NEW CURRICULA

Basic Training (Adult Internal Medicine)

Knowledge Guides

RACP Specialists. Together

About this document

The new Basic Training (Adult Internal Medicine) curriculum consists of curriculum standards and learning, teaching, and assessment (LTA) programs.

This document outlines the Knowledge Guides included as part of the curriculum standards for Basic Training (Adult Internal Medicine) for trainees and supervisors. The curriculum standards should be used in conjunction with the Basic Training (Adult Internal Medicine) LTA programs.

How to reference this document

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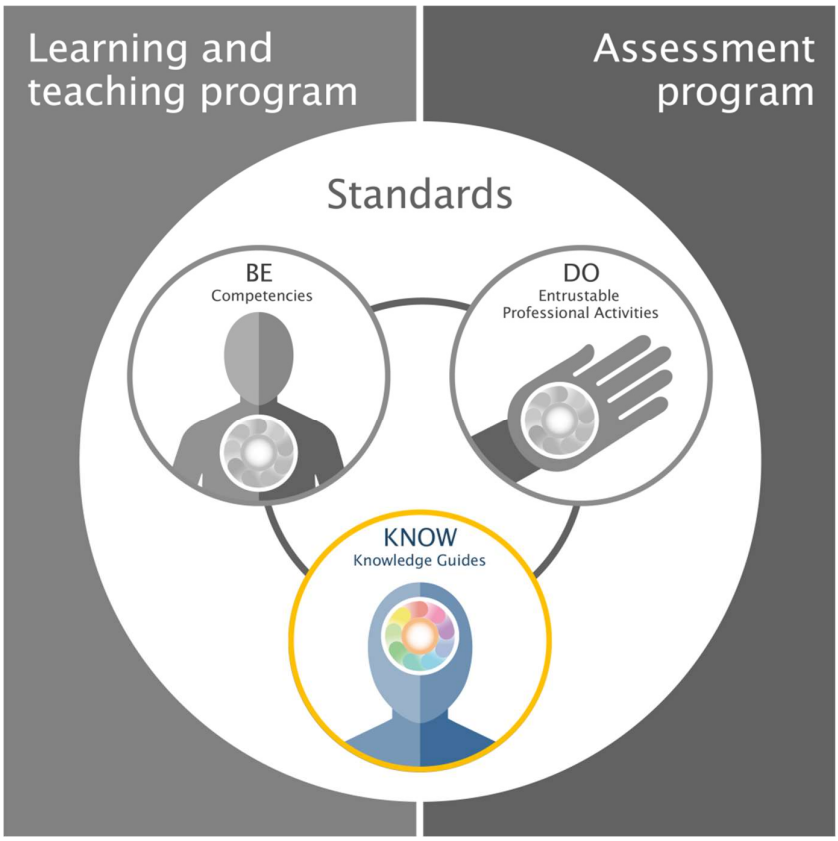
Contents

Introduction	**4**
Cardiology	**5**
Dermatology	**8**
Endocrinology	**11**
Gastroenterology	**15**
General Medicine	**17**
Genetic and Metabolic Medicine	**22**
Geriatric Medicine	**25**
Haematology	**28**
Immunology and Allergy	**31**
Infectious Diseases	**34**
Medical Obstetrics	**37**
Medical Oncology	**39**
Nephrology	**42**
Neurology	**44**
Palliative Medicine	**47**
Pharmacology, Toxicology and Addiction Medicine	**50**
Respiratory and Sleep Medicine	**54**
Rheumatology	**56**
Glossary	**59**

Introduction

The RACP curriculum model depicts the structure of RACP curricula. It contains five components: **curriculum standards**, consisting of Competencies, Entrustable Professional Activities, and Knowledge Guides; **learning and teaching program**; and **assessment program**.



RACP curriculum model

This document contains the **Knowledge Guides** component of the Adult Internal Medicine curriculum standards.

> Knowledge Guides articulate the baseline level of knowledge that trainees need to acquire by the end of their training.

The Knowledge Guides provide detailed guidance to trainees on the important topics and concepts they need to understand in order to pass their assessments and become competent physicians. The Guides are a basis for knowledge acquisition; they do not outline the range of experience expected of all Basic Trainees.

The Knowledge Guides primarily relate to the medical expertise domain of the RACP Professional Practice Framework though they also highlight important specific issues relating to other domains of the framework.

KEY PRESENTATIONS AND CONDITIONS

Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations

- Breathlessness
- Chest pain
- Oedema
- Palpitations
- Syncope

Conditions

- Acute coronary syndromes:
  - non-ST elevation myocardial infarction (NSTEMI)
  - ST-elevation myocardial infarction (STEMI)
- Acute pericarditis
- Aortopathy
- Cardiac arrhythmias:
  - atrial fibrillation
  - atrial flutter
  - atrioventricular node conduction block
  - bundle-branch and fascicular block
  - sinus node dysfunction
  - supraventricular tachycardia
  - ventricular tachycardia
- Heart failure:
  - preserved ejection fraction
  - reduced ejection fraction
  - valvular
- Hypertension:
  - pulmonary
  - systemic, primary and secondary
- Infective endocarditis
- Lipoprotein disorders
- Rheumatic heart disease
- Stable ischaemic heart disease
- Valvular heart disease

LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS

Basic Trainees will understand these presentations and conditions.

Conditions

- Advanced arrhythmias and channelopathies:
  - arrhythmogenic right ventricular cardiomyopathy
  - Brugada syndrome
  - long QT syndrome
  - Wolff–Parkinson–White syndrome
- Cardiomyopathy:
  - dilated

For each presentation and condition, Basic Trainees will **know how to:**

Synthesise

- recognise the clinical presentation
- identify relevant epidemiology, pathophysiology, and clinical science
- take a relevant clinical history
- conduct an appropriate examination
- establish a differential diagnosis
- plan and arrange appropriate investigations
- consider the impact of illness and disease on patients[1] and their quality of life

Manage

- provide evidence-based management
  For less common or more complex presentations and conditions the trainee must also seek expert opinions
- prescribe therapies tailored to patients' needs and conditions
- recognise potential complications of disease and its management, and initiate preventative strategies
- involve multidisciplinary teams

Consider other factors

- identify individual and social factors and the impact of these on diagnosis and management

[1] References to patients in the remainder of this document may include their families or carers.

Basic Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.	» hypertrophic » restrictive • Cardiovascular manifestations of systemic and chronic disease, such as amyloidosis, diabetes mellitus, HIV, renal disease, rheumatoid arthritis, systemic lupus erythematosus, and thyroid disease • Cholesterol embolus • Congenital heart disease: » atrial and ventricular septal defects » coarctation of the aorta » Eisenmenger syndrome » Marfan syndrome » tetralogy of Fallot (TOF) » transposition of the great arteries • Pericardial disease: » constrictive pericarditis » Dressler syndrome » pericardial effusion and tamponade • Peripheral vascular disease	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	• Anatomy and physiology of the cardiovascular system • Coronary blood flow • Lipid metabolism • Pathophysiology of heart failure • Pharmacology of major drug classes used: » antiarrhythmic drugs » anticoagulant drugs » antiplatelet drugs » beta blockers » calcium channel blockers » diuretics » lipid-modifying agents » nitrates and antianginals » renin-angiotensin-aldosterone inhibitors • Regulation of arterial blood pressure and the role of the renin–angiotensin–aldosterone system • Regulation of cardiac output • Risk markers and primary prevention of cardiovascular disease • Vascular biology and the pathophysiology of atherosclerosis	
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools.	Investigations • Ankle-brachial index and arterial Dopplers • Blood tests, such as troponin and B-type natriuretic peptide • Cardiac MRI • Coronary angiography • CT coronary angiography and coronary calcium score • Duplex ultrasound scans • Echocardiography, including stress echocardiography • Electrocardiography • Exercise stress testing • Holter monitoring • Myocardial perfusion scans Procedures	

Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	• Cardiac resynchronisation therapy (know indications for) • Defibrillators (know indications for) • Pacemakers (know indications for)
IMPORTANT SPECIFIC ISSUES Basic Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management.	• Restrictions on driving following cardiac illness, as identified by the statutory body • The incidence of, and the risk factors for, cardiovascular disease in individuals and patient groups, such as: » elderly patients » Māori and Aboriginal and Torres Strait Islander peoples » patients with comorbidities » patients with risk factors for atherosclerotic vascular disease » pregnant patients

KEY PRESENTATIONS AND CONDITIONS

Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations

- Cutaneous drug, chemical, and vaccine reactions, such as drug hypersensitivity, and Stevens–Johnson syndrome
- Urticaria
- Viral exanthems

Conditions

- Acne
- Bacterial infections, such as:
  - abscess
  - cellulitis
  - folliculitis
  - impetigo
- Calciphylaxis
- Cutaneous manifestations of systemic diseases:
  - acne
  - angioedema
  - diabetic ulcers
  - hirsutism
  - psoriasis
  - Raynaud phenomenon
  - spider naevi
- Cutaneous oncology, such as:
  - basal cell carcinoma
  - breast cancer skin changes
  - melanoma
  - premalignant skin lesions
  - squamous cell carcinoma
- Dermatitis:
  - atopic (eczema)
  - contact
  - seborrheic
  - stasis
- Fungal infections of skin and nails
- Parasitic infections, such as head lice and scabies
- Psoriasis
- Rosacea
- Skin ulcers:
  - arterial
  - neuropathic
  - pyoderma gangrenosum
  - traumatic
  - venous
- Viral infections, such as:
  - herpes simplex virus
  - human papilloma virus
  - varicella zoster virus
- Vitiligo

For each presentation and condition, Basic Trainees will **know how to:**

Synthesise

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- identify relevant epidemiology, pathophysiology, and clinical science
- take a relevant clinical history
- conduct an appropriate examination
- establish a differential diagnosis
- plan and arrange appropriate investigations
- consider the impact of illness and disease on patients[1] and their quality of life

