Renal Medicine (Nephrology) Assessment Blueprint

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Part 2.1: Clinical Competencies						
Asymptomatic Proteinuria						
Objective - The trainee will be able to carry out specialist assessment and treatment of patients with the asymptomatic proteinuria						
K	To define the pathophysiology of proteinuria and to correlate with the causes of asymptomatic proteinuria	x				x
	To differentiate between physiological and pathological causes of asymptomatic proteinuria	x				x
	To describe the methods of investigation of the patient with asymptomatic proteinuria	x				x
S	To take a relevant history and to perform a thorough examination		x			x
	To undertake the appropriate investigation of asymptomatic proteinuria and as a consequence differentiate between pathological and physiological causes		x			x
	To explain the indications for renal biopsy		x	x		x
	To demonstrate the likely outcome of the condition, its long term prognosis and requirement for long term review		x			x
A	To appreciate the role of primary care in the initial screening for proteinuria and involvement in future management		x			

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Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Microscopic haematuria						
Objective - The trainee will be able to carry out specialist assessment and treatment of patients with microscopic haematuria						
K	To define the pathophysiology of haematuria, both macroscopic and microscopic	x				x
	To describe the methods of investigation of the patient with microscopic haematuria	x				x
S	To take a relevant history and perform a thorough examination		x			x
	To demonstrate the cause of microscopic haematuria by laboratory means including phase contrast microscopy		x			x
	To recognise which patients require urological assessment and imaging techniques		x			x
	To explain the indications for renal biopsy			x		x
	To demonstrate the likely outcome of the condition, its prognosis and requirement long term review	x	x			x
A	To appreciate the role of the urologist		x			x
	To appreciate the role of primary care in the initial screening for microscopic haematuria and involvement in future management		x			

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Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Hypertension						
Objective - The trainee will be able to carry out specialist assessment and treatment of patients with hypertension with particular respect to renal disease						
K	To define what is understood by hypertension	x				x
	To describe the possible mechanisms causing primary (essential) hypertension	x				x
	To list the causes of secondary hypertension, the methods of investigation and treatment and their limitations	x				x
	To list the British Hypertension Guidelines for the treatment of hypertension and their particular relevance to renal disease and diabetes mellitus	x				x
	To describe the mechanisms of action and potential side effects of anti-hypertensive agents with particular reference to renal disease	x				x
S	To take a relevant history and perform a thorough examination to diagnose and assess the patient who may have hypertension		x			x
	To assess the likelihood of a secondary cause and to manage the investigation of such a patient		x			x
	To demonstrate which patient, with secondary hypertension, is suitable for definitive treatment and to recognise its limitations	x	x			x
	To manage anti-hypertensive drug therapy	x	x			x
	To demonstrate the use of home and ambulatory BP measurement to accurately assess BP		x			x
A	To recognise the role of primary care in the management of hypertension		x			x
	To recognise importance of patient centred care and education to change lifestyle, achieve compliance and BP treatment targets		x			x

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Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Urinary Tract Infection						
The trainee will be able to carry out specialist assessment and treatment of patients with urinary tract infection						
K	To describe the acute presentation and long term consequences of urinary tract infection	x				x
	To list the bacteriological causes of urinary tract infection	x				x
	To define underlying anatomical causes of urinary tract infection and the familial nature of some abnormalities	x				x
	To demonstrate the management of recurrent urinary tract infection including methods of investigation	x				x
	To define the mechanisms of action of antimicrobials and their limitations and adverse effects	x				x
	To describe the type of reconstructive procedures undertaken in children and the relevance to future management including transplantation	x				x
S	To take a relevant history and perform an appropriate examination		x			x
	To recognise which patients require investigation and the extent	x	x			x
	To demonstrate the significance of past history of urinary tract infection and its relevance to the development of chronic renal impairment	x	x			x
	To define when to prescribe antibiotics	x	x			x
A	To discuss familial disorders		x			x
	To recognise the role of microbiologists, urologists and specialist nurses		x			x

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Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Urinary Tract Obstruction and Neurogenic Bladder						
Objective - The trainee will be able to carry out specialist assessment and treatment of patients with urinary tract obstruction. The trainee will be able to work closely with urologists, radiologists and paediatricians in the medical management of urinary tract obstruction and neurogenic bladder						
K	To describe the anatomy of the urinary tract and the sites and causes of urinary obstruction	x				x
	To describe the acute presentation and long term consequences of urinary tract obstruction, its investigation and management	x				x
	To define the fluid and electrolyte disturbances occurring after the relief of obstruction and their management	x				x
	To describe the type of reconstructive procedures undertaken in children and adults and the relevance to future management including transplantation	x				x
S	To take a relevant history and perform an appropriate examination of the patient with possible urinary tract obstruction		x			x
	To manage the patient with appropriate investigation and treatment including the involvement of radiologists and urologist	x	x			x
	To explain the measures to be taken in patients with urinary tract obstruction and bladder dysfunction (including neurogenic bladder) to avoid infection and prevent progressive renal damage		x			x
	To recognise the need for long term review		x			x
A	To recognise the role of urologists, radiologists, paediatricians, microbiologists and primary care.		x			x
	To recognise the role of specialist nurses and community nurses		x			x

