology



This curriculum of training in Nephrology was developed in 2021 and undergoes an annual review by Dr Aisling O’Riordan, National Specialty Director, Colm Small, Head of Training and Education, and by the Nephrology Training Committee. The curriculum is approved by the Institute of Medicine.

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Introduction

The International Clinical Fellowship Programme (ICFP) provides a route for overseas doctors wishing to undergo structured and advanced postgraduate medical training in Ireland. The ICFP enables suitably qualified overseas postgraduate medical trainees to undertake a fixed period of active training in clinical services in Ireland.

The purpose of the ICFP is to enable overseas trainees to gain access to structured training and in active clinical environments that they cannot get in their own country, with a view to enhancing and improving the individual's medical training and learning and, in the medium to long term, the health services in their own countries.

This Programme will allow participants to access a structured period of training and experience as developed by the Royal College of Physicians of Ireland to specifically meet the clinical needs of participants as defined by their home country's health service.

Aims

Upon satisfactory completion of the ICFP, the doctor will be **competent** to undertake comprehensive medical practice in their chosen specialty in a **professional** manner, in keeping with the needs of the healthcare system.

Competencies, at a level consistent with practice in the specialty, will include the following:

- Patient care that is appropriate, effective and compassionate dealing with health problems and health promotion.
- Medical knowledge in the basic biomedical, behavioural and clinical sciences, medical ethics and medical jurisprudence and application of such knowledge in patient care.
- Interpersonal and communication skills that ensure effective information exchange with individual patients and their families and teamwork with other health professionals, the scientific community and the public.
- Appraisal and utilisation of new scientific knowledge to update and continuously improve clinical practice.
- Capability to be a scholar, contributing to development and research in the field of the chosen specialty.
- Professionalism.
- Ability to understand health care and identify and carry out system-based improvement of care.

Professionalism

Medical professionalism is a core element of being a good doctor. Good medical practice is based on a relationship of trust between profession and society, in which doctors are expected to meet the highest standards of professional practice and behaviour. It involves partnership between patient and doctor that is based on mutual respect, confidentiality, honesty, responsibility and accountability. In addition to maintaining clinical competence, a doctor should also:

- Show integrity, compassion and concern for others in day-to-day practice
- Develop and maintain a sensitive and understanding attitude with patients
- Exercise good judgement and communicate sound clinical advice to patients
- Search for the best evidence to guide professional practice
- Be committed to continuous improvement and excellence in the provision of health care whether working alone or as part of a team

Prior to commencing their sponsored clinical placements, all participants will also be required to undergo the mandatory screening requirements of the relevant clinical site/service including occupational health assessment and Garda/Police clearance.

Training Programme Duration & Organisation of Training

The period of clinical training that will be provided under the International Clinical Fellowship Programme (ICFP) for medical specialities is up to 3 years, after which the overseas doctors will be required to return to their country of origin. It should be noted that the standard programme length is two years and that to progress to the third year of training, trainees must hold the full MRCP/UK.

- Each ICFP is developed by the Royal College of Physicians of Ireland will be specifically designed so as to meet the training needs of participants to support the health service in their home country.
- All appointees to the ICFP will be assessed by the Royal College of Physicians of Ireland to ensure that they possess the necessary requirements from a training and clinical service perspective.
- Each overseas doctor participating in the ICFP will be enrolled with the Royal College of Physicians of Ireland and will be under the supervision of a consultant doctor who is registered on the Specialist Division of the Register of Medical Practitioners maintained by the Medical Council and who is an approved consultant trainer.
- Appointees to the ICFP will normally be registered on the Supervised Division of the Register of Medical Practitioners maintained by the Medical Council in Ireland.
- Appointees will agree a training plan with their trainers at the beginning of each training year.
- For the duration of their International Medical Graduate (IMG) programme and associated clinical placements, all participants will remain directly employed and directly paid by their sponsoring state at a rate appropriate to their training level in Ireland and benchmarked against the salary scales applicable to NCHD's in Ireland;
- Successful completion of an ICFP will result in the participant being issued with a formal Certificate of completion for the Fellowship Programme by the Royal College of Physicians of Ireland. This Certificate will enable the participant's parent training body in their sponsoring home country to formally recognise and accredit their time spent training in Ireland.

The training programme offered will provide opportunities to fulfil all the requirements of the curriculum of training. There will be posts in both general hospitals and teaching hospitals.

Each post within the programme will have a named trainer/educational supervisor and programmes will be under the direction of the National Specialist Director of the relevant medical speciality to be confirmed by the College. Programmes will be as flexible as possible consistent with curricular requirements, for example to allow the trainee to develop their sub-specialty interest.

ePortfolio logbook

Each trainee is responsible for maintaining an up-to-date record of progress through training and compiling a portfolio of achievements for presentation at each annual assessment review. The trainee also has a duty to maximise opportunities to learn, supplementing the training offered with additional self-directed learning in order to fulfil all the educational goals of the curriculum.

Up-to-date training records and an ePortfolio of achievements will be maintained by the trainee throughout. The training records will be countersigned as appropriate by the trainers to confirm the satisfactory fulfilment of the required training experience and the acquisition of the competencies set out in the training plan. They will remain the property of the trainee and must be produced at their annual assessment review.

Trainees must co-operate with the College in completing their training plan.

It is in a trainee's own interest to maintain contact with the Royal College of Physicians of Ireland, and to respond promptly to all correspondence relating to training. At review, your ePortfolio will be examined.

Review

A consultant trainer/educational supervisor will be identified for each participant in the programme. He/she will be responsible for ensuring that the educational potential of the post is translated into effective training which is being fully utilized. Only departments approved for Training by the Royal College of Physicians of Ireland and its constituent training bodies will be used.

The training objectives to be secured should be agreed between each trainee and trainer at the commencement of each posting in the form of a written training plan. The trainer will be available throughout, as necessary, to supervise the training process. In each year trainees undergo a formal review by an appropriate panel. The panel will review in detail the training record, will explore with the trainee the range of experience and depth of understanding which has been achieved and consider individual trainer's reports. An opportunity is also given to the trainee to comment on the training being provided; identifying in confidence any deficiencies in relation to a particular post.