Manage

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- involve multidisciplinary teams

Consider other factors

- identify individual and social factors and the impact of these on diagnosis and management

LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS Basic Trainees will understand these presentations and conditions. Basic Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.	Presentations • Ulcers: » genital » oral Conditions • Alopecia areata • Asteatotic eczema • Autoimmune bullous disease, such as: » bullous pemphigoid » pemphigus vulgaris • Cutaneous manifestations of adverse effects of therapeutic interventions, such as: » anticoagulant-related skin necrosis » cholesterol emboli » drug hypersensitivity syndrome » lipoatrophy » toxic epidermal necrolysis • Cutaneous manifestations of inherited disorders, such as: » Ehlers–Danlos syndrome » neurofibromatosis » tuberous sclerosis • Cutaneous manifestations of systemic disease, such as: » Behçet disease » cryoglobulinemia » dermatomyositis » diabetes-related skin conditions » erythema multiforme » erythema nodosum » porphyria » syphilis » systemic scleroderma (diffuse and limited cutaneous, including CREST syndrome) » vasculitic rashes » vitamin deficiency • Dermatological issues related to immunosuppression, such as graft versus host disease and Kaposi sarcoma	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	• Pigmentary, inflammatory, and immune responses of the skin • Principles of the innate and adaptive immune systems • Structure and function of skin, hair, and nails, and how these change with age	

INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools. Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	Investigations • Biopsy of lesion or skin: » culture » direct immunofluorescence » histology • Laboratory and imaging investigations for associated systemic disease • Mole maps • Nail clipping • Skin autoantibodies • Skin scraping • Visual recognition of cancers • Wound swab: » bacterial » viral Procedures • Cryoablation • Curettage and cautery • Excision and draining of abscesses • Phototherapy • Radiotherapy
IMPORTANT SPECIFIC ISSUES Basic Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management.	• Education of patients in the use of topical treatments, dressings, and preventive management • Effect of acne on the mental health of adolescents and young adults • Impact of cutaneous disease on patient morbidity and mortality • Implications of immunosuppressive therapy in terms of adverse effects, monitoring, and preventative measures • Indications for screening for skin cancers in the general immunosuppressed populations • Process of counselling about and gaining informed consent for procedures, such as skin biopsy under local anaesthetic • Psychological and social impacts of skin disease • Role of phototherapy, systemic immunosuppressant medications, and biologic agents in the management of skin disease

KEY PRESENTATIONS AND CONDITIONS

Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Conditions

- Acute metabolic derangements
  - » adrenal insufficiency
  - » diabetic ketoacidosis
  - » electrolyte disorders
  - » hyperglycaemic hyperosmolar state
  - » hypertensive crisis
  - » hypo- and hypercalcaemia
  - » hypo- and hypernatraemia
  - » hypoglycaemia
  - » pituitary apoplexy
  - » thyroid storm
- Diabetes mellitus and its complications
  - » type 1
  - » type 2
- Glucocorticoid therapy complications
- Obesity and metabolic syndrome
- Osteoporosis and osteopenia
- Polycystic ovary syndrome
- Thyroid disease
  - » hypo- and hyperthyroidism
  - » thyroid nodules

LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS

Basic Trainees will understand these presentations and conditions.

Basic Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.

Conditions

- Adrenal gland disorders:
  - » adrenal carcinoma
  - » adrenal incidentaloma
  - » adrenal insufficiency
  - » congenital adrenal hyperplasia
- Bone metabolism disorders:
  - » osteomalacia
  - » Paget disease
  - » vitamin D deficiency
- Diabetes insipidus:
  - » cranial
  - » nephrogenic
- Endocrine disorders in pregnancy:
  - » diabetes mellitus
    - ○ gestational
    - ○ pre-existing
  - » thyroid disease
- Gender dysphoria and management of transgender patients
- Gonadal system:
  - » amenorrhea, primary and secondary
  - » infertility
  - » male hypogonadism
  - » menopause
- Hypothalamic–pituitary axis disorders:

For each presentation and condition, Basic Trainees will **know how to:**

Synthesise

- » recognise the clinical presentation
- » identify relevant epidemiology, pathophysiology, and clinical science
- » take a relevant clinical history
- » conduct an appropriate examination
- » establish a differential diagnosis
- » plan and arrange appropriate investigations
- » consider the impact of illness and disease on patients[1] and their quality of life

Manage

- » provide evidence-based management
  For less common or more complex presentations and conditions the trainee must also seek expert opinions
- » prescribe therapies tailored to patients' needs and conditions
- » recognise potential complications of disease and its management, and initiate preventative strategies
- » involve multidisciplinary teams

Consider other factors

- » identify individual and social factors and the impact of these on diagnosis and management

	» acromegaly » Cushing syndrome » hypophysitis » hypopituitarism » prolactin excess – prolactinoma and stalk effect » thyrotropinoma (TSH-oma) • Multiple endocrine neoplasia • Neuroendocrine tumours • Parathyroid disease • Pituitary disease • Secondary hypertensive disorders: » phaeochromocytoma » primary hyperaldosteronism • Thyroid disease, such as thyroid malignancy	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	• Anatomy and physiology of the endocrine system • Autoimmunity and genetics as they relate to hormone disease • Inborn errors of metabolism (IEMs) • Management of glucocorticoid therapy, including pharmacology and physiology • Metabolic cycles such as Krebs cycle • Nutrition in relation to conditions, such as diabetes mellitus, obesity, and osteoporosis • Pharmacology of major drug classes used to treat diabetes, osteoporosis, and syndromes of hormonal excess or deficiency • Processes of sexual differentiation, growth, development, puberty, reproduction, and ageing • Secretion, transport, and feedback control of hormones • Structure and function of adipose tissue, adrenals, bone, gonads, hypothalamus, parathyroids, pituitary, and thyroid • Structure and function of hormones, hormone action, hormone receptors, and second messengers	
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools. Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	Investigations • Antibody testing for autoimmune endocrine disease: » diabetes mellitus, type 1 » thyroid disease • Carcinoid tumour marker tests: » 5-hydroxyindoleacetic acid urine » chromogranin A • Diabetes-related investigations: » acid–base investigations » albumin-to-creatinine ratio test » C-peptide test » HbA1c • Diagnostic tests for bone and mineral metabolism disorders (interpret results in the context of serum, urine calcium, and phosphate levels): » 1:25 dihydroxy vitamin D » 25-hydroxyvitamin *D (calcitriol*) » bone turnover markers » parathyroid hormone » parathyroid hormone-related protein • DXA bone scan • Endocrine dynamic function tests: » 72 hour fast	

	» ACTH stimulation test (short synacthen test) » dexamethasone suppression tests » insulin tolerance test » salt suppression tests » urinary free cortisol / salivary cortisol » water deprivation test • Fluid and electrolyte balance investigations • Gastrointestinal hormone levels • Imaging of endocrine organs (to assess function): » parathyroid sestamibi » technetium-labelled thyroid scan • Imaging of endocrine organs (to assess structure): » CT » MRI » ultrasound • Investigations for phaeochromocytoma • Markers of endocrine neoplasia • Pituitary function testing • Sex hormone levels • Thyroid hormone levels Clinical assessment tools • Anthropometric assessment: » body mass index (BMI) » triceps skinfold » waist-to-hip ratio (WHR) • Growth charts
IMPORTANT SPECIFIC ISSUES Basic Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management.	• Diabetes mellitus management: » cultural, linguistic, and religious influences on management, such as traditional foods, attitudes to weight, and fasting periods » design of medication regimens appropriate to patients' social support, coping skills, comorbidities, and life expectancy » epidemiology and challenges of management in Māori and Aboriginal and Torres Strait Islander peoples » multidisciplinary approach to management and the roles of diabetes educator, dietician, podiatry, psychologist, and other allied health professionals » practical and psychological aspects of blood glucose monitoring and insulin therapy, including needle phobia, safe use and disposal of sharps, hypoglycaemia, and driving or occupational issues » psychosocial factors impacting the care of young adult patients with diabetes transitioning from paediatric care » regular screening for complications » targets for glycaemic control and other metabolic parameters • Nutrition: » investigations and lifestyle counselling for obese patients and the role of surgery (restrictive and malabsorptive procedures) in managing severe cases of obesity » potential public health and personal health consequences, both physical and psychological, of the obesity epidemic » principles of healthy nutrition and physical activity throughout the lifespan

- refeeding management in chronically undernourished patients and in the case of starvation
- Postoperative management of patients who have undergone:
  - adrenal surgery
  - pituitary surgery
  - thyroid surgery

KEY PRESENTATIONS AND CONDITIONS

Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations

- Abdominal pain
- Altered bowel habit
- Diarrhoea, acute and chronic
- Gastrointestinal (GI) bleeding
- Indigestion
- Jaundice
- Pallor and fatigue

Conditions

- Biliary obstruction
- Bowel cancer
- Coeliac disease
- Gallstones
- Gastro-oesophageal reflux disease
- Hepatitis:
  - » alcohol induced
  - » autoimmune
  - » drug induced
  - » viral
- Inflammatory bowel disease
- Iron deficiency
- Irritable bowel syndrome
- Liver disease:
  - » acute
  - » alcoholic
  - » chronic
- Non-alcoholic steatohepatitis (NASH)
- Pancreatitis
- Peptic ulcer disease

LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS

Basic Trainees will understand these presentations and conditions.

Basic Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.