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Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Renal Stone Disease						
Objective - The trainee will be able to assess and investigate the patient with renal stone disease						
K	To define the causes of renal stones and the circumstances under which they may be manifest with particular reference to their effect on renal function	x				x
	To describe the biochemical investigation and imaging techniques available	x				x
	To define the underlying tubular abnormalities and their genetic basis which predispose to renal stone disease	x				x
	To describe the indications for treatment to prevent the development of renal stones	x				x
S	To take a history (including family history) and examination of the patient with renal stone disease		x			x
	To manage the appropriate investigation (biochemical and imaging) and treatment of the patient with a renal stone(s)		x			x
	To recognise the limitations of medical treatment to prevent stones		x			x
	To involve urologists and radiologists when indicated		x			x
A	To explain the significance of the family history		x			x
	To encourage the use of simple methods to reduce the risk of stone development		x			x
	To recognise the role of the radiologist, biochemist and urologist		x			x

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Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Disorders of Fluid and Electrolyte and Acid Base Regulation						
Objective - The trainee will be able to carry out specialist assessment and treatment of patients with disorders of fluid, electrolyte and acid base regulation						
K	To define the pathophysiology of sodium, potassium and hydrogen ion imbalance; calcium, phosphate and bone mineral metabolism; and the pathophysiology of water imbalance	x				x
	To describe the methods used to investigate fluid, electrolyte and acid base regulation; and bone mineral metabolism and calcium metabolism in renal patients	x				x
	To describe the management of fluid, electrolyte and acid base disorders and abnormalities of bone mineral metabolism	x				x
S	To take an accurate clinical history, including family history, in the assessment of patients		x			x
	To perform reliable and accurate clinical examination of the patient including assessment of fluid balance		x			x
	To interpret biochemical investigations		x			x
	To interpret radiological and histological investigation of bone mineral disorders		x			x
	To manage these disorders effectively	x	x			x
A	To explain the implications of familial disorders	x	x			x
	To recognise the role of nurses and dietitians in the long term management		x		x	x

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Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Infection in the Renal Patient						
Objective - The trainee will be able to supervise and manage patients with renal disease who develop infection, manage the particular problems of infection in immunocompromised patients and manage viral infection in patients on renal replacement therapy						
K	To define the strategies to prevent blood borne viral infections in patients on renal replacement therapy	x				x
	To list the particular infectious problems to which immunocompromised are prone	x				x
	To list the particular infections which may occur in patients on dialysis	x				x
	To describe the mode of action, adverse effects and indications for the use of antimicrobial agents in renal patients	x				x
S	To diagnose, investigate and treat infection in renal patients	x	x			x
	To develop protocols for the diagnosis, investigation and management of infection in renal patients		x			x
	To manage preventative measures to minimise risk of blood borne viral infection					x
A	To counsel patients about blood borne infection including HIV infection and the screening for blood borne viruses with relatives and carers where appropriate		x			x
	To recognise role of nurses in prevention and management of infection in renal patients and to work closely with microbiologists		x		x	x

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Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Nephrotic Syndrome						
Objective - The trainee will be able to carry out specialist assessment and treatment of patients with the nephrotic syndrome						
K	To define the pathophysiology of the nephrotic syndrome and its causes and relationship to systemic diseases	x				x
	To describe how to investigate the nephrotic syndrome to establish its severity and likely cause	x				x
	To describe management of the nephrotic syndrome, including the indications for ACE inhibitors, lipid lowering agents and anticoagulants; and specific use of corticosteroids and other immunosuppressive agents	x	x			x
S	To take a relevant history, including family history, and perform an appropriate examination		x			x
	To use the appropriate investigations including renal biopsy		x			x
	To manage the patient with nephrotic syndrome and demonstrate the indications for different methods of treatment		x			x
	To manage long term review		x			x
A	To discuss familial disorders		x			x
	To recognise the role of nurses and dietitians in the long term management		x		x	x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Renal Disorders in Pregnancy						
Objective - The trainee will be able to carry out specialist assessment and treatment of patients with renal disorders, including renal transplant patients, who become pregnant. The trainee will be able to carry out specialist assessment of patients who develop renal disorders during pregnancy						
K	To describe how pregnancy may affect renal function in normal patients and in those with preexisting renal disease including those on renal replacement therapy	x				x
	To list the adverse effects of drug treatment on both patient and fetus	x				x
	To list which renal disorders may be inherited	x				x
S	To demonstrate how to prepare the patient with a pre-existing renal disorder (including renal transplant) for pregnancy with particular emphasis on minimising the risk to patient and fetus		x			x
	To manage hypertension in pregnancy and the safe use of anti-hypertensive drugs	x	x			x
	To manage the renal consequences of pre-eclampsia and acute renal failure in pregnancy and the pueperium	x	x			x
	To explain the inheritance of renal disorders	x	x			x
A	To recognise the role of obstetricians and midwives in the management of patients both preconception, during pregnancy and postpartum		x			x
	To work closely with obstetricians and intensivists in the management of acute renal failure in pregnancy and the puerperium		x			x
	To recognise the need for genetic counselling in inherited kidney disorders		x			x

