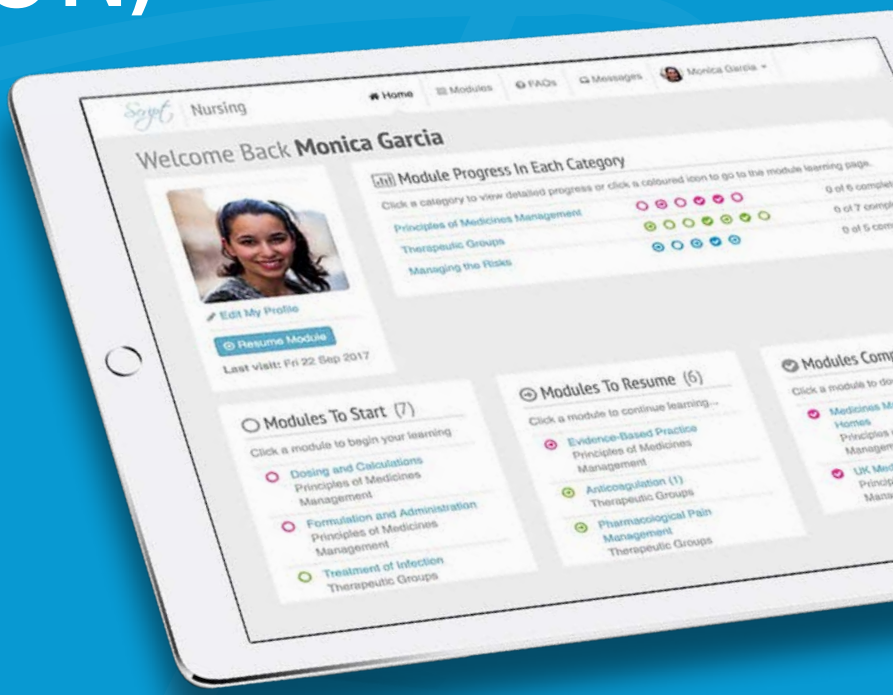
Script

MEDICINE AND SURGERY (FOUNDATION)

MODULES:

- The Principles of Prescribing
- Prescribing in Medical Emergencies
- Managing the Risks of Prescribing
- Prescribing in Special Circumstances
- Therapeutic Groups
- Clinical Governance
- Advanced Prescribing



https://www.safeprescriber.org

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The Principles of Prescribing

Module Title	Module Overview
Adherence and Concordance	• Understand medicines adherence and discuss the importance of informed choice and shared decision making in optimising the safe and effective use of medicines. • Define adherence and how this differs to compliance in relation to drug treatment. • Discuss the influences that affect patient adherence to medicines. • Describe interventions to actively support adherence to medicines and treatment regimens. • Discuss the implications of non-adherence to both the patient and the National Health Service (NHS).
Clinical Kinetics	• Know the different routes of drug administration. • Know how a change in route can influence pharmacokinetic parameters. • Define 'bioavailability', 'volume of distribution', 'half-life', and 'clearance', and the factors that can affect these. • Using graphical representation, discuss simple models of pharmacokinetics. • Discuss the main processes of drug metabolism in the body and the factors affecting it. • Relate the pharmacokinetics of a drug to the adjustments in dose, frequency and choice of formulation.
Dosing and Calculation	• Describe the different dose units and their equivalencies (e.g. milligrams and grams). • Demonstrate the different ways a dose may need to be calculated, including those based on Actual Body Weight (ABW), Ideal Body Weight (IBW) and Body Surface Area (BSA). • Understand the dose adjustments that may be required in hepatic or renal dysfunction. • Calculate complex dose regimens and intravenous infusions. • Understand the importance of a second-check when undertaking dose calculations. • Apply simple mathematics to day to day prescribing scenarios.
Formulation and Administration	• Describe how different formulations of a drug can differ in their pharmacokinetic properties and how this can affect dosing. • Understand which route or formulation should be prescribed to achieve an optimum therapeutic response and avoid harm. • Describe how formulation change can help patients take their medicines and appreciate the value of sharing decisions with the patient when choosing suitable formulations. • Understand how the timing of administration can be crucial for therapeutic response and safety. • Describe the factors that should be considered when prescribing and administering unlicensed medicines. • Describe the relevance of consent in relation to drug administration.
Clinical Pharmacology	• Define the following terms: agonist, antagonist, partial agonist, and allosteric modulator. • Define, and explain the differences between affinity, efficacy and potency. • Be able to understand and use graphical methods to relate dose and response. • Define up-regulation and down-regulation of receptors and using examples, explain how this can affect the response to drugs or alter physiological behaviour. • Define, using key examples, how drugs can act on different types of chemically sensitive sites, including: G-protein coupled receptors, ion channels, nuclear receptors, carrier molecules, and enzymes.

