

Script

Nursing

An eLearning programme to improve the management and optimisation of medicines

A Guide for Qualified Nurse Practitioners
in the West Midlands



west midlands
ACADEMIC HEALTH SCIENCE NETWORK



Health Education England



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1.0 BACKGROUND

Medication is the most common intervention in clinical practice, costing the National Health Service (NHS) around £13 billion per year. There are many problems with medication use in practice, including: (1) 30%–50% of medicines are not taken as intended; (2) patients have insufficient information about their medicines, whilst there is an expectation that they should share in making decisions about their treatment; (3) medication errors and adverse drug events are relatively common across all sectors and age groups; and (4) avoidable wastage on medicines may exceed £150 million per year in the NHS.

Medication errors can be defined as “**a failure in the treatment process that leads to, or has the potential to lead to, harm to the patient**”¹. Medication administration errors are those that have specifically occurred during the administration process, where there is a failure to administer the right drug, at the right dose, at the right frequency, for the right patient. In the UK, medication errors account for 10%–20% of all adverse events in the NHS, and preventable harm from medicines is estimated to cost more than £750 million each year. A quarter of litigation claims in the NHS also stem from such errors.

Reducing medication errors and improving patient safety is at the heart of the West Midlands Academic Health Science Network (WM-AHSN) Drug Safety theme. In 2014, the **Drug Safety theme**, led by Professor Jamie Coleman, applied for funding to develop an eLearning programme for nurses. The overall aims of the proposed project were to:

- Create an eLearning platform for qualified nurses that can support their ongoing professional development and process of revalidation.
- Maintain and develop professional knowledge and competence of qualified nurses, related to medicines.
- Encourage safe and effective medicines management by developing modules that reflect current practice in the UK.

In 2014, the WM-AHSN commissioned the University of Birmingham and OCB Media Ltd, in collaboration with Coventry and Warwickshire NHS Partnership Trust to develop an eLearning programme for nurses. Based on the established successful SCRIPT programme for Foundation trainee doctors, Nursing SCRIPT has been developed in close collaboration with Health Education England (HEE).

¹Ferner RE, Aronson JK. Clarification of Terminology in Medication Errors: Definitions and Classification. *Drug Safety*. 2006;29(11):1011–22.

2.0 THE RESOURCE

The programme comprises 18 web-based eLearning modules relating to medicines management across three categories:

Principles of Medicines Management
Dosing and Calculations
Evidence-Based Practice
Formulation and Administration
Medicines Management in Care Homes
UK Medicines Policy
Utilising the BNF(C)

Managing the Risks
Adverse Drug Reactions
Drug Interactions
Medication Errors
Special Patient Groups
Sepsis

Therapeutic Groups
Anticoagulation (1)
Anticoagulation (2)
Treatment of Infection
Introduction to Pain Management
Pharmacological Pain Management
Respiratory Medicine
Advanced Pain Management

The learning outcomes for the modules are based on the Nursing and Midwifery Council's (NMC) Standards for Medicines Management². All modules have been authored by specialist healthcare professionals and have been externally peer reviewed to ensure accuracy and relevance to practice.

2.1 Structure of the modules

Each module has the same core components, commencing with a pre-test of 10 questions designed to allow you to determine your baseline knowledge on the subject area. You will be given a score out of 10 at the end of the test, but will not be provided with feedback at this stage. The learning starts with a brief session overview and recommendations for any reading that may facilitate progress through the module ('Pre-requisites') and learning outcomes.

The learning commences with a Case Vignette, which introduces some key concepts covered in the module content. In-module activities are included throughout the modules to embed learning.

At the end of the module, you will sit a post-test of the same 10 questions presented in the pre-test. These will be asked in a random order and as the resource develops, the post-test questions may be different for some modules. In order for the post-test to be activated you must have viewed all content in each module. Guidance on this is given in the 'Post-test' page in the Summary section of each module.

²Nursing and Midwifery Councils (NMC). Standards for Medicines Management. 2007; Available online at <https://www.nmc.org.uk/standards/additional-standards/standards-for-medicines-management/>

3.0 CONTINUING PROFESSIONAL DEVELOPMENT

The regulations governing the prescribing, administration and supply of medicines are subject to regular review. In addition, as new evidence emerges, guidance on the management of conditions and monitoring of pharmacological treatments changes. Keeping up-to-date with changes in prescribing and administration practice is essential for patient safety and to maintain high standards in the profession.