Conditions

- Barrett's oesophagus
- GI malignancy
- GI manifestations of systemic and chronic disease, such as amyloidosis, cystic fibrosis, diabetes, and neuroendocrine tumours
- Liver disease of less common aetiology, such as:
  - » haemochromatosis
  - » primary biliary cirrhosis (PBC)
  - » primary sclerosing cholangitis (PSC)
  - » Wilson disease
- Malabsorption
- Malnutrition
- Oesophageal motility disorders

For each presentation and condition, Basic Trainees will **know how to:**

Synthesise

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- » involve multidisciplinary teams

Consider other factors

- » identify individual and social factors and the impact of these on diagnosis and management

EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	• Alcohol metabolism • Anatomy and physiology of the GI and hepatobiliary system • Bilirubin metabolism • Hormonal or enzymatic control of the alimentary tract, including control of acid and pancreatic secretion • Laboratory markers of hepatic and pancreatic function and malabsorption • Microbiota in health and disease • Pharmacology of major drug classes used to manage gastroenterological conditions • Principles of macro- and micronutrient absorption • Principles of nutrition and fluid balance
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools. Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	Investigations • Abdominal imaging: » CT scan » MRI, including MRA and MRCP » Ultrasound » X-ray • Bowel cancer screening • Haemochromatosis diagnostic tests • Investigation of oesophageal disorders, including 24 hour pH monitoring, oesophageal manometry, nuclear medicine transit study, and barium swallow • Laboratory tests, such as: » coeliac serology » culture and toxin testing » faecal microscopy » genetic testing (appropriate use of) » *Helicobacter pylori* testing » liver function test (LFT) » liver screen » malabsorption tests » viral serology • Liver biopsy • Non-invasive methods of assessing liver fibrosis, such as transient elastography Procedures • Endoscopic retrograde cholangiopancreatography (ERCP) • Upper and lower endoscopy Clinical assessment tools • Rectal examination
IMPORTANT SPECIFIC ISSUES Basic Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management.	• Excessive alcohol consumption • Hepatitis B and C management in context of newer therapies • Indications and pre-treatment screening for immunosuppressant and biological agents in management of inflammatory bowel disease • Indications for and complications of bariatric surgery • Indications for liver transplantation • Management of chronic liver disease complications, such as ascites, coagulopathy, and encephalopathy • Overuse of long term proton pump inhibitor medications

Patients seen during general medicine rotations often present with undifferentiated illness, multiple comorbidities, and complex psychosocial needs. Trainees will see common presentations leading to diagnoses across multiple specialty areas.

The General Medicine Knowledge Guide captures the presentations and conditions trainees are most likely to encounter during general medicine rotations, and the approach required to assess and manage patients with these presentations and conditions. The more in-depth knowledge required to manage these conditions is contained within the relevant specialty knowledge guides.

KEY PRESENTATIONS AND CONDITIONS

Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations

- Constipation
- Undifferentiated presentations, including, but not limited to:
  - » abdominal pain
  - » acute red eye
  - » anaemia
  - » chest pain
  - » confusion
  - » delirium
  - » diarrhoea
  - » fatigue
  - » fever and sepsis
  - » pain and swelling
  - » reduced level of consciousness
  - » seizure
  - » shortness of breath
  - » syncope or pre-syncope
  - » visual disturbance
  - » vomiting
  - » weakness
  - » weight loss

Conditions

- Autonomic dysfunction, including but not limited to:
  - » diabetes
  - » erectile dysfunction
  - » gastroparesis
  - » neurogenic bladder
  - » Parkinson disease
  - » postural hypotension
- Cellulitis
- Family dysfunction
  - » abuse
    - elder
    - financial
    - physical
    - psychological or emotional
    - sexual
  - » neglect
- Hypertension, acute and chronic

For each presentation and condition, Basic Trainees will **know how to:**

Synthesise

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	• Hypotension or shock, including but not limited to: » anaphylactic » cardiogenic » hypovolaemic » neurogenic » septic • Metabolic emergencies, including but not limited to: » acidosis » alkalosis » hypo- and hyperglycaemia » hypo- and hyperkalaemia » hyponatraemia • Obesity • Ophthalmology » infections, such as: ○ blepharitis ○ conjunctivitis ○ periorbital cellulitis » ophthalmological manifestations of chronic and systemic diseases, including but not limited to: ○ corticosteroid use ○ diabetes mellitus ○ hypertension ○ inflammatory bowel disease ○ rheumatoid arthritis ○ seronegative spondyloarthropathies ○ systemic lupus erythematosus • Peripheral vascular disease • Psychiatry » anxiety disorders » mood disorders » overdose or toxic effects of illicit drug use » psychotic disorders » self-harm and suicidal behaviour » substance use disorders, such as overdose and withdrawal • Significant behavioural issues, such as aggressive, challenging, non-compliant, or violent behaviours • Urinary tract infection, urosepsis or pyelonephritis • Venous thromboembolism	» involve multidisciplinary teams **Consider other factors** » identify individual and social factors and the impact of these on diagnosis and management
LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS Basic Trainees will understand these presentations and conditions.	Conditions • Psychiatry » eating disorders » gender dysphoria » personality disorders ○ anxious or fearful ○ dramatic, emotional, or erratic ○ odd or eccentric » somatoform disorder	

Basic Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.	» trauma and stressor-related disorders
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	Clinical Sciences • Basic statistical tests: » inter-quartile range » mean » median » normal distribution » parametric versus non-parametric tests » standard deviation » standard error of the mean » summary measures • Diagnostic and screening tests: » likelihood ratios » negative predictive value » positive predictive value » sensitivity » specificity • Epidemiology of disease – concepts used in describing the disease effects on a population: » attack rate » case fatality » crude versus specific rates » direct and indirect standardisation of incidence and mortality rates » incidence » population attributable risk » prevalence • Measures of effect: » absolute and relative risk » absolute and relative risk reduction » confidence intervals » hazard ratio » number needed to harm » number needed to treat » odds ratio » p-values » type 1 and type 2 errors • Basic statistical concepts: » bias » confounding » precision » validity • Key features of clinical trial design: » blinding versus concealment » clinical relevance » crossover and factorial design » power and sample size calculation » randomisation » statistical significance » trial endpoints and the role of composite endpoints • Strengths and weaknesses of different epidemiological study designs: » case control » cohort, prospective, and retrospective

	» cross sectional » ecological » randomised controlled trial » systematic review and meta-analyses
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools. Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	Clinical assessment tools • Family violence and trauma » screening tools for domestic violence • Psychiatry » mental status examination » tests of cognitive function
IMPORTANT SPECIFIC ISSUES Basic Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management.	• Approaches to clinical problem solving, such as: » effect of cognitive biases on decision making » formulation of differential diagnoses » intuition and pattern recognition • Chronic and complex care: » access to care and cost » coordination of care » health system resourcing and patient insurance status » impact of physical, cognitive, and intellectual disabilities in management of chronic disorders » management of complex or multiple comorbidities » primary, emergency, and after hours care • Collaborative goal setting and decision making when working as part of a multidisciplinary team, and respect for the professional skills of all team members • Determinants of health: » environmental factors » individual characteristics and behaviours » prevalent medical conditions: o in certain age groups o leading to hospital admissions o leading to death » socioeconomic impacts • Holistic nature of care • Psychological and social factors: » impact of physical health on psychological conditions » impact of psychological and social factors on physical health and health behaviours, such as management of chronic medical illness » role of social services in providing community support • Patient-centred care: » impact of patients' background on their health or health behaviours, such as:

        - Māori patients and Aboriginal and Torres Strait Islanders
        - adolescent and young adult patients
        - patients from culturally and linguistically diverse backgrounds
        - patients with disability, including cognitive, intellectual, and physical impairment
        - patients with diverse socioeconomic backgrounds
        - patients with mental health issues
        - vulnerable patients
    - principles of patient-centred care
- Prevalence and impact of obesity across the life course and associated prevention measures, such as:
    - awareness of potential obesity prejudice and weight bias amongst health professionals and methods for reducing bias
    - clinical practice guidelines and management options for adult obesity
    - health impacts of obesity
    - education, support, health promotion, and advocacy options for working with patients to manage obesity
    - sociocultural factors and their impact on obesity, including incidence, outcome, and management
- Psychiatry:
    - basic suicide risk assessment and its limitations
    - drug and alcohol services
    - indications for use of the Mental Health Act
    - medical complications relating to mental health
    - mental health manifestations of systemic disease
    - protocols for liaison with psychiatric services
    - signs of drug use and abuse on general history and examination, and impact on presentation
- Services available to patients experiencing family violence and trauma
- Transitions in care
    - transitions between practitioners
    - transitions between settings:
        - acute settings
        - community care
        - inpatient settings
        - metropolitan hospital care
        - outpatient settings
        - rural or remote healthcare settings
        - subacute and rehabilitation settings
    - transitions from paediatric and adolescent services to adult medicine, including but not limited to patients with:
        - congenital cardiac diseases
        - developmental disorders
        - endocrinological diseases
        - inflammatory bowel disease
        - psychological disorders
        - respiratory diseases
        - rheumatological diseases
    - transitions throughout the lifespan, such as paediatric to adult medicine services and adult medicine to geriatric medicine services
- Use of risk registers and identification of complications that need to be remediated at a health system level

KEY PRESENTATIONS AND CONDITIONS

Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Conditions

- Autosomal dominant polycystic kidney disease
- Cystic fibrosis
- Down syndrome
- Familial cancer syndromes, including:
  - » BRCA1 and 2
  - » hereditary non-polyposis colorectal cancer
  - » familial adenomatous polyposis
  - » multiple endocrine neoplasia
- Haemochromatosis
- Inherited cardiac diseases, such as:
  - » Brugada syndrome
  - » hypertrophic cardiomyopathy
  - » long QT syndrome
- Inherited dementia syndromes, such as Huntington disease
- Klinefelter syndrome
- Marfan syndrome
- Muscular dystrophies
  - » Becker muscular dystrophy
  - » Duchenne muscular dystrophy
  - » myotonic dystrophy
- Neurofibromatosis type 1 (NF1)
- Noonan syndrome (NS)
- Turner syndrome

LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS

Basic Trainees will understand these presentations and conditions.