The Principles of Prescribing

Module Title	Module Overview
Prescribing and Therapeutics in Foundation Training	• Discuss the Foundation Programme Curriculum outcomes (i.e. 'foundation professional capabilities') and descriptors relating to safe prescribing. • Describe the key aspects of the General Medical Council's (GMC) guidance on 'Good practice in prescribing and managing medicines and devices'. • List the restrictions relating to the prescribing of medicines at Foundation level.
Prescribing in Infection	• Describe the different classes of antibacterials available and their site of action on a microorganism. • Describe how bacteria can be resistant to antibacterials. • Explain why certain antimicrobials might be restricted in a Trust, and how access to them could be obtained. • Know where to look for guidelines on treating infections and why adherence is important.
Prescription Documentation	At the end of this module, and with reference to 'The Ten Principles of Good Prescribing' (accessible via the British Pharmacological Society website: www.bps.ac.uk), you should be able to: • Describe the legal aspects of prescribing, including the prescribing of drugs subject to control under the Misuse of Drugs Act 1971. • List the different types of prescription documentation available in both primary and secondary care. • Explain unlicensed and off-label prescribing and the role of any applicable good practice guidelines. • Describe the standards expected of both hand-written and computer-generated prescriptions. • Discuss the importance of prescribing within the limits, knowledge, skills and experience of the prescriber.
Taking a Safe and Effective Drug History	• Describe the information needed to complete a safe and effective drug history. • Describe the different information sources available when obtaining or confirming a drug history, and their limitations. • Be able to overcome difficulties in eliciting a drug history. • Identify non-adherence and the impact this can have on the drug treatments prescribed. • Understand what is meant by Medicines Reconciliation, and their role and responsibility in this process. • Understand the importance of effective communication at the transfer of patient care.
Utilising the BNF(C)	• Describe the basic layout and structure of the BNF and BNFC. • Navigate the smartphone mobile app, online and printed book versions. • Describe the information contained within the General Guidance section. • Find and accurately interpret the dose, route, frequency and indication for a given medicine. • Find information on the licensed status of a medicine. • Find information about the different formulations available for a medicine, and identify excipients contained within these. • Find instructions on the administration of medicines given via intravenous infusions. • Describe the information available in the appendices and indices of the BNF and BNFC.

Prescribing in Medical Emergencies

Module Title	Module Overview
Cardiac Arrest	• Explain the steps involved in the management of an adult in cardiac arrest. • Recall the reversible causes of cardiac arrest. • Describe the modifications to practice when resuscitating a pregnant woman. • Manage the care of patients post-resuscitation.
COVID-19	• Define the Public Health England criteria for a possible inpatient case of COVID-19. • Discuss the symptoms of mild, moderate and severe disease. • Describe the patients who are at high-risk of moderate to severe infection. • Discuss the scores that can be used to inform ceiling of treatment decisions. • List the Personal Protective Equipment that must be worn for all patient contact in those with suspected or confirmed COVID-19, and describe in what order these should be donned and doffed. • List aerosol generating procedures, and discuss this in the context of administering cardiopulmonary resuscitation in a patient with suspected or confirmed COVID-19.
Diabetic Emergencies	• Manage hypoglycaemia in a conscious, semi- or unconscious patient. • Describe the characteristic features of Diabetic Ketoacidosis (DKA) and Hyperosmolar Hyperglycaemic State (HHS). • Describe the principles of treatment of DKA and initiate immediate treatment. • Identify and treat any precipitating factors for an episode of DKA. • Distinguish between DKA and Hyperosmolar Hyperglycaemic State (HHS). • Describe the principles of treatment of HHS and initiate immediate management. • Effectively monitor a patient with a diabetic emergency and know when to refer and/or seek specialist advice.
Drug Allergy and Anaphylaxis	• Take an accurate history of any previous reactions to drugs, medicinal and related products and non drug allergies. • Examine a drug chart, and decide which drugs might pose a risk to the patient in light of known allergies. • Recognise the signs and symptoms of allergic reactions to drugs. • Distinguish allergic reactions from other adverse drug reactions. • Manage acute allergic reactions to drugs. • Arrange appropriate follow up in cases of suspected drug reactions.