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Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Acute Renal Failure						
Objective - The trainee will be able to carry out specialist assessment and treatment of patients with acute renal failure						
K	To list the causes of acute renal failure	x				x
	To describe different methods of investigating the severity and causes of acute renal failure	x				x
	To describe the methods to correct fluid and biochemical abnormalities and strategies to treat reversible causes of acute renal failure	x				x
S	To take an accurate clinical history in the assessment of acute renal failure including drug history, surgical history, family, social and environmental history		x			x
	To perform a reliable and accurate clinical examination of the patient		x			x
	To perform a reliable and accurate assessment of the patient's fluid balance		x			x
	To interpret the appropriate use of the following investigations • Biochemistry • Haematology • Microbiology • Ultrasound scanning • CT/MRI scanning • Immunology • Renal biopsy	x	x			x
	To instigate correct management (including renal replacement therapy) and measures to treat the underlying cause	x	x			x
A	To recognise the role of renal unit staff, ward and critical care nurses		x		x	x
	To recognise the role of microbiologist, radiologist, urologist and surgeon		x			x
	To recognise the role of the histopathologist		x			x

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Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Chronic Kidney Disease						
The trainee will be able to carry out specialist assessment and treatment of patients with chronic kidney disease						
K	To list the causes of chronic kidney disease	x				x
	To describe the classification (stages) of chronic kidney disease	x				x
	To understand the basis and use of eGFR	x	x			x
	To describe the investigations used in to assess the degree of renal impairment and its causes with particular emphasis on reversibility of the condition	x	x			x
	To define the natural history and prognosis of chronic kidney disease from different causes and to describe the treatment strategies both general and specific to ameliorate the condition	x				x
	To be aware of drugs whose dose need changing with impaired renal function	x	x			x
S	To take an accurate clinical history in the assessment of chronic kidney disease including drug history, family, social and environmental history		x			x
	To perform reliable and accurate clinical examination of the patient		x			x
	To undertake appropriate use of investigations • Biochemistry • Haematology • Microbiology • Ultrasound scanning • CT/MRI scanning • Immunology • Renal biopsy	x	x			x
	To manage the patient with chronic kidney disease to ensure that reversible causes are identified and treated; and that appropriate preparation for renal replacement therapy is planned where necessary		x		x	x
Curriculum area	Competence	Specialist	Mini-	DOPS	MSF	CbD

		Exam	CEX			
Chronic Kidney Disease continued						
The trainee will be able to carry out specialist assessment and treatment of patients with chronic kidney disease						
A	To appreciate the role of the multi-professional team in the management of chronic renal failure		x		x	x
	To appreciate the role of primary care in the management of patients with stable chronic kidney disease		x			x
	To use national standards and local guidelines in management of patient		x			x
	To use drug formularies to ensure that appropriate drug dosages are prescribed		x			x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Nutrition in Renal Patients						
The trainee will be able to identify the nutritional needs of renal patients						x
K	To define the causes of malnutrition in patients with acute and chronic renal disease and the methods of assessment	x				x
	To describe the relationship between nutritional needs and adequacy of renal replacement therapy	x				x
	To describe the investigation and treatment of hyperlipidaemias	x				x
	To demonstrate the rationale for the use of protein restriction in the conservative management of chronic renal impairment	x				x
S	To make an accurate clinical assessment of nutritional status		x			x
	To use appropriate dietary advice with the assistance of dietitians		x			x
	To prescribe and monitor drug treatment for hyperlipidaemia		x			x
	To manage the nutritional needs of patients with acute renal failure and patients with multisystem failure		x			x
A	To appreciate the role of dietitians and develop close working relationships to reinforce advice and education to patients		x		x	x
	To appreciate the role of nurses and other health care professionals in the management of nutritional needs		x		x	x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Chronic Glomerulonephritis						
Objective - The trainee will be able to carry out specialist assessment and treatment of patients with chronic glomerulonephritis						
K	To list the causes of chronic glomerulonephritis	x				x
	To describe the methods of investigation	x				x
	To define the natural history and prognosis for chronic glomerulonephritis of different causes	x				x
	To describe the management strategies, both general and specific, to treat different causes of chronic glomerulonephritis	x				x
S	To take an accurate clinical history in the assessment of chronic glomerulonephritis including drug history, family, social and environmental history		x			x
	To perform a reliable and accurate clinical examination of the patient		x			x
	To make appropriate use of investigations • Biochemistry • Haematology • Microbiology • Ultrasound scanning • CT/MRI scanning • Immunology • Renal biopsy	x	x			x
	To demonstrate the use of general and specific measures to treat glomerulonephritis		x			x
A	To use all available evidence to inform decisions on management		x			x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Adult Polycystic Kidney Disease						
Objective - The trainee will be able to carry out specialist assessment and treatment of patients with adult polycystic disease and will be able to assess family members of patients with adult polycystic disease						
K	To define the pathophysiology of adult polycystic kidney disease including its extrarenal manifestations	x				x
	To describe the mode of inheritance and genetic defects and methods of screening	x				x
	To describe the long term management, including preservation of renal function and use of renal replacement therapy	x	x			x
S	To take an accurate clinical history, including family history, in the assessment of adult polycystic kidney disease		x			x
	To perform a reliable and accurate clinical examination of the patient		x			x
	To interpret screening tests and appreciate their limitations	x	x			x
	To plan the long term management of a patient with polycystic kidney disease		x			x
A	To appreciate the stress and concerns of patients and relatives in the assessment of a family member with adult polycystic kidney disease and the importance of genetic counselling		x		x	x
	To appreciate that many patients with polycystic kidneys have pain and ensure that this is adequately controlled	x	x			x