A quarterly and annual review of progress through training will be undertaken on behalf of the International Clinical Fellowship Programme (ICFP). These will include assessments and reports by educational supervisors, confirmation of achievements and the contents of the ePortfolio will be reviewed. At some or all of these annual reviews a non-specialty assessor will be present capable of addressing core competencies.

The award of a Certificate of completion will be determined by a satisfactory outcome after completion of the entire series of assessments.

Generic Components

This chapter covers the generic components which are relevant to international trainees of all specialties but with varying degrees of relevance and appropriateness, depending on the specialty.

As such, this chapter needs to be viewed as an appropriate guide of the level of knowledge and skills required from all trainees with differing application levels in practice.

Specialty Section

Section 1: Fluid, Electrolyte, and Acid-Base Disturbances

Objective: To provide the trainee with the skills and knowledge to assess and manage patients with fluid, electrolyte and acid base disturbances at a specialist level

KNOWLEDGE

- The clinical importance of fluid, electrolyte and acid base abnormalities
- The physiology of water, electrolyte and acid base metabolism
- The pathophysiology of sodium, potassium, and hydrogen ion imbalance, and dysregulation of water homeostasis
- Methods used to investigate fluid, electrolyte, and acid base abnormalities
-

SKILLS

- Assessing patients with disorders of fluid, electrolyte, and acid base homeostasis and administration of appropriate management
- Interpretation of arterial blood gases quickly and accurately and giving a focused differential diagnosis for acid-base disorders
- Ordering and interpreting appropriate investigations for electrolyte and acid base disorders
- Management of patients with fluid, electrolyte and acid base disorders
- Diagnosis and management of patients with poisonings presenting with acid-base disturbance
- Explaining the implications of familial disorders
-

ASSESSMENT & LEARNING METHODS

Case-based discussion (CBD), Mini-clinical evaluation exercise (mini-CEX), NephSAP continuous assessment (NCA), In-Training examination (ASN-ITE), European Specialty Examination in Nephrology (ESENeph)

St. Vincent's University Hospital study day

Section 2. Disorders of Divalent Ions and CKD-Mineral Bone Disease

Objective: To provide the trainee with the skills and knowledge to assess and manage patients with disorders of divalent ions, chronic kidney disease (CKD), mineral bone disease (CKD-MBD) at a specialist level

KNOWLEDGE

- The physiology of calcium, phosphate, bone and mineral metabolism and the pathophysiology of CKD-MBD
- The use of biochemical tests, imaging techniques and histology in the diagnosis and management of CKD-MBD
- Indications for and the clinical use of dietary modification, phosphate binders, vitamin D preparations, calcimimetic drugs and parathyroidectomy
- The assessment of response to treatment for CKD-MBD
- The role of vitamin D in kidney disease
 - Disorders of phosphate, magnesium and calcium balance

SKILLS

- Interpretation of the results of biochemical, radiological and histological investigations in patients with disorders of bone and mineral metabolism
- Diagnosis and management of CKD-MBD in patients with pre-dialysis CKD
- Management of CKD-MBD in patients on renal replacement therapy
- Identification and management of disorders of phosphate, magnesium and calcium balance
- Prevention, diagnosis and management of secondary and tertiary hyperparathyroidism

ASSESSMENT & LEARNING METHODS

CBD, Mini-CEx, NCA, ASN-ITE, ESENeph
Cork University Hospital study day

Section 3: Acute Kidney Injury and Critical Care Nephrology

Evaluation

Objective: To provide the trainee with the skills and knowledge to assess and manage patients with acute kidney injury (AKI) at a specialist level.

KNOWLEDGE

- The epidemiology, diagnostic evaluation and pathogenesis of AKI
- The pathophysiology of AKI in different clinical scenarios e.g. acute tubular necrosis, glomerulonephritis, etc.
- Methods available to grade severity of AKI
- Methods of investigation relevant to AKI

Medication dosing and safe and effective prescribing for patients with AKI

Treatment options: renal replacement therapy (including plasma exchange) and treatment relevant to the underlying cause of AKI (including potential adverse effects) such as the management of common AKI syndromes, including:

- Cardiorenal syndrome
- Hepatorenal syndrome
- Sepsis-associated AKI
- Radiocontrast nephropathy

SKILLS

Taking a history for AKI focusing on drug, social and environmental factors

Performing a reliable and accurate clinical examination to assess or diagnose AKI and differentiates pre-renal failure, renal failure and urinary tract obstruction

Ordering, interpreting and acts upon investigations appropriately including biochemistry, haematology, microbiology, immunology and imaging

Performing examinations of the urine sediment for the assessment of AKI

Performing bedside ultrasound to identify kidney obstruction and kidney size (optional)

Identifies patients at high risk of AKI and institutes preventative measures

Initiation of appropriate specialist management of AKI and the underlying cause (including renal replacement therapy, immunosuppression, plasmapheresis etc.)

ASSESSMENT & LEARNING METHODS

CBD, Mini-CEX, NCA, ASN-ITE, ESENeph

Mater Misericordiae University Hospital study day

Renal Replacement Therapies in AKI

Objective: To provide the trainee with the skills and knowledge to prescribe and manage renal replacement therapy in acute kidney injury (AKI)

KNOWLEDGE

The indications for acute dialysis

The principles of haemodialysis, haemofiltration and haemodiafiltration and indications for their use

- The options for vascular access for acute renal replacement therapy

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SKILLS

Assesses the suitability of a patient for haemodialysis or haemofiltration

Prescribes haemodialysis and haemofiltration safely, adjusts prescriptions appropriately and monitors response to treatment

Prescribes medication safely and appropriately in patients with acute kidney injury

Adjusts dialysis prescription in complex cases e.g. head injury, morbid obesity, acute liver failure, acute poisoning or drug overdose

ASSESSMENT & LEARNING METHODS

CBD, Mini-CEX, NCA, ASN-ITE, ESENeph

Mater Misericordiae University Hospital study day

Section 4: Chronic Kidney Disease and Progression

Objective: To provide the trainee with the skills and knowledge to assess and manage patients with CKD at a specialist level.