Basic Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.

Conditions

- Fabry disease
- Genetic neurocutaneous syndromes, such as:
  - » Sturge–Weber syndrome
  - » tuberous sclerosis
- Hereditary motor and sensory neuropathy
- Inherited neurological disorders, such as:
  - » hereditary spastic paresis
  - » spinocerebellar ataxia
- Metabolic causes of rhabdomyolysis, such as:
  - » CPT2 deficiency
  - » McArdle disease
- Urea cycle disorders, such as ornithine transcarbamylase (OTC) deficiency

For each presentation and condition, Basic Trainees will **know how to:**

Synthesise

- » recognise the clinical presentation
- » identify relevant epidemiology, pathophysiology, and clinical science
- » take a relevant clinical history
- » conduct an appropriate examination
- » establish a differential diagnosis
- » plan and arrange appropriate investigations
- » consider the impact of illness and disease on patients[1] and their quality of life

Manage

- » provide evidence-based management
  For less common or more complex presentations and conditions the trainee must also seek expert opinions
- » prescribe therapies tailored to patients' needs and conditions
- » recognise potential complications of disease and its management, and initiate preventative strategies
- » involve multidisciplinary teams

Consider other factors

- » identify individual and social factors and the impact of these on diagnosis and management

EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	• Basic principles of pharmacogenetics and individualised medicine • Definitions of polymorphism and mutation • Genetic testing techniques, such as polymerase chain reaction (PCR), Sanger gene sequencing, chromosomal microarray, and exome and genome sequencing • Inheritance: » imprinting » Mendelian » mitochondrial » multifactorial » parental disomy » polygenic » sex-linked » trinucleotide repeat sequences • Principles of major cancer genetics • Process of defining pathogenicity of mutations • Structure and function of human cells, genes, DNA, RNA, and proteins
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools. Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	Investigations • Chromosome microarray (CMA) • Commonly performed genetic testing (explain results only), such as: » attenuated phenotype » cystic fibrosis mutation testing » reduced penetrance » variants of uncertain significance (VOUS) • Conventional karyotype • Single gene testing, such as for cystic fibrosis, myotonic dystrophy, and spinocerebellar ataxia
IMPORTANT SPECIFIC ISSUES Basic Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management.	• Constructing and interpreting genograms, particularly in relation to determining mode of inheritance • Indications for appropriate referral to clinical genetics services, such as: » carrier testing » diagnosis of genetic syndromes » management of metabolic disorders » preimplantation genetic diagnosis » referral for prenatal testing • Legal and ethical principles of genetic testing, such as: » ethical barriers to testing minors for adult onset conditions » ethics consultation » familial implications of a genetic diagnosis, including discussion of autosomal recessive, autosomal dominant, and X-linked inheritance » need for and process of obtaining written consent » predictive testing processes • Patient and family counselling regarding findings of variants of uncertain significance (VOUS) and incidental findings in genetic testing, such as:

- absence of prognostic information
- need for family studies
- possibility of functional studies

KEY PRESENTATIONS AND CONDITIONS

Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations

- Constipation
- Deconditioning following illness
- Dementia, behavioural and psychological symptoms
- Falls
- Fractures
- Functional decline
- Gait abnormalities or gait disorders
- Incontinence, faecal and urinary
- Psychiatric presentations, such as anxiety, depression, mania, and psychosis

Conditions

- Arthritis:
  - » acute monoarthritis
  - » crystal associated arthritis, including gout and pseudogout
  - » osteoarthritis, generalised and regional
  - » polymyalgia rheumatica
  - » septic arthritis
- Cardiac conditions:
  - » atrial fibrillation
  - » heart failure
  - » ischaemic heart disease
- Delirium
- Dementia syndromes, such as:
  - » Alzheimer disease
  - » dementia with Lewy bodies
  - » frontotemporal dementia
  - » vascular dementia
- Elder abuse or family violence
- Herpes zoster
- Malnutrition and weight loss
- Oncological conditions
- Orthostatic hypotension
- Osteoporosis
- Respiratory conditions:
  - » chronic obstructive pulmonary disease
  - » pneumonia or aspiration pneumonia
- Ulcers:
  - » arterial
  - » neuropathic
  - » pressure sores
  - » shingles
  - » traumatic
  - » venous
- Urinary tract infections

For each presentation and condition, Basic Trainees will **know how to:**

Synthesise

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» conduct an appropriate examination
» establish a differential diagnosis
» plan and arrange appropriate investigations
» consider the impact of illness and disease on patients[1] and their quality of life

Manage

» provide evidence-based management
For less common or more complex presentations and conditions the trainee must also seek expert opinions
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» involve multidisciplinary teams

Consider other factors

» identify individual and social factors and the impact of these on diagnosis and management

	• Stroke	
LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS Basic Trainees will understand these presentations and conditions. Basic Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.	Presentations • Frailty Conditions • Substance use disorders: » overdose » withdrawal	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	• Biology of ageing • Changes associated with ageing in major organ systems • Concepts to be considered when appraising applicability of evidence to older people: » adverse event reporting » generalisability » levels of evidence » number needed to harm » number needed to treat » sub-group analyses • Pathophysiology of dementia • Pharmacological changes in ageing patients	
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools. Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	Investigations • Basic imaging, including but not limited to: » CT or MRI brain imaging » DXA bone scan reports • Cerebrospinal fluid (CSF), particularly in the context of delirium or acute confusional state • Laboratory tests, including but not limited to assessment of renal function in older patients Clinical assessment tools • Assessment of capacity to give informed consent • Screening tools for depression in older patients • Tests of attention in context of delirium • Tests of cognitive function, including delirium	
IMPORTANT SPECIFIC ISSUES Basic Trainees will identify important specialty-specific issues and the impact of these	• Clinical issues: » appropriateness of or need for residential care » discharge planning in older people » distinction between urinary tract infections and asymptomatic bacteriuria » functional decline, frailty, and multimorbidity, and their implication for management	

on diagnosis and management.	» judicious use of investigations and treatments in context of ageing, and recognition of situations where further investigation and management may not be of benefit or could be harmful » non-specific presentations of disease in older patients » non-surgical management of fractures in patients with osteoporosis » pain management in older patients, especially in the context of renal impairment » perioperative assessment and care » polypharmacy and prescribing issues in older patients, such as adverse drug reactions » prevention and management of complications associated with acute illness and immobilisation » setting appropriate treatment or rehabilitation goals for individual patients • Ethical and legal issues: » ethics of managing older patients: o advocacy o beneficence versus non-maleficence » medicolegal considerations and legal framework regarding care of the older person, such as: o advance care directives o competency and decision-making capacity o duty of care o end-of-life decision making o guardianship, power of attorney, and proxy decision makers o medical futility o resuscitation • Patient-centred care and multidisciplinary issues: » assessment of older patients with English as a second language » collaboration with general practitioners, allied health, and other medical specialists to achieve the best outcomes for patients » person- or patient-centred care as a concept, such as actively including patients, families, and carers in decisions regarding the health care or rehabilitation process » potential disadvantages arising from disability or ageing and how to assist persons in achieving their full rights in society » psychosocial factors that may influence health and rehabilitation » role of multidisciplinary team members in diagnosis and management » services available to support older people and their carers in the community

KEY PRESENTATIONS AND CONDITIONS

Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations

- Chemotherapy side effects, such as mucositis, nausea, pain, and vomiting

Conditions

- Bony lytic lesions
- Complications from blood transfusion
- Complications of immunosuppression
- Disorders of coagulation or thrombosis, such as:
  - » disseminated intravascular coagulation
  - » thrombophilia
  - » use of anticoagulants and antiplatelet agents
  - » use of antifibrinolytic agents
  - » venous thromboembolic events, such as deep vein thrombosis and pulmonary embolism and complications
- Graft versus host disease
- Haematological emergencies, such as:
  - » febrile neutropenia
  - » hypercalcaemia of malignancy
  - » spinal cord compression
  - » tumour lysis syndrome
- Haematological malignancies:
  - » Hodgkin lymphoma
  - » leukaemia, acute and chronic
  - » myelodysplasia
  - » myeloproliferative disease
  - » non-Hodgkin lymphoma
  - » plasma cell dyscrasias and multiple myeloma
- Increase in cell counts, such as:
  - » leucocytosis
  - » polycythaemia
  - » thrombocytosis
- Reduction in cell counts, such as:
  - » anaemia
  - » neutropenia
  - » thrombocytopenia

LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS

Basic Trainees will understand these

Conditions

- Amyloidosis
- Aplastic anaemia or bone marrow failure
- Bleeding disorders, such as haemophilia and von Willebrand disease (vWD)
- Complications of therapeutic interventions, such as catheter-related

For each presentation and condition, Basic Trainees will **know how to:**

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- » conduct an appropriate examination
- » establish a differential diagnosis
- » plan and arrange appropriate investigations
- » consider the impact of illness and disease on patients[1] and their quality of life

Manage

- » provide evidence-based management
  For less common or more complex presentations and conditions the trainee must also seek expert opinions
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Consider other factors