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Renal Vasculitis						
Objective - The trainee will be able to carry out specialist assessment and treatment of patients with renal vasculitis						
K	To define the pathophysiology of renal vasculitis, the spectrum of disease and its relation to systemic vasculitis	x				x
	To describe the clinical and laboratory methods to investigate and monitor the patient	x				x
S	To take a relevant history and perform an appropriate examination both to make a diagnosis and categorise the patient		x			x
	To plan the appropriate investigations, including renal biopsy, and treatment		x			x
	To balance the use of immunosuppression and plasmapharesis against the adverse effects of treatment		x			x
	To monitor and manage the patient in the short and long term	x	x			x
A	To discuss the relevant treatment options and the results in the context of clinical studies		x			x
	To appreciate the role of other specialists and their cooperation in management		x		x	x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Interstitial Nephritis						
Objective - The trainee will be able to carry out specialist assessment and treatment of patients with interstitial nephritis and tubulointerstitial disease						
K	To define the pathophysiology of interstitial nephritis and tubulointerstitial disease, its causes and relationship to other systemic conditions	x				x
	To describe the methods investigations and management of the condition	x	x			x
S	To take a relevant history, including drug history and exposure to other substances, and perform an appropriate examination		x			x
	To plan investigations, including renal biopsy		x			x
	To decide on the treatment and appropriate use of corticosteroids	x	x			x
A	To discuss the relevant treatment options and the results in the context of clinical studies and to involve other specialists if indicated		x			x

Curriculum area		Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Diabetic Nephropathy						
Objective - The trainee will be able to carry out specialist assessment and treatment of patients with diabetic nephropathy and implement strategies to prevent the development of diabetic nephropathy and delay progressive renal impairment						
K	To define the pathophysiology of diabetic nephropathy, its predisposing factors and screening methods	x				x
	To describe the importance of • hypertension • glycaemic control • hyperlipidaemia • ACE inhibitor and A11 receptor antagonist therapy	x				x
	To demonstrate the role of pancreatic and combined renal pancreatic transplantation	x				x
	To demonstrate knowledge of indications for referral to specialist renal clinics	x	x			x
S	To take a relevant history and perform an appropriate examination to diagnose and assess the patient who may have diabetic nephropathy		x			x
	To diagnose non-diabetic renal disease in the diabetic patient	x	x			x
	To implement and monitor treatment of hypertension, hyperlipidaemia and use of ACE inhibitors and AII receptor antagonists	x	x			x
	To plan the long term management of the patient with diabetic nephropathy who requires renal replacement therapy		x			x
A	To involve patients and carers together with dietitians and specialist nurses in the long term care		x		x	x
	To discuss the role of smoking in the development of vascular disease in the diabetic patient		x			x
	To work closely with diabetologists to draw up protocols for referral and management of diabetics with renal disease					x
	To work close with primary care for management of diabetes and stable CKD and proteinuria					x

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Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Systemic Lupus Erythematosus						
Objective - The trainee will be able to carry out specialist assessment and treatment of patients with systemic lupus erythematosus (SLE)						
K	To describe the pathogenesis of SLE and underlying immunological mechanisms	x				x
	To list the histological classification of renal SLE and its clinical consequences	x				x
	To describe the different treatment options for SLE	x				x
S	To take a relevant history and perform an appropriate examination to diagnose and assess the patient who may have SLE		x			x
	To plan and interpret the investigations of such a patient	x	x			x
	To interpret renal histological findings and immunological markers for the diagnosis and management of SLE	x				x
	To manage acute renal failure in a patient with SLE including the appropriate use of plasmapharesis	x	x			x
	To undertake long term management of the patient with SLE	x	x			x
A	To discuss the relevant treatment options and the results in the context of clinical studies		x			x
	To discuss the impact on reproductive potential	x	x			x
	To discuss the problems with renal transplantation	x	x			x
	To appreciate the multidisciplinary approach to investigation and treatment		x		x	x

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Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Cardiovascular Disease in Renal Patients						
Objective - The trainee will be able to carry out assessment and treatment of renal patients with cardiovascular disease						
K	To describe the impact of cardiovascular disease on the morbidity and mortality of patients with renal disease and those on renal replacement therapy	x				x
	To list the risk factors and means to modify them	x				x
	To describe the management of acute coronary syndromes and associated problems in the renal patient	x				x
	To describe the risk of acute renal failure after angiographic procedures and how this can be avoided	x				x
S	To take a relevant history and perform an appropriate examination to diagnose and assess the patient who may have cardiovascular disease		x			x
	To assess the risk factors for cardiovascular disease		x			x
	To recognise which patients need a cardiology opinion or specialist investigations		x			x
	To manage acute coronary syndrome in a renal patient		x			x
A	To involve patients and carers in the management of risk factors and acknowledge the role of other health care professionals		x			x
	To work closely with cardiologists and develop protocols for care					x