KNOWLEDGE

- The causes of CKD
- The classification and stages of CKD
- Investigations used to assess the cause, severity and reversibility of CKD
- The use of estimating equations for glomerular filtration rate in the assessment of kidney function and diagnosis of CKD
- Natural history, timing of metabolic complications and prognosis of CKD
- Risk factors for CKD progression and their management
- The pathophysiology, diagnosis and management of diabetic nephropathy
- The pharmacology of medications in CKD and necessary dose adjustments
- The role of conservative or non-dialysis care of CKD in the elderly
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SKILLS

- Taking an accurate clinical history in the assessment of CKD including drug history, family, social and environmental history
- Identify and treats reversible causes of CKD
- Managing the non-renal complications of CKD
- Identifying and treating cardiovascular risk factors in CKD patients, with appropriate referral for specialist cardiology review (including potential kidney transplant recipients)
- Discussing treatment options with patients appropriately and in liaison with the MDT to support the patient's decision-making processes
- Making timely and appropriate plans for renal replacement therapy where necessary
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ASSESSMENT & LEARNING METHODS

CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
Limerick University Hospital study day

Renal Anaemia

Objective: To provide the trainee with the skills and knowledge to manage renal anaemia and to safely prescribe and monitor erythropoietic stimulating agents

KNOWLEDGE

The pathophysiology of renal anaemia and the haematological and biochemical methods to diagnose, assess and monitor treatment in renal anaemia
Differences between anaemia secondary to CKD and other causes
Indications for and the use of erythropoietic stimulating agents (ESAs) and their complications
Indications for and use of oral and parenteral iron therapy and its complications
Causes of resistance to ESA therapy and its investigation

SKILLS

Diagnosing and treating renal anaemia, monitoring the effects of treatment and managing failure of treatment
Managing renal anaemia in CKD patients not yet on renal replacement therapy
Managing renal anaemia in CKD patients on renal replacement therapy
Prescribing and monitoring iron replacement therapy
Auditing the use of ESAs and iron therapy in individual patients and patient populations

ASSESSMENT & LEARNING METHODS

CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
Limerick University Hospital study day

Cardiovascular Disease in Patients with CKD

Objective: To provide the trainee with the skills and knowledge to assess and treat renal patients with cardiovascular disease

KNOWLEDGE

The impact of cardiovascular disease on morbidity and mortality of patients with renal disease and in those receiving renal replacement therapy
Cardiovascular risk factors and modification strategies (including hyperlipidaemias and obesity)
How to manage acute coronary syndromes and associated problems in the renal patient
The risk of AKI after angiographic procedures and knows how to reduce this risk

SKILLS

Assessing a patient who may have cardiovascular disease including identification and treatment of cardiovascular risk factors
Interpretation of the guidelines for treatment of cardiovascular risk factors including hyperlipidaemia and obesity
Discussion of self-management strategies and dietary modifications with patients and when necessary prescribing and monitoring drug therapy
Recognising patients who need referral for specialist cardiology review (including potential renal transplant recipients)

ASSESSMENT & LEARNING METHODS

CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
Limerick University Hospital study day

Section 5: Hypertension

Objective: To provide the trainee with the skills and knowledge to assess and manage patients with hypertension at a specialist level.

KNOWLEDGE

- Outline of the causes of secondary hypertension (HTN) and describes the interpretation of investigations and treatment
- International guidelines for treatment of HTN
- Unique considerations in treating HTN in special situations such as pregnancy, CKD and diabetes mellitus, and hypertensive urgency/ emergencies
- The importance of non-pharmacological measures in achieving BP targets
- The role of sodium intake in the pathogenesis of HTN
- The assessment and management of pre-eclampsia
- The diagnosis and management of resistant HTN
- The diagnosis and management of hypertensive emergencies

SKILLS

Assessing a patient with HTN (including use of home and ambulatory BP monitoring) and appropriately investigates to exclude underlying secondary causes
Identifying the patient with secondary HTN who is suitable for definitive treatment
Instituting lifestyle measures and a suitable antihypertensive drug regime
Prescribes antihypertensive medication to achieve blood pressure levels recommended by guidelines
Monitors and reviews effectiveness of blood pressure control over time with patient and primary care team

ASSESSMENT & LEARNING METHODS

CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
Galway University Hospital study day

Section 6: Renovascular Disease

Objective: To provide the trainee with the skills and knowledge to develop the ability to carry out assess and treat patients with hypertension and / or renal impairment secondary to renovascular disease

KNOWLEDGE

- The causes and pathophysiology of renovascular disease
- The methods used to investigate renovascular disease
- The risks and complications of investigations such as angiography
- The natural history of the disease and the long-term outcomes of intervention and medical management
- The general management of extra-renal vascular problems of patients with atherosclerotic renovascular disease

SKILLS

Assessing patients who may have renovascular disease and determine if further investigation and intervention are required
Minimising the risks of AKI after angiographic procedures
Counselling a patient about risks and benefits of investigations and interventions such as angiography and angioplasty / stent
Providing long term care of blood pressure and cardiovascular risk for the patient with renovascular disease

ASSESSMENT & LEARNING METHODS

CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
Galway University Hospital study day

Section 7: Glomerular, Vascular, and Tubulointerstitial Diseases

Clinical Presentation and Assessment of Glomerular Disease

Objective: To provide the trainee with skills and knowledge to undertake specialist assessment and management of patients with haematuria and / or proteinuria.