Prescribing in Medical Emergencies

Module Title	Module Overview
Fluids	• Describe the signs and symptoms of hypovolaemia and hypervolaemia. • Calculate fluid loss, gains and requirements. • Calculate electrolyte requirements. • Explain the difference between crystalloid and colloid fluid replacement therapy and when each might be appropriate for use. • Monitor fluid replacement therapy effectively to avoid adverse effects and achieve optimal response.
Poisoning	• Describe the risks associated with taking specific drugs in overdose. • Manage a patient presenting with poisoning. • Describe the role of the National Poisons Information Service (NPIS). • Describe the information available on TOXBASE and how to access this.
Sepsis in Hospital	• Discuss the spectrum of infection and continuum of sepsis. • Know where to find and how to use tools to help you to recognise the acutely ill patient with sepsis. • List situations where patients may not manifest the traditional signs and symptoms of sepsis. • Discuss the factors to consider when prescribing for the septic patient. • List the six elements of the Sepsis Six® Care bundle and the time frame in which these should be administered. • Discuss good antimicrobial stewardship relating to the management of sepsis. • Discuss the ongoing management of the patient with sepsis, including the importance of source control.

Managing the Risks of Prescribing

Module Title	Module Overview
Adverse Drug Reactions	• Define an ADR and the classification of ADRs. • Identify susceptibility factors that place patients at increased risk of ADRs. • Discuss the concepts of pharmacovigilance and its importance for public health. • Explain the role and function of the Yellow Card scheme. • Identify sources of information on ADRs.
Drug Interactions	• Demonstrate knowledge of potential drug-drug interactions (DDIs) mechanisms (pharmacodynamic and pharmacokinetic). • List patient factors that may intensify drug-drug interactions, related to age, gender, metabolising enzyme profile (sometimes related to ethnicity), disease, diet, smoking and illicit drug use. • Describe some of the common drug interactions seen in clinical practice and strategies for minimising their occurrence. • Know where to find information on potential drug interactions. • Highlight the importance of identifying and reporting 'suspected' drug interactions and Adverse Drug Reactions (ADRs) to the Medicines and Healthcare Products Regulatory Agency (MHRA).
Medication Errors	• Define medication errors, including subtypes. • Identify individual and systems factors leading to error. • Describe how medication errors are reported. • Describe the role and impact of electronic prescribing.
Monitoring Drug Therapy	• Understand why it is important to monitor drug therapy. • Identify the commonly prescribed drug therapies that require monitoring before, during and after treatment. • Understand the strategies for monitoring drug therapy, and the criteria that will determine whether such a strategies will be clinically accepted. • Identify common drugs that require Therapeutic Drug Monitoring (TDM) during treatment to avoid subtherapeutic plasma concentrations and toxicity.
Parenteral Poisons	• Describe the risks of drugs and how harm from the most dangerous drugs can be minimised. • Discuss the general methods used to limit harm from drugs. • Describe how the prescribing of dangerous drugs requires a concordant approach to therapy to avoid serious harm and adverse drug reactions. • Describe the role of policy and protocol in preventing serious untoward medication errors. • Discuss the importance of monitoring drug therapy.
Toxic Tablets	• Describe the risks of drugs and how harm from the most dangerous drugs can be minimised. • Discuss the general methods used to limit harm from drugs. • Describe how the prescribing of dangerous drugs requires a concordant approach to therapy to avoid serious harm and adverse drug reactions. • Describe the role of policy and protocol in preventing serious untoward medication errors. • Understand the importance of monitoring drug therapy.