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Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Renovascular Disease						
Objective - The trainee will be able to carry out specialist assessment and treatment of patients with hypertension and/or renal impairment secondary to renovascular disease						
K	To list the causes of renovascular disease and its pathophysiology	x				x
	To describe the methods to investigate renovascular disease	x				x
	To define the indications for and methods of intervention	x				x
	To define the general management of the vascular problems of patients with atherosclerotic renovascular disease	x				x
	To describe the risk of acute renal failure after angiographic procedures and how this can be avoided	x				x
S	To take a relevant history and perform an appropriate examination to diagnose and assess the patient who may have renovascular disease		x			x
	To plan and interpret the investigations		x			x
	To recommend medical management or intervention based on clinical assessment and investigations		x			x
	To outline the likely outcome of the condition and its long term prognosis	x	x			x
A	To discuss the relevant treatment options and the results in the context of clinical studies		x			x
	To appreciate the multidisciplinary approach to investigation and treatment		x		x	x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Hyperlipidaemias						
Objective - The trainee will be able to carry out assessment and treatment of patients with hyperlipidaemia, with particular respect to renal disease						
K	To define hyperlipidaemia and dyslipidaemia and to describe their relevance as risk factors for patients with renal disease	x				x
	To describe the dietary and drug treatment of hyperlipidaemia	x				x
	To define the use of statins	x				x
S	To take a relevant history and perform an appropriate examination to make a diagnosis and assess the patient who may have hyperlipidaemia		x			x
	To investigate the patient for lipid disorders	x	x			x
	To monitor drug therapy		x			x
	To interpret the guidelines for treatment of hyperlipidaemia in the context of cardiovascular disease and hypertension	x	x			x
A	To involve dietitians and other health care professionals in the management of hyperlipidaemias		x		x	x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CBD
Hereditary Nephritis						
Objective - The trainee will be able to carry out specialist assessment and treatment of patients with hereditary nephritis						
K	To describe the pathological features of hereditary nephritis and its clinical manifestations	x				x
	To define the spectrum of disease including thin basement membrane disease and Alport's syndrome	x				x
	To describe the molecular and genetic abnormalities in Alport's syndrome	x				x
S	To take a history, including family history, and perform an examination of patients who may have hereditary nephritis		x			x
	To plan and undertake appropriate investigations including renal biopsy	x	x	x		x
	To manage the progressive nature of renal disease in Alport's syndrome		x			x
A	To explain the mode of inheritance of hereditary nephritis and deal with anxieties in the wider family		x			x

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Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Less Common Renal Conditions						
The trainee will be able to carry out specialist assessment and treatment of patients with less common renal disease and multisystem disease which effects the kidney						
K	To describe the pathogenesis of renal disease in amyloidosis, scleroderma, mixed essential cryoglobulinaemia, Fabry's disease (*as examples*)	x				x
S	To take a relevant history and perform an appropriate examination to make a diagnosis and assess the patient who may have multisystem disease affecting the kidney		x			x
	To plan and interpret the investigations of such a patient	x	x			x
	To work closely with other specialists involved in the care of such patients		x			x
A	To appreciate the multidisciplinary approach to investigation and treatment of these diseases		x		x	x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Drug Prescribing in Renal Disease						
Objective - The trainee will be able to prescribe drugs to patients with acute and chronic renal impairment including dialysis and renal transplant patients						
K	To define the principles of pharmacokinetics and the handling of drugs in the presence of renal impairment	x				x
	To list the effect of haemodialysis, haemofiltration, haemodiafiltration and peritoneal dialysis upon drug prescribing	x				x
	To describe the principles of drug interactions with particular reference to immunosuppressive Drugs	x	x			x
	To define how drugs may affect renal function	x	x			x
S	To prescribe safely and efficiently to patients with renal disease		x		x	x
	To educate patients with renal disease on the importance of compliance and reporting of problems		x		x	x
	To devise methods to reduce complications of prescribing in patients with renal disease		x		x	x
	To devise methods to improve compliance		x		x	x
A	To inform other health care professionals of the implications of prescribing in renal disease		x		x	x
	To appreciate role of pharmacists and other health care professionals in safe prescribing		x		x	x

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Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Renal Bone Disease						
Objective - The trainee will be able to supervise and manage patients with chronic kidney disease at risk of developing renal bone disease						
K	To describe the pathophysiology of renal bone disease and to contrast the differences between osteomalacia, hyperparathyoid associated disease and adynamic bone disease	x				x
	To describe the use of biochemical tests, imaging techniques and histological methods in the diagnosis and management of renal bone disease	x	x			x
	To describe the indications for and the use of phosphate binders, vitamin D preparations and parathyroidectomy and means to monitor treatment and adverse effects	x	x			x
S	To prevent, diagnose and manage renal bone disease in patients with chronic renal failure before initiation of renal replacement therapy	x	x			x
	To manage the bone disease in patients on peritoneal dialysis, haemodialysis and with a renal transplant	x	x			x
	To decide which patients need parathyroidectomy and calcimimetics and how to manage them	x	x			x
A	To appreciate the role of dietitians and dialysis staff in the prevention and management of renal bone disease with education and involvement of the patient		x		x	x
	To appreciate the multidisciplinary nature of management of renal bone disease		x		x	x