KNOWLEDGE

Pathophysiology of visible and non-visible haematuria
Causes of haematuria and define the relationship to systemic diseases
Pathophysiology of proteinuria and the nephrotic syndrome
Causes of proteinuria and define the relationship to systemic diseases
Risk of extrarenal complications of the nephrotic syndrome
The range of treatment options (including potential adverse effects) available for management of proteinuria and associated extrarenal complications
Indications for kidney biopsy in investigation of haematuria, associated risks, likely prognosis and requirement for long term review

SKILLS

Formulating a differential diagnosis, appropriate plan of investigation and management for a patient with haematuria and / or asymptomatic proteinuria or symptomatic proteinuria or nephrotic syndrome
Recognising the indications for kidney biopsy in investigation of haematuria and / or proteinuria and discussing the associated risks, likely prognosis and requirement for long term review
Assessing the severity of proteinuria and the risk of extra-renal complications

ASSESSMENT & LEARNING METHODS

CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
AMNCH Tallaght University Hospital study day

Primary Glomerular Diseases

Objective: To provide the trainee with skills and knowledge to assess, diagnose and treat patients with primary glomerulonephritis, manage the complications of the diseases and their treatment, and both the systemic and local kidney manifestations

KNOWLEDGE

The various types of primary glomerulonephritis, aetiology, pathology and clinical manifestations:

- Minimal change disease
- Focal and segmental glomerulosclerosis
- Membranous nephropathy
- Membranoproliferative glomerulonephritis
- IgA Nephropathy

The natural history and prognosis for the primary glomerulonephritides

The investigation of a patient with glomerulonephritis, both at time of presentation and during long term follow-up (including role of kidney biopsy)

The available management strategies (both specific and non-specific) including immunosuppression and is aware of recent clinical trials

The place and timing of renal transplantation

SKILLS

Clinically assessment of patients with primary glomerulonephritis

Investigating patients appropriately including laboratory tests, imaging and biopsy

Interpreting the results of laboratory investigations and kidney biopsy findings

Making appropriate decisions about urgency of treatment

Determining the place for immunosuppression, balances risks and benefits, and monitors long term use

ASSESSMENT & LEARNING METHODS

CBD, Mini-CEX, NCA, ASN-ITE, ESENeph

AMNCH Tallaght University Hospital study day

Systemic Diseases with Secondary Glomerular Involvement

Objective: To provide the trainee with skills and knowledge to assess, diagnose and treat patients with systemic diseases with secondary glomerulonephritis, manage the complications of the diseases and their treatment, and both the systemic and local kidney manifestations.

KNOWLEDGE

The pathophysiology of systemic disease-causing glomerulonephritis especially vasculitis and SLE, viral and other infections and thrombotic microangiopathies

The various types of secondary glomerulonephritis, aetiology, pathology and clinical manifestations:

- Lupus Nephritis
- Anti-GBM Disease and Goodpasture's Disease
- Systemic Amyloidosis and Non-amyloid Deposition Diseases
- Antineutrophil Cytoplasmic Autoantibodies–Small Vessel Vasculitis
- Cryoglobulinaemia
- Scleroderma and thrombotic microangiopathies

The natural history and prognosis for the different glomerulonephritides

The investigation of a patient with glomerulonephritis, both at time of presentation and during long term follow-up (including role of kidney biopsy)

Available management strategies (both specific and non-specific) including immunosuppression and is aware of recent clinical trials

Recognising the occurrence of rare diseases such as fibrillary GN, scleroderma, cryoglobulinaemia, and knowing where to find more information

The place and timing of renal transplantation

SKILLS

Clinically assessing patients with glomerulonephritis with systemic involvement

Investigating patients appropriately with laboratory tests, imaging and kidney biopsy

Interpreting the results of laboratory investigations and kidney biopsy findings

Making appropriate decisions about urgency of treatment

Determining the place for immunosuppression, balances risks and benefits, and monitors long term use

ASSESSMENT & LEARNING METHODS

CBD, Mini-CEX, NCA, ASN-ITE, ESENeph

AMNCH Tallaght University Hospital study day

Tubulointerstitial Nephritis

Objective: To provide the trainee with skills and knowledge to assess, diagnose and treat patients with interstitial nephritis or tubulo-interstitial disease, manage the complications of the diseases and their treatment, and both the systemic and local kidney manifestations.

KNOWLEDGE

The pathophysiology of interstitial nephritis and tubulo-interstitial disease, their causes and links with systemic diseases
Investigations needed in patients with interstitial nephritis
The natural history and prognosis of interstitial nephritis
The management strategies for treatment and especially the place for steroids or other immunosuppression

SKILLS

Clinically assessing patients with interstitial nephritis and taking a full drug and environmental history.
Investigating patients appropriately including use of laboratory tests, imaging and kidney biopsy
Interpreting the results of appropriate laboratory investigations and kidney biopsy findings
Making decisions about the urgency of treatment and the place of steroids or other immunosuppression

ASSESSMENT & LEARNING METHODS

CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
AMNCH Tallaght University Hospital study day

Section 8: Renal Disease in Diabetics

Objective: To provide the trainee with skills and knowledge to assess and treat patients with diabetes and kidney disease

KNOWLEDGE

- The pathophysiology of diabetic nephropathy, its predisposing factors and available screening methods
- Factors that distinguish between diabetic nephropathy and incidental kidney disease in diabetic patients
- The role and importance of lifestyle factors (including smoking), diabetic control and other therapeutic strategies used to manage and slow progression of diabetic nephropathy and in the development of vascular disease
- The indications for referral of diabetic patients to specialist renal clinics
- The differing natural history of patients with diabetic renal disease compared to other CKD patients
- The role of pancreatic and / or renal transplantation in diabetic patients with kidney disease

SKILLS

- Making an accurate and focussed clinical assessment of patients who may have diabetic nephropathy
- Recognising and managing non-diabetic renal disease in the diabetic patient
- Implementing and monitoring treatment for hypertension, hyperlipidaemia and utilising other renoprotective and cardiovascular protective treatments
- Planning the long-term management of the patient with diabetic nephropathy who requires renal replacement therapy including renal transplantation
- Contributing to the management of diabetes and its complications in patients with CKD on dialysis or with a transplant