It is a legal requirement that qualified nurses undertake Continuing Professional Development (CPD) as part of their revalidation process. The Nursing and Midwifery Council (NMC) state that you must:

- "Undertake 35 hours of Continuing Professional Development (CPD) relevant to your scope of practice as a nurse or midwife in the three-year period since your registration was last renewed, or when you joined the register"
- "At least 20 hours must include participatory learning"
- "You must maintain accurate records of CPD you have undertaken"

3.1 Certification

Upon completion of the module, a certificate will be made available as a PDF stating:

- Your name
- The module title
- The learning outcomes of the module
- The date and time the certificate was generated

This can be used as evidence of CPD, and printed or uploaded to portfolios.

3.2 The pre/post-test score

The pre/post-test is intended to help you determine your baseline knowledge on the module subject and be a measure of knowledge acquisition. It also adds an element of interactivity.

The questions have not been reviewed by an examination board. As such, a pass mark has not been set and the post-test score is not generated onto the module certificate. However, progress through the modules may be monitored by your organisation, and consistent low scores throughout may call for modules to be re-set and for the test to be re-taken.

4.0 THE RESOURCE IN PRACTICE

4.1 Mandated modules

Some NHS Trusts, institutions or practices may choose to mandate specific SCRIPT modules. This will be communicated to you from local education leads, and not regionally from HEE or the AHSN. Should modules be mandated, the certificates provided at the end of the module can serve as evidence of module completion. SCRIPT also has a dedicated management site that can be accessed by named individuals to monitor the uptake of mandated modules. This function serves two purposes:

1. Institutions can ensure that you are taking steps to develop your medicines management knowledge
2. It can encourage discussion about medicines management in workplace education and during your appraisals

A designated person in your organisation will see the following information about your progress through the eLearning modules:

- When you have completed the modules (day of week and time of day)
- How long you spent on the learning
- Your pre- and post-test scores

Please note that your progress will only be monitored if modules have been mandated as part of your training.

4.2 Probity

Probity is at the heart of any healthcare profession. Probity means being honest and trustworthy and acting with integrity. The Nursing and Midwifery Councils Code for nurses and midwives states you must *“act with honesty and integrity at all times”*³.

Since the initial launch of SCRIPT in 2011, we have learned of dishonest behaviours to ‘work around’ the mandated modules. This includes fraudulently creating certificates for modules that have not been completed and completing multiple modules simultaneously by opening a number of tabs on the computer. These behaviours can now be identified from the management site, as can modules that are completed in less than 10 minutes (the average time to complete a module is 60 minutes). We would like to remind you of the standards set out by the NMC.

³Nursing and Midwifery Councils (NMC). The Code. 2015; Available online at <https://www.nmc.org.uk/standards/code/>

5.0 REGISTRATION

1. Go to www.safeprescriber.org
2. Register with the 'Nursing' programme.
3. During registration, you will be asked to provide the following information:
 - Name
 - Email address
 - Telephone number
 - Profession
 - Trust or CCG
 - Professional number (e.g. RCN number)
 - Password
4. When you have entered your details, you will need to agree to the terms and conditions.
5. You will receive an email confirming your registration. When this is complete, you can login and access all the modules.
6. When you have completed a module, a certificate will be made available.

Your registration information is not shared with a third party, and is maintained on a secure server.

6.0 FREQUENTLY ASKED QUESTIONS

6.1 Technical problems

What should I do if I have forgotten my password?

On the login page, click to indicate you have forgotten your password. Enter your email address and click submit. You will receive an email that contains a link to change your password.

What do I do if I have forgotten the email address I registered with?

Email us at info@safeprescriber.org or click 'Feedback' in the bottom right hand corner of the homepage. The technical team will respond accordingly.

6.2 Content queries and feedback

Who do I contact if I spot an error on the site?

Email us at info@safeprescriber.org or click 'Feedback' in the bottom right hand corner of the homepage. The editorial team will review your query and respond accordingly.