Renal Medicine (Nephrology) Assessment Blueprint

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Renal Anaemia						
Objective - The trainee will be able to supervise and manage patients with chronic kidney disease who develop anaemia						
K	To describe the pathophysiology of renal anaemia and the haematological and biochemical methods to diagnose, assess and monitor treatment in renal anaemia	x				x
	To define the indications for and the use of human recombinant erythropoietin and its complications	x	x			x
	To define the indications for and use of oral and parenteral iron therapy and its complications	x	x			x
	To list the causes of erythropoietin resistance and its investigation	x	x			x
S	To diagnose and treat renal anaemia, to monitor the effects of treatment and manage failure of treatment		x			x
	To prescribe and monitor iron replacement therapy		x			x
	To audit the use of erythropoietin and iron therapy		x			x
A	To ensure that all patients predialysis and on dialysis who will benefit from erythropoietin receive therapy		x			x
	To appreciate role of nurses in the initial counselling of patients, initiation and the long term management of renal anaemia		x		x	x
	To involve management and purchasers in the development of protocols for the use of erythropoietin		x			x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Acute Renal Replacement Therapy						
The trainee will be able to supervise and manage acute renal replacement therapy						
K	To describe the principles of haemodialysis, haemofiltration and haemodialfiltration and indications for their use	x				x
	To compare and contrast each method	x	x			x
	To describe the methods of creating vascular access for acute renal replacement therapy	x	x			x
S	To assess the suitability of a patient for haemodialysis, haemofiltration or haemodiafiltration	x	x			x
	To adjust the prescription of haemodialysis, haemofiltration and haemodiafiltration and monitor change	x	x			x
	To manage drug prescribing	x	x			x
	To manage nutrition	x	x			x
	To manage the patient with multiorgan failure or systemic disease requiring acute renal replacement therapy	x	x			x
A	To appreciate role of nurses in the management of acute renal replacement therapy		x		x	x
	To appreciate the role of anaesthetists and intensivists in the management of patients with multisystem disease of multiorgan failure requiring acute renal replacement therapy		x			x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Plasmapheresis						
Objective - The trainee will be able to supervise and manage patients requiring plasmapheresis						
K	To describe the principles of plasmapheresis, its indications and complications	x				x
	To describe its use in the context of other treatment modalities and for non-renal conditions	x				x
S	To assess the suitability of a patient for plasmapheresis	x	x			x
	To manage the patient with acute renal failure requiring both plasmapheresis and acute renal replacement therapy		x			x
	To assess response to treatment and monitor change	x	x			x
A	To appreciate role of nurses in the management of plasmapheresis		x		x	x
	To appreciate the multidisciplinary approach to the patient with multisystem disease		x		x	x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Peritoneal Dialysis – General Principles						
Objective - The trainee will be able to supervise and manage patients on chronic peritoneal dialysis						
K	To describe the principles of peritoneal dialysis and to compare and contrast chronic ambulatory peritoneal dialysis and automated peritoneal dialysis	x				x
	To describe the different methods of insertion of peritoneal dialysis catheters and their advantages and disadvantages	x	x			x
	To describe the methods to assess adequacy of peritoneal dialysis	x	x			x
S	To assess the suitability of a patient for peritoneal dialysis in the context of other methods of renal replacement therapy		x			x
	To adjust the prescription of peritoneal dialysis and monitor change	x	x			x
	To manage the nutrition of peritoneal dialysis patients	x	x			x
	To appreciate the cost implications of different catheters, fluids and systems in peritoneal dialysis		x			x
	To work closely with management and purchasers to ensure cost effective peritoneal dialysis treatment		x			x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Peritoneal Dialysis – General Principles continued						
Objective - The trainee will be able to supervise and manage patients on chronic peritoneal dialysis						
A	To discuss the relevant treatment options and the comparisons of haemodialysis, chronic ambulatory peritoneal dialysis and automated peritoneal dialysis in a manner that will allow clear understanding of choice		x			x
	To discuss the implications of failure of peritoneal dialysis and the complementary nature of renal replacement therapy		x			x
	To discuss the withdrawal of dialysis with patients, carers an other health care professionals		x		x	x
	Appreciate role of nurses in the initial counselling of patients, initiation and the long term management of peritoneal dialysis		x		x	x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Peritoneal Dialysis - Complications						
The trainee will be able to identify and manage the complications of chronic peritoneal dialysis						
K	To describe the diagnosis and management of peritoneal dialysis peritonitis including non – bacterial infections	x	x			x
	To describe the diagnosis and management of catheter and exit site associated infection	x	x			x
	To describe the diagnosis of mechanical problems associated with peritoneal dialysis (including hernia, leaks, catheter malfunction)	x	x			x
	To describe the methods to assess failure of ultrafiltration and adequacy of dialysis	x	x			x
S	To adjust the prescription of peritoneal dialysis and monitor change following complications	x	x			x
	To manage the treatment of peritoneal dialysis peritonitis and its complications; and catheter associated problems	x	x			x
	To manage peritoneal dialysis failure	x	x			x
	To be able to communicate to patient about potential complications and need to change to APD (from CAPD) or to HD when needed		x			x
A	To appreciate the multidisciplinary approach to the management of complications of peritoneal dialysis		x		x	x
	To appreciate the use of local protocols for management of peritonitis and exit site infections		x		x	x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Haemodialysis – General Principles						
Objective - The trainee will be able to supervise and manage patients on chronic haemodialysis						
K	To describe the principles of haemodialysis and compare and contrast haemodialysis with other treatment modalities	x	x			x
	To describe the methods of creating vascular access for haemodialysis	x	x			x
	To define the methods to assess adequacy of haemodialysis	x	x			x
S	To assess the suitability of a patient for haemodialysis and to plan (when possible) the initiation of haemodialysis	x	x			x
	To prepare the patient both physically and psychologically for haemodialysis		x			x
	To anticipate and overcome difficulties with vascular access		x			x
	To adjust the prescription of haemodialysis and monitor change		x			x
A	To develop a framework to discuss problems with haemodialysis including the withdrawal of dialysis	x	x			x
	To appreciate role of nurses in the initial counselling of patients, initiation and the long term management of haemodialysis		x		x	x