ASSESSMENT & LEARNING METHODS

- CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
- Galway University Hospital study day

Section 9: Urological Presentations

Kidney Stones

Objective: To provide the trainee with skills and knowledge to assess and investigate a patient with renal stone disease and to formulate a management plan

KNOWLEDGE

- The causes and pathophysiology of renal stone formation, including associations with renal tubular or genetic disorders
- The clinical presentation of renal stone disease and its effect on renal function
- How to investigate a patient with renal stones using biochemical and imaging techniques
- Treatment options available including dietary and lifestyle measures to reduce renal stone risk

SKILLS

- Assessing the patient with renal stones and appropriately investigating patients with recurrent renal stones
- Discussing suitable dietary measures to reduce risk of renal stone formation
- Recognising the limitations of medical treatment and appropriately referring patients for surgical assessment
- Recognising the need to appropriately involve other clinicians including dietitians, urologists and radiologists

ASSESSMENT & LEARNING METHODS

- CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
- Cork University Hospital study day

Urinary Tract Infections

Objective: To provide the trainee with skills and knowledge to manage patients with urinary tract infections

KNOWLEDGE

- The bacteriological causes of urinary tract infection
- The underlying predisposing causes of urinary tract infections and the familial nature of some abnormalities
- The modes of presentation of urinary tract infections (including special circumstances e.g. immunosuppressed or pregnant patients)
- The potential long-term consequences of urinary tract infection

SKILLS

- Investigating and managing all forms of urinary tract infection including recurrent urinary tract infection

ASSESSMENT & LEARNING METHODS

- CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
- Study day

Urinary Tract Obstruction

Objective: To provide the trainee with skills and knowledge to assess, investigate and manage patients with urinary tract obstruction and neurogenic bladder

KNOWLEDGE

- The anatomy of the urinary tract and the common sites and causes of urinary obstruction
- The acute presentation of urinary tract obstruction and the long-term consequences of urinary tract obstruction
- The types of reconstructive procedures undertaken in children and adults and the relevance to future management including transplantation

SKILLS

- Investigating and managing patients with urinary tract obstruction appropriately (including management of fluid and electrolyte disturbances occurring after the relief of obstruction)
- Recognising when appropriate to involve Radiologists and Urologists
- Explaining to patients and carers the interventions available to patients with urinary tract obstruction and bladder dysfunction (including neurogenic bladder) to avoid infection and prevent progressive renal damage

ASSESSMENT & LEARNING METHODS

- CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
- Study day

Section 10: Inherited and Rare Diseases

Objective: To provide the trainee with skills and knowledge to assess, diagnose and treat patients with genetic and other rare diseases and advise on inheritance.

KNOWLEDGE

The pathophysiology and genetics of APKD, Alport's disease, reflux nephropathy, inherited tubular disorders, metabolic disorders such as oxalosis, Fabry's disease and thin membrane nephropathy (amongst others)

Investigations needed in patients with cystic kidney diseases and other inherited diseases

The natural history and prognosis of these diseases

Available treatments and outlines their appropriate use

The patterns of inheritance of genetic conditions and recognises indications for screening

SKILLS

Assessing patients with inherited diseases, taking a full history including familial elements, and demonstrating awareness of any extrarenal systemic manifestations

Initiating investigations including laboratory tests, imaging and kidney biopsy (when appropriate)

Interpreting the results of investigations and initiating specific treatment appropriately

Explaining the long term and progressive nature of these diseases to patients and acts to minimise complications

Determining when screening is required and interpreting results of screening test.

ASSESSMENT & LEARNING METHODS

CBD, Mini-CEX, NCA, ASN-ITE, ESENeph

AMNCH Tallaght University Hospital study day

Section 11: Special Circumstances

Renal Disorders in Pregnancy

Objective: To provide the trainee with skills and knowledge to counsel patients with pre-existing kidney disease or a renal transplant about sexual health issues including fertility, contraception and the implications of pregnancy.

To also enable trainees to be able to manage renal conditions during pregnancy and to undertake a specialist assessment, investigation and management of a patient who develops a renal disorder during pregnancy.

KNOWLEDGE

- The effects of kidney disease on fertility and the need for safe and effective contraception in patients with renal disease and with a renal transplant
- The effects of pregnancy on renal physiology in normal individuals and those with pre-existing renal disease (including those on renal replacement therapy)
- The potential risks of pregnancy to the mother and foetus in patients with CKD (including dialysis and renal transplant)
- The importance of appropriate drug therapy in pregnancy and potential risks of commonly used drugs to the foetus
- How to manage co-morbid medical conditions in patients with pre-existing renal disease, dialysis or a renal transplant during a pregnancy with particular emphasis on minimisation of the risk to mother and foetus
- To recognise renal disorders that are inherited and the patterns of inheritance

SKILLS

- Counselling patients with renal disease, on dialysis or with a renal transplant about the risks and implications of pregnancy and acting to minimise risks to mother and foetus
- Investigating de-novo renal disease in pregnancy or a deterioration in renal function in a pregnant transplant patient
- Managing hypertension appropriately in pregnancy
- Modification of medication including immunosuppressive drugs appropriately during pregnancy or in a woman planning pregnancy
- Recognising and managing the renal consequences of pre-eclampsia and AKI in pregnancy and the puerperium
- Explaining the inheritance of genetic disorders, recognising the need for genetic counselling and appropriate referral

ASSESSMENT & LEARNING METHODS

- CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
- Beaumont Hospital study day

Transition of Paediatric Patients to Adult Nephrology Services

Objective: To provide the trainee with skills and knowledge to carry out specialist assessment and treatment of young adults and adolescents with kidney disease progressing from the paediatric to adult renal services