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presentations and conditions. Basic Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.	infections and thromboses, and anticoagulant-related skin necrosis • Cutaneous manifestations of haematological disease, such as cutaneous lymphoma • Haemolytic disorders	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	• Haemoglobin structure and function • Haemoglobinopathies, such as thalassaemia and sickle cell disease • Iron, B12, and folate metabolism • Principles of transfusion and bone marrow transplantation • Process of coagulation • Structure and function of blood-forming tissues, reticulo-endothelial system, and blood components and process of haematopoiesis	
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools. Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	Investigations • Basic coagulation tests, such as activated partial thromboplastin time (aPTT), D-dimer, fibrinogen levels, international normalised ratio (INR), and prothrombin time (PT) • Blood group tests • Bone marrow aspirate and trephine • CT scans in the diagnosis of lymphadenopathy or hepatosplenomegaly • Cytogenetic and molecular studies: » BCR-ABL t(9;22) » Janus kinase 2 (JAK2) V617F » PML-RARA / t(15;17) » AML, CLL, lymphoma and myeloma - molecular risk criteria • Full blood count and blood film • Iron studies • Lymph node biopsy • Peripheral blood and bone marrow immunophenotyping (know indications for flow cytometry, and the basic immunophenotypes of haematological cancers) • PET scans (know indications only) • Serum B12 and folate levels • Serum or urine electrophoresis, immunofixation, and free light chain assays • Skeletal survey and other imaging modalities, particularly in relation to myeloma diagnosis (know indications only) • Tests available for patients on direct oral anticoagulants (DOACs): » anti-Xa assays » dilute thrombin time • Tests of haemolysis: » bilirubin » direct antiglobulin test » haptoglobin » lactate dehydrogenase (LDH) » reticulocyte count • Thrombophilia screens	
IMPORTANT SPECIFIC ISSUES	• Appropriate use of blood transfusion products • Impact of new cancer diagnoses on patients and the formulation of relevant and holistic management plans	

Basic Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management.	• Issues relating to haematological disease in adolescents, such as: » comorbid disease » emotional, intellectual, physical, psychological, and social factors » legal and ethical principles » principles of sexual and reproductive health, particularly in the context of chemotherapy » risk behaviours » transition of care from paediatric health facilities • Multidisciplinary team approach to management of haematology patients and in assisting patients with hospital discharge, outpatient care, assisted living arrangements, and end-of-life care • Palliative care options for patients with terminal haematological diseases, and consultation with palliative care and psychosocial services • Patients' cultural and religious backgrounds in the context of treating haematological conditions • Social factors that influence management of haematological diseases, including cultural, geographic, religious, and socio-economic factors • Usage of alternative or complementary therapies

KEY PRESENTATIONS AND CONDITIONS

Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations

- Allergic presentations, such as urticaria

Conditions

- Allergic disorders:
  - » allergic rhinitis
  - » anaphylaxis
  - » atopic dermatitis (eczema)
  - » conjunctivitis
  - » drug reactions, adverse
  - » eosinophilic oesophagitis (EoE)
  - » food allergy
  - » sinusitis
- Angioedema
- Cryoglobulinaemia
- Drug allergies and mechanisms, such as:
  - » allergies:
    - drug reaction with eosinophilia and systemic symptoms (DRESS)
    - Stevens–Johnson syndrome
    - toxic epidermal necrolysis, mild to severe
  - » mechanisms:
    - Immunoglobulin G (IgG)
    - T-cell mediated
- Immunodeficiency syndromes:
  - » acquired:
    - HIV
    - immunosuppressive drugs
    - post-transplantation
  - » agammaglobulinaemia and hypogammaglobulinaemia
  - » combined B- and T-cell immunodeficiencies
  - » primary defects of cellular immunity

LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS

Basic Trainees will understand these presentations and conditions.

Basic Trainees will understand the resources that should be used to

Conditions

- Complement deficiencies
- Neutrophil abnormalities:
  - » granulomatous disease, chronic
  - » leucocyte adhesion deficiency
  - » neutropenia

For each presentation and condition, Basic Trainees will **know how to:**

Synthesise

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- » conduct an appropriate examination
- » establish a differential diagnosis
- » plan and arrange appropriate investigations
- » consider the impact of illness and disease on patients[1] and their quality of life

Manage

- » provide evidence-based management
  For less common or more complex presentations and conditions the trainee must also seek expert opinions
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- » involve multidisciplinary teams

Consider other factors

- » identify individual and social factors and the impact of these on diagnosis and management

help manage patients with these presentations and conditions.	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	• Action of immunosuppressive agents • Autoimmunity • Common allergic responses • Healing and repair processes • Immune responses, adaptive and innate • Immunisation • Inflammation, signs of and reasons for: » acute » chronic • Pharmacology of major drug classes used to treat immunologic and allergic conditions • Reticuloendothelial system structure and function: » lymph nodes » other lymphoid tissue » spleen • Transplant biology principles, including human leucocyte antigen (HLA)
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools. Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	Investigations • Laboratory investigations: » antibodies associated with inflammatory myositis » antineutrophil cytoplasmic antibodies (ANCA) » antinuclear antibodies (ANA) » autoantibody markers of autoimmune neurological disease, including those directed against: ○ acetylcholine receptors (AChR) ○ aquaporin-4 ○ gangliosides ○ glutamate receptors ○ myelin-associated glycoprotein (MAG) ○ N-methyl-D-aspartate (NMDA) ○ voltage-gated potassium channels (VGKC) » autoimmune blistering skin or mucous membrane disease investigations, such as BP180 / 320 and Desmoglein 1 and 3 » autoimmune liver disease investigations, such as: ○ antimitochondrial antibody (AMA) ○ f-Actin ○ liver kidney microsome type 1 antibodies (anti-LKM-1) ○ smooth muscle (SM) ○ sp100 antibodies » complement profiles » cyclic citrullinated peptide (CCP) antibodies » double-stranded DNA (dsDNA) antibodies » extractable nuclear antigen (ENA) antibodies » full blood count (FBC) » HIV serology and viral load assays » immunoglobulins » inflammatory markers » myasthenia gravis and related syndrome investigations, such as: ○ AChR antibody test ○ anti-MuSK test ○ Sox1 ○ voltage-gated calcium channel (VGCC) antibodies » protein electrophoresis

	» rheumatoid factor (RF) » specific IgE testing, including use of recombinant allergens • Skin prick testing • Specialised imaging, including arteriography • Tissue biopsies, including immunofluorescence examination
IMPORTANT SPECIFIC ISSUES Basic Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management.	• Principles of immunisation in the immunocompromised host

KEY PRESENTATIONS AND CONDITIONS

Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations
- Diarrhoea
- Dysuria
- Fever without a focus

Conditions
- Bacteraemia
- Common skin infections, such as:
  - » cellulitis, and other streptococcal and staphylococcal skin manifestations
  - » fungal infections
  - » parasitic infections, such as head lice and scabies
- Epstein–Barr virus (EBV)
- Febrile neutropenia
- Infective endocarditis
- Line and prosthetic infections
- Lower respiratory tract infections, such as pneumonia
- Meningitis and encephalitis
- Ophthalmological infections, such as blepharitis, conjunctivitis, and orbital or periorbital cellulitis
- Septic arthritis
- Septicaemia and septic shock
- Upper respiratory tract infections, such as otitis media and tonsillitis
- Urinary tract infections

LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS

Basic Trainees will understand these presentations and conditions.

Basic Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.

Presentations
- Fever in the returning traveller
- Males presenting with acute testicular pain and swelling
- Patients presenting following recent sexual assault
- Vaginal discharge

Conditions
- Abscesses
- Emerging or less common infections, such as:
  - » cytomegalovirus (CMV)
  - » toxoplasmosis
- Genito-urinary conditions:
  - » anogenital ulcers
  - » epididymo-orchitis
  - » human papillomavirus – associated conditions, including anogenital warts
  - » pelvic inflammatory disease
  - » sexually transmitted infections (STIs)

For each presentation and condition, Basic Trainees will **know how to:**

Synthesise
- » recognise the clinical presentation
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- » take a relevant clinical history
- » conduct an appropriate examination
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Manage
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Consider other factors
- » identify individual and social factors and the impact of these on diagnosis and management

	» candidiasis » vaginosis • Hepatitis viruses • HIV • Infections in the immunocompromised host, such as those with diabetes mellitus, HIV, and those receiving immunosuppressive therapies • Infections in the returning traveller, such as dengue fever, malaria, and parasitic infections • Necrotising fasciitis • Osteomyelitis	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	• Antimicrobial resistance and strategies for management and prevention, including antimicrobial stewardship • Biology of common and important pathogens • High risk groups for the different categories of infectious diseases • Host response to infection • Modes and sites of transmission, incubation periods, symptoms, possible complications, and occupational hazards of the common infectious diseases, such as STIs • Occupational exposure-related infections • Pathophysiology of HIV, and the different groups and common side effects of anti-retroviral medications • Pharmacology of major antimicrobial (bacterial, fungal, and viral) medication classes used • Principles of infection control, including hand hygiene • Principles of innate and adaptive immune responses • Principles of passive and active immunisation • Principles underlying laboratory testing for infectious diseases • Role of immunisation in preventing infectious diseases, including for STIs	
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools. Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	Investigations • Basic imaging: » chest X-ray (CXR) » CT of the head » CT of the abdomen and pelvis » MRI » nuclear scans » ultrasound scan, including echocardiography for the evaluation of endocarditis » X-ray of bone and joints • Faecal parasite detection • Investigations for the common STIs, such as chlamydia, gonorrhoea, herpes, HIV, syphilis, and trichomoniasis, including culture, nucleic acid amplification tests (NAAT), and serology • Laboratory tests: » full blood count (FBC) » inflammatory markers » microbiology » serology » virology • Lumbar puncture • Malaria detection • Microbiology and culture of blood, broncho-alveolar lavage (BAL), cerebrospinal fluid (CSF), joint aspirate (synovial fluid), peritoneal fluid, pus, sputum, and urine	

	• *Mycobacterium tuberculosis* detection
	• Respiratory and gastrointestinal polymerase chain reactions (PCR)
	• Serologic testing for CMV, EBV, hepatitis viral infection, HIV, and syphilis
	• Skin biopsy
	• Viral load assessment for:
	  » CMV
	  » hepatitis viruses
	  » HIV
	