	To appreciate the multidisciplinary nature of management of haemodialysis		x		x	x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Haemodialysis – Clinical Management						
The trainee will be able to undertake the planning of haemodialysis, its prescription and measurement of its adequacy						
K	To describe the means to deliver purified water, the necessary standards and methods of assessing these	x				x
	To describe different dialysis membranes and dialysate fluids	x				x
	To describe the theory of sodium profiling and ultrafiltration	x				x
	To define the methods to assess adequacy of haemodialysis	x	x			x
S	To adjust the prescription of haemodialysis and monitor change	x	x			x
	To advise on ultrafiltration, sodium profiling and use of different dialysate solutions	x	x			x
	To assess the suitability of different methods of vascular access	x	x			x
	To organise the day to day management of a dialysis unit		x		x	x
A	To appreciate role of nurses and other health care professionals in the day to day management of haemodialysis and changes in prescription		x		x	x
	To work closely with management and purchasers to ensure cost effective treatment		x			x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Haemodialysis - Complications						
Objective - The trainee will be able to manage the complications of haemodialysis						
K	To describe the complications of arterio-venous fistulae and artificial grafts including thrombosis, haemorrhage, infection, stenoses and poor flow	x	x			x
	To define the methods of dealing with dialysis line sepsis, poor flow and line blockage	x	x			x
	To describe the management of hard water syndrome, air embolism and EtO reactions.	x	x			x
	To define the principles behind the causation and management of intradialytic hypotension	x	x			x
	To describe the pathophysiology and management of dialysis associated amyloid	x	x			x
S	To identify and manage the complications of vascular access involving, when necessary, surgeons and radiologists	x	x			x
	To manage dialysis related sepsis and develop protocols with microbiologists	x	x			x
	To develop protocols to deal with acute dialysis emergencies		x			x
A	To appreciate role of nurses and other health care professionals in the day to day management of haemodialysis and its complications		x		x	x
	To appreciate the multidisciplinary nature of management of haemodialysis complications with development of close working relationships with surgeons and radiologists in the management of vascular access complications		x		x	x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Renal Transplantation – Pre Transplant						
Objective - The trainee will be able to supervise and manage patients who are suitable for renal transplantation						
K	To describe the principles of renal transplantation, its medical and surgical, social and ethical contraindications	x	x			x
	To describe the ethical and legal framework for renal transplantation, with particular reference to the Human Tissue Act	x	x			x
	To compare and contrast renal transplantation with other treatment modalities	x	x			x
	To describe the recommendations for live related and live unrelated renal transplantation	x	x			x
	To describe the advantages and disadvantages of pre-dialysis transplantation	x	x			x
	To describe the theoretical and practical application of blood grouping, HLA matching and donor – recipient cross matching	x	x			x
	To describe the mode of action of immunosuppressive agents and their adverse effects	x	x			x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Renal Transplantation – Pre Transplant continued						
Objective - The trainee will be able to supervise and manage patients who are suitable for renal transplantation						
S	To assess the suitability of a patient for a renal transplant		x			x
	To discuss the pros and cons of renal transplantation		x			x
	To discuss the issues of live related and live unrelated renal transplantation and transplantation pre-dialysis		x			x
	To counsel patients and relatives in all aspects of renal transplantation		x			x
	To plan and carry out protocols for pre transplant assessment		x			x
A	To appreciate role of nurses in the initial counselling of patients		x		x	x
	To appreciate the multidisciplinary nature of management of renal transplantation		x		x	x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Renal Transplantation – Acute Stage						
The trainee will be able to manage patients in the early stages of renal transplantation						
K	To describe the medical and surgical problems which occur in the first three months following renal transplantation	x	x			x
	To describe the indications for ultrasound scanning, isotope scanning and radiological investigations in the acute stage following renal transplantation	x	x			x
	To define methods used to diagnose acute rejection including biopsy techniques	x	x			x
	To define the mode of action of immunosuppressive agents and their adverse effects and to describe methods used to treat and overcome acute rejection	x	x			x
	To describe strategies in the acute stage of renal transplantation which will influence long term graft function	x	x			x
S	To assess renal transplant function	x	x			x
	To interpret the methods used to diagnose acute rejection, surgical complications and medical complications of renal transplantation	x	x			x
	To plan and modify immunosuppressive therapy	x	x			x
	To counsel patients and relatives in all aspects of renal transplantation		x			x
A	To appreciate role of nurses in the care of patients undergoing renal transplantation		x		x	x
	To appreciate the multidisciplinary nature of management of renal transplantation		x		x	x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Renal Transplantation – Chronic Stage						
The trainee will be able to undertake the long term supervision and management of renal transplant recipients						
K	To describe the medical and surgical problems which occur after the first three months following renal transplantation	x	x			x
	To define the mode of action of immunosuppressive agents and their adverse effects	x	x			x
	To describe strategies in the acute and chronic phases of renal transplantation which will influence long term graft function	x	x			x
	To describe the strategies to prevent the development of cardiovascular disease	x	x			x
S	To assess renal transplant function, to investigate deteriorating renal function and adjust immunosuppressive therapy accordingly	x	x			x
	To interpret investigations to identify non-immunological problems and manage them	x	x			x
	To manage the medical complications of a failing renal transplant	x	x			x
	To manage cardiovascular disease in a renal transplant patient	x	x			x
	To counsel patients and relatives in all aspects of renal transplantation, and in particular those with a failing graft who require discussion of future management on renal replacement therapy		x			x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Renal Transplantation – Chronic Stage continued						
The trainee will be able to undertake the long term supervision and management of renal transplant recipients						
A	To encourage patients, relatives and carers to participate the in joint care		x			x
	To appreciate role of nurses in the care of patients with a renal transplant		x		x	x
	To appreciate the multidisciplinary nature of management of renal transplantation		x		x	x