KNOWLEDGE

- The common causes of CKD in paediatric patients, and where to obtain information on rarer causes of CKD in these patients
- Issues relating to consent and confidentiality in adolescent patients
- The impact of renal disease on other physical systems within the patient, on the psychosocial functioning of the patient, family, carers, and other professionals (healthcare, colleges etc)
- The importance of the developmental stage when communicating with adolescents and young adults

SKILLS

- Making an accurate and focussed clinical assessment of patients with kidney disease at the adult / paediatric interface
- Treating the patient holistically and sensitively in accordance with the patient's wishes and taking account of the needs and wishes of the carers and family members of the patient
- Managing the change of environment within which the patient will be managed
- Managing the change in personnel and referral systems applicable to CKD, dialysis and transplant patients at the paediatric / adult interface
- Recognising when the timing of referral from paediatric / young person / adolescent service to adult renal services is appropriate

ASSESSMENT & LEARNING METHODS

- CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
- Study day

Nutrition in Patients with Renal Disease

Objective: To provide the trainee with skills and knowledge to identify, understand and manage the nutritional needs of patients with kidney disease

KNOWLEDGE

- The wide range of nutritional issues facing renal patients and special dietary regimes prescribed (e.g. low protein diet in CKD)
- The relationship between adequacy of dialysis and nutrition
- The treatment strategies for hyperlipidaemia in patients with kidney disease

SKILLS

- Consideration of a patient's nutritional status and provision of appropriate nutritional advice with the support of dieticians
- Managing the nutritional needs of patients with AKI and other complex multisystem disorders

ASSESSMENT & LEARNING METHODS

- CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
- University Hospital Waterford study day

Section 12: Management of End-Stage Renal Disease Supportive Care (non-dialysis or conservative care)

Objective: To provide the trainee with skills and knowledge to identify, counsel and manage patients with CKD who require active supportive management (non-dialysis or conservative care) and / or end of life palliative care. To also help trainees to develop the ability to formulate and supervise a management plan for end of life care, together with patient, family / carers and the multi-disciplinary team including palliative care.

KNOWLEDGE

- The symptoms of advanced CKD
- The evidence for active supportive care (non-dialysis) care of CKD
- The principles of pain relief and appropriate analgesic prescription in end stage renal disease (ESRD)
- The factors affecting survival in patients with ESRD
- The clinical features of dying
- The principles of bereavement management
- The medicolegal framework for decisions about patient treatment and advanced directives
- When to initiate a care pathway for dying patients with the help of the multidisciplinary and palliative care teams

SKILLS

- Identification of patients requiring active support management or end of life care
- Counselling patients and carers about active supportive care (conservative or non-dialysis, non-transplant) management of advanced CKD
- Recognition and management of the symptoms of ESRD including prescription of effective analgesia for patients requiring pain relief and initial management of depression
- Identification of the patient who is deteriorating despite dialysis; counselling of patients and carers about withdrawal of dialysis with the support of the multidisciplinary team

ASSESSMENT & LEARNING METHODS

- CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
- University Hospital Waterford study day

Haemodialysis

Objective: To provide the trainee with skills and knowledge to be able to undertake the planning of haemodialysis, its prescription and measurement of adequacy.

KNOWLEDGE

- The methods of creating vascular access for haemodialysis
- The means to deliver purified water, the necessary standards and methods of assessment
- The principles of haemodialysis and the effects of changes in treatment length and frequency, different dialysis membranes and dialysate solutions
- An overview of the methods used to assess adequacy of haemodialysis
- The evidence for treatment targets of haemodialysis adequacy
- The complications of arterio-venous fistulae and artificial grafts
- The management of dialysis line sepsis, poor flow and line blockage
- The pathophysiology and management of intradialytic hypotension

SKILLS

- Prescribing haemodialysis for a patient initiating treatment and adjusting the prescription based on the patient's progress and monitoring
- Advising on ultrafiltration, sodium profiling and the use of different dialysate solutions
- Discussing the therapeutic and lifestyle implications of home versus hospital-based haemodialysis with a patient and carers
- Assessing the suitability of different methods of vascular access
- Organising the day-to-day management of a haemodialysis unit
- Identifying and managing the complications of vascular access involving, when necessary, surgeons and radiologists
- Managing dialysis-related sepsis and develops protocols with microbiologists
- Developing protocols to deal with acute dialysis emergencies

ASSESSMENT & LEARNING METHODS

- CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
- University Hospital Waterford study day

Peritoneal dialysis

Objective: To provide the trainee with skills and knowledge to be able to supervise and manage patients on chronic peritoneal dialysis (PD) at a specialist level

KNOWLEDGE

- The principles of PD, including membrane physiology, dialysis solutions and their mechanism of action
- The relative therapeutic and lifestyle advantages of all modes of PD
- The different methods of insertion of peritoneal dialysis catheters and their advantages and disadvantages
- The assessment of adequacy of PD and peritoneal membrane function
- An overview of the evidence base supporting treatment targets for adequate PD
- The diagnosis and management of PD associated peritonitis
- The management of the catheter exit site and the prevention, diagnosis and treatment of associated infection
- The diagnosis and management of mechanical problems associated with PD (including herniae, leaks, catheter malfunction)
- The methods used to recognise and manage peritoneal membrane injury, including ultrafiltration failure and encapsulating peritoneal sclerosis

SKILLS

- Assessing the suitability of a patient for PD in the context of other methods of renal replacement therapy
- Adjusting the prescription of PD and monitor change
- Organising the day-to-day management of a PD service
- Adjusting the prescription of PD required following complications
- Managing the prevention and treatment of PD associated infections
- Managing PD technique failure and transfer to haemodialysis

ASSESSMENT & LEARNING METHODS

- CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
- PD symposium study day

Plasmapheresis

Objective: To provide the trainee with skills and knowledge to be able to undertake the planning, prescription and monitoring of plasmapheresis

KNOWLEDGE

Indications for plasmapheresis
The principles of plasmapheresis and complications of treatment