	Procedures
	• Common vaccine administration, including consent and delivery

IMPORTANT SPECIFIC ISSUES Basic Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management.	• Antibiotic use in patients with a history of antibiotic allergy, including anaphylaxis • Assessment for and provision of emergency contraception • Assessment of potential routes of infection, routes of transmission, and secondary sites of infection • Contact tracing and partner notification in STI management • Cultural beliefs of communities and the effect these have on the management of contact tracing • Global health impact and distribution of infectious diseases, including neglected tropical diseases • Infection control including hand hygiene, aseptic technique, and procedures for donning and doffing personal protective equipment (PPE) • Management of STIs in pregnant patients • Multidisciplinary approach to the management of complicated or chronic infections • Planning for isolation of patients with infectious diseases • Post-exposure prophylaxis in emergency situations • Principles of immunisation in the immunocompromised host • Principles of investigating infections, and initiating and monitoring treatment response in immunocompromised patients • Principles of investigating and treating prosthetic joint, artificial heart valve, pacemaker, and central line infections in normal and immunocompromised patients • Requirements for public health notification of infectious diseases, including local guidelines • Risks of needle-stick injuries and non-occupational exposure, including local guidelines, and post-exposure prophylaxis and follow up • Symptoms of syphilis that can mimic other conditions and how this can be considered in the differential diagnosis

KEY PRESENTATIONS AND CONDITIONS Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.	Conditions • Asthma • Diabetes mellitus • Epilepsy • Gestational diabetes • Gestational hypertension • Hyperemesis gravidarum • Infections, such as cytomegalovirus (CMV), Zika, HIV, hepatitis B and C, skin infections, and lower respiratory tract infections • Irritable bowel disease • Maternal obesity • Pre-eclampsia and eclampsia • Thyroid disorders in pregnancy • Urinary tract infection • Venous thromboembolism, such as pulmonary embolism	For each presentation and condition, Basic Trainees will **know how to:** **Synthesise** » recognise the clinical presentation » identify relevant epidemiology, pathophysiology, and clinical science » take a relevant clinical history » conduct an appropriate examination » establish a differential diagnosis » plan and arrange appropriate investigations » consider the impact of illness and disease on patients[1] and their quality of life **Manage** » provide evidence-based management *For less common or more complex presentations and conditions the trainee must also seek expert opinions* » prescribe therapies tailored to patients' needs and conditions » recognise potential complications of disease and its management, and initiate preventative strategies » involve multidisciplinary teams **Consider other factors** » identify individual and social factors and the impact of these on diagnosis and management
LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS Basic Trainees will understand these presentations and conditions. Basic Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.	Conditions • Amniotic fluid embolism • Cardiac complications of pregnancy, such as peripartum cardiomyopathy • Gestational liver disease • Psychiatric complications, such as postpartum depression and psychosis • Recurrent miscarriages	

EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	• Appropriate prescribing in pregnancy and lactation • Factors of high-risk pregnancy • Physiological changes of normal pregnancy • Physiological impact of pregnancy on pre-existing medical conditions
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools. Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	Investigations • Investigations for pre-eclampsia and eclampsia • Liver function test • Oral glucose tolerance test and polycose test • Thyroid function tests • Urine dipstick • Urine protein: creatinine ratio
IMPORTANT SPECIFIC ISSUES Basic Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management.	• Counselling women regarding healthy behaviour both before and during pregnancy • Optimising the management of pre-existing medical conditions prior to conception • Risks associated with various investigative procedures, particularly imaging, during pregnancy • Risk factors for common pregnancy-associated diseases: » diabetes » hypertension » thromboembolism

KEY PRESENTATIONS AND CONDITIONS

Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations

- Cancer related pain
- Dyspnoea
- Fluid and electrolyte disturbances
- Side effects of systemic cancer therapy, such as:
  - » diarrhoea
  - » mucositis
  - » nausea
  - » vomiting

Conditions

- Cancer:
  - » breast
  - » colorectal
  - » lung
  - » pancreatic
  - » prostate
  - » skin:
    - ○ basal cell carcinoma
    - ○ premalignant skin lesions
    - ○ squamous cell carcinoma
- Metastatic disease manifestations:
  - » cardiac tamponade or malignant pleural effusion and ascites
  - » cerebral metastases
  - » hypercalcaemia of malignancy
  - » spinal cord compression
  - » superior vena cava (SVC) obstruction
- Neutropenic sepsis
- Side effects of systemic cancer therapy, such as:
  - » alopecia
  - » bone marrow suppression
  - » cardiomyopathy
  - » drug induced interstitial lung disease
  - » peripheral neuropathy
- Thromboembolism
- Tumour lysis syndrome (TLS)

LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS

Basic Trainees will understand these presentations and conditions.

Conditions

- Cancer:
  - » carcinoma of unknown primary
  - » laryngeal
  - » melanoma
  - » mesothelioma
  - » mouth
  - » pharyngeal
- Cerebral neoplasms
- Endocrine syndromes associated with malignancy

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  For less common or more complex presentations and conditions the trainee must also seek expert opinions
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- » involve multidisciplinary teams

Consider other factors

- » identify individual and social factors and the impact of these on diagnosis and management

Basic Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.	• Hormone secreting tumours • Malignancies » genitourinary malignancies: ○ bladder ○ testicular » gynaecological malignancies: ○ cervical ○ ovarian ○ uterine » liver malignancy: ○ primary ○ secondary • Paraneoplastic syndromes
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	• Broad pharmacological principles and complications of chemotherapy, endocrine therapy, immunotherapy, molecularly targeted therapy, and radiotherapy • Concept of clinical trials • Indication and complications of bone marrow transplant • Processes of: » cell growth and ageing, cell injury, and apoptosis » immune evasion and immune surveillance » metastatic spread » molecular and cellular oncogenesis • Purpose and principles of cancer staging • Rationale, accuracy, benefits, and harms of screening tests
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools. Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	Investigations • Body fluid analysis, including cytology • Chest X-ray • CT of head, chest, abdomen, and pelvis • Endobronchial ultrasound • Faecal occult blood testing • Fine needle aspiration and excisional biopsy • Genetic testing, such as BRCA • Histopathology • Liver function tests • Mammography or breast ultrasound • MRI and PET scans • Nuclear bone scan • Papanicolaou test (Pap smear) • Pre-chemotherapy screening investigations • Tumour markers Procedures • Bronchoscopy • Endoscopy Clinical assessment tools • Assessment of performance status, such as ECOG performance status and Karnofsky performance status scale

IMPORTANT SPECIFIC ISSUES Basic Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management.	• End-of-life decision making • Immune toxicity • Oncology in different patient age groups, such as elderly and adolescent patients • Palliative care

KEY PRESENTATIONS AND CONDITIONS

Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations
- Acute oligo-anuria
- Fever in renal transplant recipients
- Oedema

Conditions
- Acid–base imbalance
- Acute and chronic glomerulonephritis, including:
  - » nephritic syndromes
  - » rapidly progressive glomerulonephritis
- Acute kidney injury, including acute tubular necrosis
- Chronic kidney disease (CKD)
- Diabetic nephropathy
- Drug-related nephrotoxicity
- Electrolyte abnormalities
  - » hypo- and hypercalcaemia
  - » hypo- and hyperkalaemia
  - » hypo- and hypernatraemia
- End-stage renal failure
  - » delaying progression of CKD
  - » initiating chronic dialysis
  - » modes of dialysis, haemodialysis and peritoneal dialysis
- Hypertension
- Nephrotic syndrome
- Urosepsis and pyelonephritis

LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS

Basic Trainees will understand these presentations and conditions.

Basic Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.

Conditions
- Chronic renal failure, including:
  - » anaemia
  - » complications of dialysis
  - » mineral and bone disorder
- Inherited and genetic renal disease, such as:
  - » Alport syndrome
  - » polycystic kidney disease
- Renal artery stenosis
- Renal calculus disease and obstructive uropathy
- Renal hypertension
- Renal manifestations of systemic and chronic disease
- Tubulo-interstitial kidney disorders

For each presentation and condition, Basic Trainees will **know how to:**

Synthesise
- » recognise the clinical presentation
- » identify relevant epidemiology, pathophysiology, and clinical science
- » take a relevant clinical history
- » conduct an appropriate examination
- » establish a differential diagnosis
- » plan and arrange appropriate investigations
- » consider the impact of illness and disease on patients[1] and their quality of life

Manage
- » provide evidence-based management
  For less common or more complex presentations and conditions the trainee must also seek expert opinions
- » prescribe therapies tailored to patients' needs and conditions
- » recognise potential complications of disease and its management, and initiate preventative strategies
- » involve multidisciplinary teams

Consider other factors
- » identify individual and social factors and the impact of these on diagnosis and management

EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	• Acid–base regulation and its link to the respiratory system • Measurement of renal function and estimation of glomerular filtration rate (eGFR) using creatinine clearance • Normal urine composition • Pharmacology of major drug classes used to treat kidney disease • Prescribing in kidney disease • Principles of renal replacement therapies: » haemodialysis and peritoneal dialysis » transplantation • Process of fluid and electrolyte status regulation • Process of hormonal regulation: » aldosterone and its link to the endocrine system » antidiuretic hormone (ADH) » renin-angiotensin system (RAS) • Renal disease and anaemia • Structure and function of the renal system and prostate
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools. Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	Investigations • Imaging: » functional renal scans » renal angiogram » renal tract ultrasound » urograms • Laboratory tests: » arterial blood gases (ABGs) » electrolytes » full blood count (FBC) » haematuria » proteinuria » renal function » urinalysis • Renal biopsy
IMPORTANT SPECIFIC ISSUES Basic Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management.	• Indications for acute and chronic dialysis • Referral for vascular access where appropriate • Renal transplantation issues: » immunosuppression, including drug interactions » importance of anticipating future need for dialysis or transplant in patients with progressive CKD » principles of assessment of potential donor transplant candidates and their understanding of the risks of transplantation » short and long-term complications, including management of BK virus nephropathy, diarrhoea, and neutropenia • Management of the patient with CKD in palliative care