End of Life Care						
Objective - The trainee will be able to identify patients with chronic kidney disease who require end of life palliative care, and will be able to supervise and manage their care as part of a multi-disciplinary team						
K	To describe the many symptoms of chronic kidney disease related to its complications and associated comorbidities	x	x			x
	To describe the principles of pain relief and use of analgesia in end stage renal disease	x	x			x
	To describe factors affecting survival in patients with end stage renal disease	x	x			x
	To describe the principles of bereavement management		x			x
	To describe clinical features of dying		x			x
	To describe a medicolegal framework for decisions about treatment and advanced directives		x			x
	To be aware of integrated care pathways for dying patients		x			x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
End of Life Care continued						
Objective - The trainee will be able to identify patients with chronic kidney disease who require end of life palliative care, and will be able to supervise and manage their care as part of a multi-disciplinary team						
S	To identify patients who require end of life management and palliative care.		x			x
	To counsel patients and carers concerning conservative (non-dialysis, non-transplant) management of end stage kidney failure		x			x
	To control the symptoms of end stage renal disease	x	x			x
	To recognise and instigate management of depression		x			x
	To discuss the withdrawal of dialysis with patients, carers and other health care professionals		x		x	x
	To be able to recognize complex symptoms that need referral to specialist palliative care		x			x
A	To appreciate the role of other health professionals, such as palliative care nurses and physicians, in the care of patients who require end of life management.		x		x	x
	To appreciate the role of primary care		x			x
	To appreciate the multicultural aspects of bereavement		x			x
	To appreciate that patients have physical, social, spiritual and psychological needs		x		x	x
	To be aware of the complex needs of patients and families when facing death		x		x	x
	To appreciate the need for good communication with the patient and their family		x		x	x

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Part 2.2: Procedure Based Competencies						
Renal Biopsy						
Objective - The trainee will be competent in performing native and transplant renal biopsy						
K	To describe the anatomy of both native and transplant kidneys	x		x		
	To define the indications for renal biopsy of native and transplant kidneys	x		x		
	To describe the complications and methods to minimize these	x		x		
S	To decide when a renal biopsy is indicated	x		x		
	To discuss the indications, benefits and adverse events of the procedure to patients, relatives and carers in a manner that will allow informed consent		x	x		
	To perform renal biopsy on native and transplant kidneys			x		
	To use ultrasound to localize kidneys and use ultrasound guidance to assist in renal biopsy			x		
	To interpret renal biopsy with the assistance of a renal histopathologist	x		x		
	To manage the complications of renal biopsy	x		x		
A	To appreciate the role of radiologist or radiographer (if appropriate) and histopathologist.		x	x		
	To have appropriate self-confidence and recognition of limitations			x		

Curriculum area	Competence	Specialist Exam	Mini-CEX	DOPS	MSF	CbD
Insertion of Temporary Haemodialysis Catheters						
The trainee will be competent at carrying out the insertion of temporary haemodialysis catheters						
K	To describe the anatomy of the central venous system in the upper thorax and neck and of the femoral veins	x	x	x		
	To define the indications for insertion of temporary haemodialysis catheters, the complications and means to minimize these	x	x	x		
	To describe the treatment of catheter sepsis and blocked catheters	x	x	x		
S	To discuss the indications, benefits and adverse events of the procedure to patients, relatives and carers in a manner that will allow informed consent		x	x		
	To perform insertion of temporary haemodialysis catheters using the Seldinger technique using both internal jugular and femoral veins			x		
	To use ultrasound guidance (where appropriate) for localizing and cannulation of jugular and femoral veins			x		
	To explain the use of the catheter and its management to the patient, relatives and carers		x	x		
A	To appreciate role of nurses in the management of a catheter after its insertion and to ensure education of patients and carers			x	x	
	To demonstrate appropriate self-confidence and recognition of limitations			x		