SKILLS

Assessing the suitability of a patient for plasmapheresis
Prescribing plasmapheresis safely and assessing response to treatment
Managing the patient with AKI requiring both plasmapheresis and acute kidney replacement therapy

ASSESSMENT & LEARNING METHODS

CBD, Mini-CEX, NCA, ASN-ITE. ESENeph
Beaumont Hospital study day

Section 13. Transplantation

Assessment of the Potential Living Donor and Recipient

Objective: To provide the trainee with skills and knowledge to evaluate and manage patients who are suitable for kidney transplantation and kidney donation at a specialist level

KNOWLEDGE

The role of transplantation in the management of patients with ESRD
Principles of kidney transplantation, and the medical, surgical, ethical, and social contraindications
The benefits and risks of transplantation compared with other treatment modalities for ESRD and pre-emptive transplantation
The relative risks and benefits of living donor and deceased donor kidney transplantation
Principles of blood group typing, HLA matching, and donor–recipient cross matching

SKILLS

Assessing the suitability of patients with ESRD for kidney transplantation
Discussing issues around living donor and pre-emptive transplantation
Counselling patients and relatives in all aspects of kidney transplantation including living kidney donation
Assessing the suitability of a person as a living kidney donor
Developing and carrying out protocols for pre-transplant assessment of recipients and potential living donors

ASSESSMENT & LEARNING METHODS

CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
Beaumont Hospital study day

Early Management of the Kidney Transplant Recipient (under 3 months)

Objective: To provide the trainee with skills and knowledge to be able to manage patients in the early stages post kidney transplant at a specialist level

KNOWLEDGE

Issues that can influence outcomes early post kidney transplantation
Medical and surgical problems which occur early post kidney transplant
Indications for radiological investigation (ultrasound scan, radio-isotope scanning etc.) and transplant biopsy early post kidney transplant
The role of kidney transplant biopsy and the Banff scoring criteria in the diagnosis of acute rejection
The mode of action and adverse effects of immunosuppressive agents and the potential for interaction with other drugs
Available management strategies for acute transplant rejection
Factors early post-transplant that influence long term graft function

SKILLS

Optimising the graft and patient outcome early post kidney transplantation
Assessing the significance of changes in kidney transplant function
Investigation of kidney transplant patients with acute transplant dysfunction and interprets the results of investigations
Evaluation of patients with surgical and medical complications of kidney transplantation
Planning and modifying immunosuppressive therapy regimens
Counselling patients and relatives in all aspects of renal transplantation

ASSESSMENT & LEARNING METHODS

CBD, Mini-CEX, NCA, ASN-ITE, ESENeph
Beaumont Hospital study day

Long-Term Care of the Kidney Transplant Recipient

Section 14: Procedures

Kidney Biopsy (Native and Transplant)

Objective: To ensure that the trainee knows the indications for and potential complications of a renal transplant biopsy and is familiar with the skills necessary to perform native and transplant kidney biopsy.

KNOWLEDGE

- Indications for a kidney biopsy
- The anatomy of the native and transplant kidneys
- Contraindications to performing a kidney biopsy
- Potential complications of a kidney biopsy

SKILLS

- Minimising and managing the complications of kidney biopsy
- Interpreting the kidney biopsy findings with the assistance of a Histopathologist
- Discussing the indication, perceived benefits and potential risks of the procedure with a patient or relative in a manner that facilitates informed consent
- Discussing biopsy findings with a patient to enable shared decision-making regarding treatment options
- Utilising ultrasound to localize kidneys and using ultrasound guidance to assist in kidney biopsy (not mandatory)
- Competent performance of a kidney biopsy (not mandatory)

ASSESSMENT & LEARNING METHODS

- Direct Observation of Procedural Skills (DOPS)

Ultrasound Scanning (Native and Transplant Kidneys) – not mandatory

Objective: The trainee will be proficient at carrying out and interpreting ultrasound scanning of native and transplant kidneys in AKI and to facilitate kidney biopsy. They will also be able to identify anatomy and patency of central veins to facilitate central venous catheter placement

KNOWLEDGE

The anatomy of both native and transplant kidneys
The anatomy of the central veins

SKILLS

Using ultrasound to localise native and transplant kidneys for the purpose of kidney biopsy
Localising central veins and assessing their suitability for percutaneous venous access
Using bedside ultrasound to assess patients with AKI e.g. to rule out obstruction and evaluate kidney cortical thickness

ASSESSMENT & LEARNING METHODS

DOPS

Recommended: Study day or ultrasound course to include the following:

- neck and groin veins
- native kidney
- transplant kidney

Insertion of Temporary Haemodialysis Catheters

Objective: To insert and manage temporary haemodialysis catheters.

KNOWLEDGE

The anatomy of the central venous system in the upper thorax, neck and femoral veins
Indications for insertion of temporary haemodialysis catheters and the relative merits and problems associated with each site of insertion
Complications associated with temporary haemodialysis catheter insertion, the methods of minimising these complications and their treatment should they occur
Treatment of catheter related sepsis and blocked catheters
Anatomical method of insertion of temporary haemodialysis catheters in all central vein positions

SKILLS

Discuss the indications, benefits and adverse events of the procedure to patients, relatives and carers in a manner that will allow informed consent
Insertion of temporary haemodialysis catheters using the Seldinger technique and ultrasound guidance for bilateral internal jugular and femoral veins
Insertion of temporary haemodialysis catheters in all central vein positions
Explaining the use of the catheter and its management to the patient, relatives and carers

ASSESSMENT & LEARNING METHODS

DOPS

Insertion of Peritoneal Dialysis Catheters (not mandatory)

Objective: The trainee will understand the different methods of inserting PD catheters. The trainee will be proficient at carrying out the insertion of PD catheters by the percutaneous method.