KEY PRESENTATIONS AND CONDITIONS

Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations

- Gait and balance disturbances
- Headache and facial pain
- Hearing loss
- Memory disturbances
- Neuropathic pain
- Numbness or altered sensation
- Seizures:
  - » absence
  - » afebrile
  - » febrile
  - » focal
  - » generalised tonic–clonic
  - » myoclonic
  - » non-convulsive status epilepticus
  - » status epilepticus
- Syncope
- Visual disturbance or abnormal eye movement
- Weakness

Conditions

- Bell's palsy and other cranial nerve lesions, including trigeminal neuralgia
- Cerebellar disorders
- Cerebral neoplasia
- Dementia syndromes
- Epilepsy
- Gait disorders
- Guillain-Barré syndrome and chronic inflammatory demyelinating polyneuropathy (CIDP)
- Meningitis and encephalitis
- Migraine and common headache disorders
- Mononeuropathies, common
- Multiple sclerosis
- Neurological manifestations of systemic and chronic disease, such as paraneoplastic disorders
- Ophthalmological conditions:
  - » Horner syndrome
  - » nystagmus
  - » optic neuritis
  - » papilloedema
- Parkinson disease and related conditions, such as:
  - » corticobasal degeneration
  - » multiple systems atrophy
  - » progressive supranuclear palsy
- Peripheral neuropathy:
  - » acquired
  - » hereditary

For each presentation and condition, Basic Trainees will **know how to:**

Synthesise

- » recognise the clinical presentation
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- » conduct an appropriate examination
- » establish a differential diagnosis
- » plan and arrange appropriate investigations
- » consider the impact of illness and disease on patients[1] and their quality of life

Manage

- » provide evidence-based management
  For less common or more complex presentations and conditions the trainee must also seek expert opinions
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Consider other factors

- » identify individual and social factors and the impact of these on diagnosis and management

	• Spinal cord and nerve root compression • Stroke, haemorrhagic and ischaemic, and transient ischaemic attack (TIA): • Tremor • Vertigo	
LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS Basic Trainees will understand these presentations and conditions. Basic Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.	Conditions • Cerebral venous sinus thrombosis • Genetic neurological disorders, such as Huntington disease and myotonic dystrophy • Idiopathic intracranial hypertension • Limbic encephalitis • Motor neurone disease • Myasthenia gravis • Myopathy, acquired and genetic • Normal pressure hydrocephalus • Psychogenic neurological disorders • Unusual stroke syndrome	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	• Action of neurotransmitters and neurotransmission • Concept of 'brain death' • Electrical activity of the brain and nerve conduction • Embryology, anatomy, and neuroanatomy of the visual system • Indication for and application of thrombolysis • Metabolism of the brain • Neuroanatomy of the nervous system, including recognition of the functionality of different areas of the brain • Pharmacology of major neurological drugs • Physiology of vision and hearing • Sleep–wake regulation	
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools. Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	Investigations • Audiometry • CT and MRI brain imaging, including CT angiography and CT perfusion • Lumbar puncture and cerebrospinal fluid (CSF) analysis • Neurophysiological studies: » electroencephalography (EEG) » electromyography (EMG) » nerve conduction studies (NCS) Clinical assessment tools • Cognitive or brain functionality assessment • Extraocular movements • Fundoscopy • Vision testing, such as visual acuity and colour vision testing	
IMPORTANT SPECIFIC ISSUES	• Restrictions on driving following neurological illness, as identified by the statutory body	

Basic Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management.	• Safety considerations as a consequence of neurological disorders, such as epilepsy in relation to scuba diving

KEY PRESENTATIONS AND CONDITIONS Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.	Presentations • Constipation • Dyspnoea • Nausea • Pain • Tracheobronchial secretions • Vomiting Conditions • End-of-life phase • Terminal delirium • Terminal restlessness	For each presentation and condition, Basic Trainees will **know how to:** **Synthesise** » recognise the clinical presentation » identify relevant epidemiology, pathophysiology, and clinical science » take a relevant clinical history » conduct an appropriate examination » establish a differential diagnosis » plan and arrange appropriate investigations » consider the impact of illness and disease on patients[1] and their quality of life **Manage** » provide evidence-based management *For less common or more complex presentations and conditions the trainee must also seek expert opinions* » prescribe therapies tailored to patients' needs and conditions » recognise potential complications of disease and its management, and initiate preventative strategies » involve multidisciplinary teams **Consider other factors** » identify individual and social factors and the impact of these on diagnosis and management
LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS Basic Trainees will understand these presentations and conditions. Basic Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.	Presentations • Seizures Conditions • Bowel obstruction, malignant • Depression in patients nearing end of life	

EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	• Blood chemistry changes that occur during dying phase • Conversion calculations between opioids, including but not limited to: » fentanyl » morphine » oxycodone • Indications for use of corticosteroids in situations, such as: » bowel obstruction » cerebral oedema from metastatic disease » hypercalcaemia and bone pain » wellbeing and appetite stimulation • Opioid dose conversions from parenteral to oral or transdermal routes • Pathophysiology of pain: » neuropathic » nociceptive » non-nociceptive • Pharmacology of analgesics and other agents used to treat major symptom complexes • Symptoms and signs of opioid toxicity and opioid induced hyperalgesia
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools. Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	Procedures • Subcutaneous infusion pump (know how and when to prescribe) Clinical assessment tools • Tools to assess pain or distress in an unconscious or reduced level of consciousness in patients, such as the Abbey Pain Scale
IMPORTANT SPECIFIC ISSUES Basic Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management.	• Assessment of psychological, cultural and spiritual needs of the patients, families, and carers • Compassion towards those who can no longer be ‘cured’ • Cultural aspects related to death, dying, and handling of the deceased in different cultures and religions, such as Māori and Aboriginal and Torres Strait Islander peoples, Muslim people, Buddhist people, and Hindu people • Ethical principles involved in care of dying patients, particularly in relation to: » advanced care directives » advocacy » beneficence versus non-maleficence » organ donation • Importance and meaning of resuscitation orders • Importance of recognising disease trajectories and anticipating when patients are nearing end-of-life phase • Importance of respecting patients’ dignity at the end of their life • Importance of respecting the wishes of patients, families, and carers

	• Medicolegal aspects of end-of-life care: » consent » futility » proxy decision makers • Withdrawal of life-prolonging treatments, such as artificial nutrition and hydration, antibiotic treatment, or supplemental oxygen

KEY PRESENTATIONS AND CONDITIONS

Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations

- Coma
- Delirium (agitated or hypoactive)
- Seizures
- Associated with adverse drug interactions:
  - » acid–base and electrolyte disorders
  - » anaphylaxis
  - » arrhythmias
  - » constipation
  - » cutaneous reactions
  - » diarrhoea
  - » gastrointestinal bleeding
  - » hypo- and hyperglycaemia
  - » hypotension
  - » mental state changes
  - » movement disorders
  - » nausea
  - » renal impairment
  - » rhabdomyolysis
  - » vomiting

Conditions

- Acute and chronic effects, including overdose, from the use of:
  - » alcohol
  - » amphetamines
  - » benzodiazepines and Z-drugs
  - » cannabis
  - » cocaine
  - » ecstasy
  - » opioids
- Adverse drug reactions from:
  - » antiarrhythmics
  - » antibiotics
  - » anticonvulsants
  - » anticoagulants
  - » antidepressants
  - » chemotherapy
  - » non-steroidal anti-inflammatories
- Poisoning from:
  - » antidepressants
  - » antidiabetic medicines
  - » antihypertensives
  - » antipsychotics
  - » digoxin
  - » paracetamol
  - » sedatives
- Substance use disorder, including relapse prevention and acute withdrawal from:
  - » alcohol
  - » benzodiazepines and Z-drugs

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	» nicotine » opioids • Toxidromes: » anticholinergic » cholinergic » hallucinogenic » opioid » sedative-hypnotic » serotonin syndrome » sympathomimetic » withdrawal	
LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS Basic Trainees will understand these presentations and conditions. Basic Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.	Presentations • Unusual (idiosyncratic, Type B) adverse drug reactions, e.g. Stevens-Johnson Syndrome • Poisonings: » carbon monoxide » insect stings » pesticides » salicylates » snake bites » spider bites Conditions • Life-threatening adverse drug reactions causing: » cardiac arrhythmias, such as, tachy and brady arrhythmias or cardiac conduction blocks » cardiac failure » neutropaenia » QT prolongation » respiratory depression » seizures	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	• Accepted healthy alcohol intake according to sex, age, and pregnancy and lactation status • Categories of drug safety in pregnancy and their impact on prescribing • Common drug–drug interactions between prescription medications, non-prescription medications, and complementary therapies • Interpretation of the results of clinical trials involving medicines • Key neurotransmitters and their actions • Mechanism of action at the receptor and intracellular level, adverse effects, interactions, and pharmacokinetics of common types of: » analgesics » antiarrhythmics » antiasthmatics » anticoagulants » antidepressants » antidiabetics » antihypertensives » antimicrobials » antipsychotics » benzodiazepines » chemotherapeutics » diuretics » immunosuppressants	