Prescribing in Special Circumstances

Module Title	Module Overview
Dementia Friendly Prescribing	• Describe the common presentations and causes of dementia. • Describe how to assess a patient for suspected dementia, and know which investigations are relevant. • Identify which patients require referral to specialist services, and what these services will offer. • Describe rational treatment choices to slow the progression of dementia, including NICE guidance on when these treatments should be prescribed. • Choose suitable treatments for the behavioural and psychological symptoms of dementia (BPSD), including assessing the risk of the harm and benefit of antipsychotic use.
Paediatric Prescribing	• Explain how children and neonates handle drugs differently from adults and how this influences prescribing. • Calculate maintenance and rehydration fluid requirements for children of all weights and ages. • Prescribe safely for children, avoiding medication errors, communicating effectively and encouraging good adherence. • List some common medicines for children that are prescribed off-label or are unlicensed, and understand the legal position of this practice. • Be familiar with common prescribing scenarios in paediatrics, including pain relief.
Perioperative Prescribing	• Describe the elements of the drug history that are important for preoperative patients. • Examine a preoperative drug history, and decide which drugs to continue and/or omit. • Define the drug classes where alternative treatments are required perioperatively. • Explain the potential for adverse drug reactions (ADRs) and adverse drug-drug interactions in the perioperative period. • Describe the actions to be taken when a surgical patient is discharged with regards to prior chronic therapy and new take home medicines.
Prescribing in Breastfeeding	• Discuss the risks and benefits of prescribing in patients who are breastfeeding. Considering the gestational age of the infant and both infant and mother's comorbidities. • Describe the ways in which exposure to drug therapy via breast milk may be minimised. • List some drugs known to suppress lactation and describe how they may be used therapeutically. • Identify the sources of advice available to guide decision-making when prescribing for this group of patients.
Prescribing in Hepatic Dysfunction	• Describe the principles of safe prescribing in patients with hepatic dysfunction. • Explain the effect of disease in hepatic dysfunction when prescribing. • Discuss the important adverse effects of commonly prescribed drugs on the liver. • Describe the metabolism of drugs by the liver. • Describe the effect of some drugs on liver metabolism. • Rationalise drug treatments in hepatic dysfunction, and make dose adjustments where necessary. • Know where to access up-to-date and reliable information on the prescribing of drugs in hepatic dysfunction.

Prescribing in Special Circumstances

Module Title	Module Overview
Prescribing in Pregnancy	• Explain how the physiological changes during pregnancy can alter the pharmacokinetics of a drug, and therefore require dose adjustment. • Discuss the risks/benefits of prescribing in pregnancy and how this risk changes depending on the trimester. • Describe how to minimise the risk of harm to the fetus when prescribing in pregnancy. • Describe the key drugs (or drug groups) to avoid during pregnancy and why. • Describe how to minimise risks in women of child bearing potential. • Provide examples of drugs where concurrent contraceptive use is essential and why. • Identify the main sources of information to guide prescribing in pregnant women or women of child bearing potential.
Prescribing in Older Adults	• Explain the processes of absorption, distribution, metabolism and excretion of drugs in the older patient. • Describe how age-related physiological and pathological processes affect how the body reacts to drugs. • Describe how physical, cognitive and social aspects may affect an older patient's ability to adhere to treatment. • List the factors that make older adults more at risk of developing adverse drug reactions (ADRs). • Develop strategies to reduce problems with medication in the older population.
Prescribing in Renal Dysfunction	• Show how impaired renal function alters the pharmacokinetics of drugs. • Know how to assess renal function and the limitations of the available methods. • Know which drugs and agents can be nephrotoxic and how these can cause AKI. • Identify common drugs that need dose adjustment in kidney disease. • Demonstrate effective management of (a) intravenous fluid therapy (b) hyperkalaemia (c) antihypertensive therapy and (d) diuretics in kidney disease. • Know where to find information to guide prescribing in kidney disease.

Therapeutic Groups

Module Title	Module Overview
Anticoagulation Part 1	• Describe the basic pharmacology of Vitamin K Antagonists (VKAs). • Discuss the indications for treatment, the recommended dosing regimens and duration of treatment. • List the cautions and contraindications of treatment. • Discuss the importance of balancing the risk of harm with the benefits of treatment. • Discuss the potential complications of therapy. • Describe the monitoring requirements. • List the common drug-drug and drug-food interactions. • Counsel patients prescribed a VKA in order to support adherence and minimise the risk of harm. • Describe role of the anticoagulant clinic and the importance of communication at transitions of care.
Anticoagulation Part 2	• Describe the basic pharmacology of Direct Oral Anticoagulants (DOACs), unfractionated heparin and Low Molecular Weight Heparins (LMWHs). • Discuss the indications for treatment, the recommended dosing regimens and duration of treatment for each. • List the cautions and contraindications of therapy. • Discuss the potential complications of therapy. • Describe the monitoring requirements. • List some common drug-drug interactions. • Counsel patients prescribed a DOAC or a LMWH in order to support adherence and minimise the risk of harm.
Cannabis-Based Products for Medicinal Use	• Describe the basic pharmacology of cannabinoids. • Discuss the legislative changes that occurred in 2018. • List the potential therapeutic indications for CBPMs. • List the prescribing restrictions relating to CBPMs. • Discuss some of the key considerations for the prescribing and supply of a CBPM. • Describe the CBPMs that are available in the UK and their licensed status. • Know where to find reputable, reliable and up-to-date guidelines relating to the prescribing and supply of CBPMs.
Cardiac Arrhythmias	• Describe the common arrhythmias that are likely to present to secondary care. • Recall cardiovascular physiology relevant to arrhythmia management. • Recall the evidence-base for the management of common arrhythmias, and where best to find this evidence. • Describe the pharmacological agents used in the management of different arrhythmias and know their cautions and contraindications for use. • Describe how to reduce the risk of thromboembolic events in patients with AF and the importance of balancing this with the risk of bleeding.