KNOWLEDGE

- Indications for insertion of PD catheters
- Different medical and surgical techniques for insertion of PD catheters including complications and means to minimise these
- Anatomy of the anterior abdominal wall, abdominal cavity and peritoneum, the different types of catheters and their use
- The role of nurses in the management of a catheter after its insertion

SKILLS

- Assessing a patient's suitability for insertion of a PD catheter by different techniques
- Discussing the indications, benefits and adverse events of the procedure to patients, relatives and carers in a manner that will allow informed consent
- Insertion of PD catheters using the percutaneous approach
- Managing acute complications following catheter insertion – catheter malposition, catheter related sepsis and occluded catheter

ASSESSMENT & LEARNING METHODS

DOPS

Documentation of Minimum Requirements for Training

- These are the minimum number of cases you are asked to document as part of your training. It is recommended you seek opportunities to attain a higher level of exposure as part of your self-directed learning and development of expertise.
- You should expect the demands of your post to exceed the minimum required number of cases documented for training.
- If you are having difficulty meeting a particular requirement, please contact your specialty coordinator

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Section 1 - Training Plan				
Personal Goals Plan (Copy of agreed Training Plan for your current training year signed by both Trainee & Trainer)	Required	1	Training Post	Personal Goals Form
On Call Rota	Required	1	Training Post	Clinical Activities
Section 2 - Training Activities				
Outpatient Clinics (minimum 1 per week)				Clinical Activities
Nephrology OPD (1 per week)	Required	40	Year of Training	
Chronic Haemodialysis	Required	10	Year of Training	
Peritoneal dialysis	Required	10	Year of Training	
Chronic Transplant	Required	20	Year of Training	
Ward Rounds				Clinical Activities
Consultant Led (minimum 1 per week)	Required	40	Year of Training	
SpR Led (minimum 2 per week)	Required	80	Year of Training	
Consultations - This should include the following category of patients:	Required	50	Year of Training	Clinical Activities
Obstetric nephrology (where available)	Desirable	20	Training Programme	
Acute kidney injury	Required	40	Year of Training	
Acute transplant care (only if working in Beaumont Hospital)	Required	20	Training Programme	

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Chronic haemodialysis	Required	30	Year of Training	
Chronic peritoneal dialysis (where available)	Required	10	Year of Training	
Chronic transplant	Required	20	Year of Training	
Acute haemodialysis	Required	15	Year of Training	
Continuous renal therapies	Required	10	Year of Training	
Procedures/Practical Skills/Surgical Skills				Procedures
Renal biopsy (Native and Transplant)	Desirable	8	Year of Training	
Temporary vascular access - Femoral	Required	5	Training Programme	
Temporary vascular access - Internal jugular	Desirable	2	Training Programme	
Ultrasound scanning of kidney	Desirable	10	Year of Training	
Peritoneal dialysis catheter insertion	Desirable	2	Training Programme	
Examination of urinary sediment	Desirable	10	Year of Training	
Additional/Special Experience Gained e.g.				Cases
Point of Care Ultrasound Scan	Desirable	1	Training Programme	
Section 3 - Educational Activities				
Mandatory Courses				Course Attendance
ACLS	Required	1	Training Programme	
Ethics Foundation	Required	1	Training Programme	

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Ethics for General Medicine	Required	1	Training Programme	
An Introduction to Health Research Methods	Required	1	Training Programme	
HST Leadership in Clinical Practice (\geq Year 3)	Required	1	Training Programme	
Mastering Communication	Required	1	Training Programme	
Performing Audit	Required	1	Training Programme	
Wellness Matters	Required	1	Training Programme	
Non-Mandatory Courses				
Point of care ultrasound course	Desirable	1	Training Programme	
Nephrology Study Days	Required	4	Year of Training	Study Day Attendance
Participation at In-house activities minimum of 1 per month from the categories below:				Attendance at Hospital Based Learning
Grand Rounds (minimum of 2 per month)	Required	20	Year of Training	
Other including:				
Seminars or lectures	Required	8	Year of Training	
Radiology Conference	Desirable	6	Year of Training	
MDT Meetings	Required	12	Year of Training	
Pathology Conference	Required	4	Year of Training	
Journal club	Required	10	Year of Training	

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Kidney club	Required	3	Year of Training	
Examinations				
ASN ITE	Required	1	Training Programme	Examinations
ASN NephSAP online multiple-choice continuous assessment questions	Required	5	Year of Training	
European Specialty Exam in Nephrology (ESENeph)	Desirable	1	Training Programme	
Delivery of Teaching (minimum 2 formal teaching session per month)	Required	20	Year of Training	Additional Professional Experience
Lecture	Required	5	Year of Training	
Tutorial	Required	5	Year of Training	
Bedside Teaching	Required	10	Year of Training	
Audit activities and Reporting (1 per year either to start or complete, Quality Improvement (QI) projects can be uploaded against audit)	Required	1	Every two years	Audit & QI
Publications	Desirable	1	Year of Training	Additional Professional Experience
Presentations (national or international meetings)	Desirable	1	Year of Training	Additional Professional Experience
Attendance at national/international meetings	Required	1	Year of Training	Additional Professional Experience
Research				
Research: presentation at national or international meeting	Desirable	1	Training Programme	

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Name
Research: publication	Desirable	1	Training Programme	
Additional Qualifications	Desirable	1	Year of Training	Additional Professional Experience
Committee attendance	Desirable	1	Year of Training	Additional Professional Experience
Section 4 - Assessments				
DOPS				DOPS
Insertion of temporary haemodialysis catheter	Required	1	Training Programme	
Renal biopsy	Desirable	1	Training Programme	
Ultrasound scanning	Desirable	2	Training Programme	
CBD	Required	4	Year of Training	CBD
Mini-CEX	Required	4	Year of Training	Mini CEX
Observed Consultant Ward Round	Required	1	Year 3	Observed Consultant Ward Round
Quarterly Assessments/End-of-Post Assessments (Q1 & Q2 assessments to be completed and uploaded by December, Q3 to be submitted prior to AEP)	Required	4	Year of Training	Quarterly Assessments/End-of-Post Assessments
Annual Evaluation of Progress (AEP)	Required	1	Year of Training	End of Year Evaluation