	• Effect of liver failure, renal failure, critical illness, ageing and pregnancy on pharmacokinetics, and the need for dose adjustment in these circumstances • Empiric antimicrobial therapy with appropriate agent (considering antimicrobial spectrum) and dose, taking patient factors into consideration, such as age, history of adverse drug reactions, comorbid conditions and medications, and local or national guidelines • Medication adherence: » factors affecting adherence » strategies to improve adherence • Non-pharmacological alternatives to psychotropic medication • Pharmacotherapy in pain management and the safe prescribing of opioids • Principles of pharmacology and pharmacokinetics: » absorption » bioavailability » delivery techniques, such as oral, intravenous, transdermal » excretion » mechanisms of action » dose-response relationship » metabolism, including genetic factors and drug–drug interactions of cytochrome P450 enzymes • Substance use disorders: » definitions and epidemiology of substance use disorders, including prevalence and age of onset » principles of the neurobiology of addiction and tolerance » principles of addiction treatment including withdrawal management and relapse prevention » principles of harm reduction
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools. Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	Investigations • Liver function and impact on drug clearance • Renal function and impact on drug clearance • Specific electrocardiogram changes in drug toxicity Clinical assessment tools • Mental state examination • Pain scoring tools • Screening for substance misuse and conducting brief interventions to reduce harm from drug, alcohol, or cigarette use • Therapeutic drug monitoring, including: » indications for monitoring plasma concentrations, the importance of understanding the therapeutic range, and how to respond to concentrations outside that range » identification of adverse reactions » monitoring for common adverse drug reactions » monitoring of renal or hepatic function » specific drug concentrations and their interpretation, including digoxin, lithium, antibiotics, and anticonvulsants • Withdrawal scales for: » alcohol » opioids
IMPORTANT SPECIFIC ISSUES Basic Trainees will identify important	• Best practice for self-monitoring the effect of medicines prescribed for treating chronic disease, such as diabetes, hypertension, and respiratory disease • Ethics and consent processes associated with using therapies ‘off label’

specialty-specific issues and the impact of these on diagnosis and management.	• Indications and methods for use and interpretation of withdrawal scales for alcohol and opioids relevant to settings • Legislation regarding prescribing of controlled and restricted drugs • Medication safety: » antimicrobial stewardship » assessment of likelihood of an adverse drug reaction (including allergy), for example using of the Naranjo Scale » factors predisposing to polypharmacy including the 'therapeutic cascade' and the process for deprescribing » factors increasing risk of error: ○ dispensing ○ dose selection ○ medicine selection ○ transcription » prescribing in special populations, relating to age, pregnancy, renal impairment, liver failure, or critical illness » risk–benefit analysis for prescribing anticoagulants • Obtaining accurate medication history, including drug allergies and complementary and alternative medicines • Patient factors impacting on prescribing, such as adverse drug reactions, age, and pregnancy • Phases of drug development • Recognition that an adverse drug reaction may contribute to the differential diagnosis • Regulatory and funding frameworks in which medicines are made available

KEY PRESENTATIONS AND CONDITIONS

Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations
- Chest pain
- Cough, chronic with or without sputum
- Dyspnoea

Conditions
- Asthma
- Bronchiectasis
- Chronic obstructive pulmonary disease (COPD)
- Pleural effusion
- Pneumonia
- Primary malignancies of the lung and pleura
- Pulmonary embolism
- Respiratory failure:
  - » acute
  - » chronic
- Sleep disorders:
  - » insomnia
  - » sleep apnoea
  - » other sleep-disordered breathing

LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS

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Conditions
- Cystic fibrosis
- Interstitial lung disease
- Lung abscess
- Lung transplantation
- Pneumothorax:
  - » primary
  - » secondary
- Pulmonary hypertension:
  - » primary
  - » secondary
- Pulmonary and pleural metastases
- Pulmonary vasculitides
- Sleep disorders:
  - » insomnia and poor sleep habits
  - » REM sleep behavioural disorder
  - » restless legs syndrome and periodic limb movements of sleep
- Tuberculosis

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EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	• Anatomy of the lungs and airways • Effects of inflammation of the airways and associated diseases • Importance of ventilation / perfusion (V / Q) matching • Measurement of ventilation • Mechanisms for acid–base balance • Process of gas exchange
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools. Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	Investigations • Arterial blood gases • Basic pulmonary function tests, such as diffusing capacity for carbon monoxide (DLCO), flow-volume loops, lung volumes, and spirometry • Cardiopulmonary exercise tests • Diagnostic sleep studies • Endobronchial ultrasound (EBUS) procedures • Imaging, such as: » chest CT » chest ultrasound » chest X-ray (CXR) » CT pulmonary angiography (CTPA) » PET scan » V / Q scan • Pulse oximetry • Six minute walk test • Tissue biopsy, including biopsies of pleura, lung parenchyma, and lymph nodes Procedures • Bronchoscopy • Intercostal catheter insertion • Thoracentesis, with or without pleural ultrasound
IMPORTANT SPECIFIC ISSUES Basic Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management.	• Broader public health implications related to the investigation and management of respiratory infectious diseases, such as tuberculosis, Legionnaires disease, and pertussis • Effects of ageing on the respiratory system • Effects of common comorbid conditions, obesity, and metabolic syndrome on the respiratory system • Effects of environmental toxins, such as cigarettes and asbestos on the respiratory system • Effects of interactions between pulmonary and systemic circulation and cardiac function • Effects of pregnancy on the respiratory system • Effects of sleep-disordered breathing on the respiratory system and cardio-respiratory control • End-of-life care for patients with respiratory disease • Insomnia and good sleep habits • Role of non-invasive ventilation in respiratory disorders, including COPD, motor neurone disease, and obesity hypoventilation

KEY PRESENTATIONS AND CONDITIONS

Basic Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations
- Acute lower back pain
- Monoarthritis, acute
- Polyarthritis

Conditions
- Arthritis:
  - » crystal-associated, such as gout and pseudogout
  - » osteoarthritis, generalised and regional
  - » rheumatoid
  - » septic
- Fibromyalgia
- Musculoskeletal conditions, such as:
  - » rotator cuff tear
- Osteoporosis
- Polymyalgia rheumatica and giant cell arteritis
- Scleroderma, limited and diffuse
- Seronegative spondyloarthropathies, such as:
  - » ankylosing spondylitis
  - » enteropathic arthritis
  - » psoriatic arthritis
  - » reactive arthritis
- Sjögren syndrome
- Systemic lupus erythematosus

LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS

Basic Trainees will understand these presentations and conditions.

Basic Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.

Conditions
- Adult-onset Still disease (AOSD)
- Antiphospholipid syndrome
- Hereditary connective tissue disorders, such as:
  - » Ehlers–Danlos syndrome
  - » Marfan syndrome
  - » osteogenesis imperfecta
- IgG4-related disease
- Myopathies, such as:
  - » dermatomyositis
  - » drug-induced
  - » inflammatory
  - » metabolic
  - » polymyositis
- Neuropathic joint disease
- Periodic fever syndromes
- Sarcoidosis
- Tendinopathy
- Vasculitis, such as:
  - » antineutrophil cytoplasmic antibody (ANCA)-associated vasculitis
  - » immune complex vasculitis

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	» polyarteritis nodosa » Takayasu arteritis • Viral arthritis	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Basic Trainees will describe the principles of the foundational sciences.	• Epidemiology and pathophysiology of osteoarthritis, osteoporosis, gout, and rheumatoid arthritis • Extra-articular manifestations of rheumatic disease, such as: » constitutional symptoms » dermatological symptoms » inflammatory eye disease » internal organ manifestations • Joint inflammation pathophysiology • Normal joint structure and physiology • Principle actions of common immunosuppressive agents • Principles of innate and adaptive immune responses • Rheumatoid arthritis treatment options, such as: » biological drug treatments » common disease-modifying antirheumatic drugs (DMARDs) » indications and contraindications of prednisone • Signs of clinical inflammation and principles of monitoring disease activity in inflammatory rheumatic diseases	
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Basic Trainees will know the indications for, and how to interpret the results of these investigations, procedures, and clinical assessments tools. Basic Trainees will know how to explain the investigation, procedure, or clinical assessment tool to patients, families, and carers.	Investigations • Electromyography (EMG) and nerve conduction studies • Laboratory tests, such as: » ANCA » angiotensin converting enzyme (ACE) » anti-beta-2 glycoprotein antibody » anticardiolipin antibody » anticyclic citrullinated peptide antibody (anti-CCP) » anti-double stranded DNA (anti-dsDNA) » antinuclear antibody (ANA) » C3 and C4 » C-reactive protein » erythrocyte sedimentation rate » extractable nuclear antigen (ENA) » full blood count (FBC) » liver function tests » lupus anticoagulant » rheumatoid factor (RF) » urate » urea, electrolyte, and creatinine » urinalysis » viral arthritis serology • Muscle biopsy • Musculoskeletal radiology tests, such as: » CT » DXA » dual energy CT scans » MRI » nuclear medicine scans • Synovial fluid analysis • Ultrasound • X-ray: » hands » hips » knee joints » shoulders	

	» spine and sacroiliac joints Procedures • Synovial fluid aspiration of the knee
IMPORTANT SPECIFIC ISSUES Basic Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management.	• Cardiovascular morbidity associated with inflammatory rheumatic diseases • Cost and disease burden of musculoskeletal diseases • Effect of musculoskeletal disorders on mobility and independence • Principles of treating and monitoring infections in immunosuppressed patients

Glossary

AML	acute myeloid leukaemia
BRCA	breast cancer
CREST	calcinosis, Raynaud phenomenon, oesophageal dysmotility, sclerodactyly, and telangiectasia
CLL	chronic lymphocytic leukaemia
CPT2	carnitine palmitoyltransferase II
CT	computed tomography
DNA	deoxyribonucleic acid
DXA	dual energy X-ray absorption
ECOG	Eastern Cooperative Oncology Group
HIV	human immunodeficiency virus
MRA	magnetic resonance angiogram
MRCP	magnetic resonance cholangiopancreatography
MRI	magnetic resonance imaging
PET	positron emission tomography
REM	rapid eye movement
RNA	ribonucleic acid