Therapeutic Groups

Module Title	Module Overview
Diabetes	• Describe the onset and duration of action of different insulins available in the UK. • Discuss when a Variable Rate Intravenous Insulin Infusion (VRIII) is indicated. • Know how to set up a VRIII insulin regimen. • Know how to make the safe transition from intravenous insulin, to regular diabetes treatment. • Know the importance of self-management, and the points to consider when educating a patient on their treatment. • Know when to refer a patient to the specialist diabetes team.
Drugs of Misuse	• List both the psychological and physical signs and symptoms of dependence and withdrawal. • Describe the pharmacological mechanisms of dependence and withdrawal. • List common legal and illegal substances of abuse. • Discuss the impact of drug abuse on mental and physical health. • Discuss pharmacological interventions for the management of substance misuse. • Discuss non-pharmacological interventions for the management of substance misuse. • Refer the patient for appropriate support and follow-up.
Epilepsy	• Discuss the aims and objectives of drug treatment in the long-term management of epilepsy. • Discuss the factors governing the choice of AED treatment including the adverse effects associated with them. • Discuss the management options of epilepsy in women of child-bearing potential and during pregnancy. • Describe some of the common drug-drug interactions associated with AEDs. • Discuss the role of therapeutic drug monitoring (TDM) for AEDs. • Describe the pharmacological management of status epilepticus in secondary care, and the monitoring requirements following the administration of drug treatment.
Heart Failure	• With reference to national and international guidelines, discuss the underlying pathophysiology and pharmacological management of heart failure with reduced ejection fraction (HFrEF). • Discuss how a patient's pharmacological management can be optimised to achieve both symptomatic and prognostic benefits and how these treatments can be monitored to reduce the risk of adverse effects. • Describe the cautions and contraindications of treatment regimens in patients with comorbidities. • Discuss the increased potential for drug-drug interactions in this patient group, and recall some of the common interactions.
Infection in Secondary Care	• Select the most appropriate drug, dose, route and duration of treatment for commonly encountered infections in secondary care. • Describe which antibacterials are contraindicated in patients who are pregnant or breastfeeding, or who have hepatic or renal dysfunction. • Recall the common drug-drug interactions encountered when prescribing in infection. • Explain how and why to monitor and review treatment. • Describe where to look for information regarding the safe and effective management of infection, both locally and nationally.

Therapeutic Groups

Module Title	Module Overview
Introduction to Psychiatry	• Define the terms mental health, mental illness and mental health problems. • Describe the International Classification of Diseases (ICD) system used to assess for a psychiatric diagnosis. • List the different mental health services that are available. • Describe the interface between secondary care psychiatric services and primary and secondary care. • Discuss the underlying principles of the Mental Health Act (1983, amended 2007) and the Mental Capacity Act (including Deprivation of Liberties) (2005). • Explain the implications of the Mental Health Act (2007) and the Mental Capacity Act (including Deprivation of Liberty Safeguards) (2005) for prescribing and administration of medicines. • Describe the principles of managing acute behavioural disturbances and the use of rapid tranquillisation within this.
Management of Pain	• Describe how the WHO Pain ladder assists in rational prescribing of analgesic therapy for both acute and chronic pain. • Understand the risks associated with paracetamol and NSAIDs, and how these may be minimised. • Identify weak opioid analgesics and when they are appropriate for use. • Identify strong opioid analgesics, and how to minimise the risks when switching between different opioid analgesics and titrating doses to meet individual patient requirements. • Describe the indications and cautions of Patient Controlled Analgesia (PCA). • Recall the stepwise management of neuropathic pain, and understand when a referral to the specialist Pain team is necessary. • Describe the use of local anaesthetics in secondary care setting, and how to recognise and manage toxicity. • Identify patients with complex analgesic requirements where input may be required from specialist teams.
Psychiatric Symptom Management in General Hospital Settings	• Assess and treat depression in a person suffering from a chronic physical illness. • Understand the place in therapy, major adverse effects and interactions of key antidepressants. • Know what the available options are for the treatment of anxiety. • Know what the most effective interventions are for insomnia. • Describe the aims of Rapid Tranquilisation (RT) together with the various treatment options available. • Explain the risks of abrupt antidepressant withdrawal and benzodiazepine dependence. • Emphasise the importance of good adherence in preventing relapse, together with the need for physical health monitoring where appropriate in severe mental illness.
Respiratory Medicine	• Prescribe oxygen safely in both the acute and long-term settings. • Counsel patients about the options available for smoking cessation and prescribe appropriate nicotine replacement therapy. • Know the different devices available for delivering inhaled therapy, and be able to choose the most suitable device for the patient. • Manage both acute and chronic COPD and asthma. • Choose appropriate management strategies for patients with common respiratory infections.

Therapeutic Groups

Module Title	Module Overview
Rheumatology	• Understand how disease activity is measured and used to guide therapy. • List the commonly prescribed non-biologic and biologic disease modifying drugs and explain how these are monitored for both their beneficial and adverse effects. • Discuss the cautions and contraindications to treatments, including use during pregnancy and breastfeeding. • List the adverse effects of disease modifying drugs and be able to evaluate symptoms in a patient on unfamiliar drug treatments to determine potential problems. • Describe the principles of safe vaccination practice in patients on disease modifying drugs. • Describe important errors that can arise from methotrexate prescribing. • List the important extra-articular manifestations of rheumatoid arthritis and common clinical and radiological signs that suggest an extra-articular manifestation. • Discuss the purpose of effective shared care agreements and the requirements of practitioner should responsibility be shared.

Clinical Governance

Module Title	Module Overview
Rational Drug Choice	• Describe the need for evidence-based practice (EBP). • Explain how EBP can improve patient safety and outcomes. • Describe the principles of evidence-based medicine and levels of evidence. • Explain the difference between Relative Risk Reduction (RRR) and Absolute Risk Reduction (ARR). • Define and be able to calculate the Number Needed to Treat (NNT). • Determine if a trial is statistically significant, using P-values and confidence intervals. • Describe the principles of critical appraisal, and the tools required to review industry advertising critically. • Seek appropriate evidence and interpret it effectively to aid prescribing decisions. • Describe how evidence-based medicine is crucial in the development of healthcare policies, protocols and Trust formularies. • Describe the role of clinical audit and the stages involved.
Root Cause Analysis	• Discuss the importance of 'being open' when a patient safety incident occurs. • Discuss the tools used in the Root Cause Analysis (RCA) of incidents. • Explain how the tools for RCA help identify ways of improving patient safety.

Advanced Prescribing

Module Title	Module Overview
Prescribing at the Interface and Team Prescribing	• Explain the aims and objectives of Effective Shared Care Agreements and when and why they may be necessary. • Describe the role of the Independent Prescriber (IP) and how their role relates to that of a medical practitioner. • Describe the role of the Supplementary Prescriber (SP) and how their role relates to that of a medical practitioner. • Describe the function of Patient Group Directions (PGDs).
Palliative and End-of-Life Care	• Describe the principles of palliative care. • Discuss the importance of shared decision-making in providing palliative care to patients, taking into account the priorities of the individual and their close family. • Describe the principles of pain management in palliative care, including breakthrough pain. • Commence morphine for a patient in chronic pain and how to alter the dose safely. • Appreciate how a change in the route of administration can affect dose, and identify when dose conversion is necessary. • Understand when to give a drug by continuous subcutaneous infusion using a syringe driver. • Explain which drugs can be given by subcutaneous infusion using a syringe driver, and where to find information about compatibilities. • Describe the pharmacological options available to provide comfort and well-being for the symptomatic relief of nausea and vomiting, terminal restlessness and agitation, respiratory secretions, and breathlessness.
Managing Complications of Systemic Anticancer Therapy	• Describe the differences between the main groups of Systemic Anticancer Therapies (SACT). • Explain the aims of SACT - maintaining the balance between maximised effect and minimised risk. • Identify and formulate initial treatment plans for common oncological emergencies. • Identify adverse effects of SACT and formulate simple treatment plans to deal with these complications. • Know that only those practitioners who are identified on the local intrathecal register may be involved in any process surrounding the prescribing, supply and administration of intrathecal chemotherapy.