6.3 SCRIPT

How long do the modules take to complete?

Each module takes an average of 60 minutes to complete.

Is there a pass mark for the post-test?

The pre/post-test is intended to help you determine your baseline knowledge on the module subject, and be a measure of knowledge acquisition. It also adds an element of interactivity. The questions have not been reviewed by an examination board. As such, a pass mark has not been set and the post-test score is not generated onto the module certificate.

How do I get the module certificate?

A certificate is generated upon completion of all elements of the module. This includes the pre- and post-test.

What should I do with the certificates?

Once you have downloaded a certificate, it is important you save this. This may be used by your trainer to monitor your progress.

7.0 APPENDICES

APPENDIX 1: Module titles and learning outcomes

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Category	Principles of Medicines Management
Module Title	Learning Outcomes
Calculations	<p>By the end of this module, you should be able to:</p> <ul style="list-style-type: none"> List some common calculation errors and how these may occur. Describe the standards in place to reduce the risk of medication errors as a result of calculation errors. Access and use appropriate resources to assist your calculations. Convert units and measures. Discuss the various terms used to define a patient's weight, and calculate doses based on these parameters. Calculate doses to be administered for enteral and parenteral medicines. Calculate a percentage change in dose.
Evidence-Based Practice	<p>By the end of this module, you should be able to:</p> <ul style="list-style-type: none"> Describe the principles of Evidence-Based Practice (EBP). Describe how EBP is crucial in the development of healthcare policies, protocols and formularies. Know where to access reputable, reliable and up-to-date information. Analyse and appraise evidence. Describe the role of Area Prescribing Committees (APC) and the National Institute for Health and Care Excellence (NICE). Describe the role of the UK Medicines Information Service (UKMi) and how it can support healthcare professionals (and patients) with queries about medicines. Describe the role of clinical audit and the stages involved.
Medicines Management in Care Homes	<p>By the end of this module, and with reference to the NICE guidance on '<i>Managing Medicines in Care Homes</i>' (SC1), you should be able to:</p> <ul style="list-style-type: none"> List the six 'rights' of medicines administration. Discuss the practical options available to aid medicines administration and list their limitations. Describe the interventions that support adherence to treatment regimens. Discuss importance of monitoring, documenting and reporting adverse drug reactions. Discuss the importance of effective communication at the transfer of patient care. Define '<i>Medicines Reconciliation</i>' and know your role and responsibility within this process.

Category	Principles of Medicines Management
Module Title	Learning Outcomes
Formulation and Administration	<p>By the end of this module, you should be able to:</p> <p>Formulation</p> <ul style="list-style-type: none"> • Describe the role of excipients in medicines formulation and give examples of when they are cautioned or contraindicated in specific patient groups. • List the drugs that are recommended to be prescribed as brands, owing to changes in bioavailability between formulations. • Define unlicensed and off-label medicines and provide guidance on the administration of these. <p>Administration</p> <ul style="list-style-type: none"> • Discuss the process measures that should be taken to reduce the risk of administration errors (e.g. second checks). • Discuss the risks of preparing injectables in advance, considering both the stability of the medicine and risk of inadvertent administration to the wrong patient. • Describe some complications of drug administration and how they can be managed. • Discuss the practical aspects of administering medicines via enteral feeding tubes and the cautions and contraindications with regards the manipulation of medicines for this route. • List reputable evidence-based resources available to assist the preparation of medicines for parenteral administration or via enteral feeding tubes. • With reference to national statistics on omissions of medicines ('missed doses'), discuss the importance of timely administration and working with pharmacy to ensure availability of treatments to avoid patient harm. • With reference to specific drugs and formulations, discuss the importance of timely administration in relation to response and monitoring (e.g. nitrate free period, timing prior to therapeutic drug monitoring).

Category	Principles of Medicines Management
Module Title	Learning Outcomes
UK Medicines Policy	<p>By the end of this module, you should be able to:</p> <ul style="list-style-type: none"> • Describe the Nursing and Midwifery Council's (NMC) '<i>Standards for Medicines Management</i>'. • Describe the scope of the Human Medicines Regulations 2012, in relation to the: <ul style="list-style-type: none"> ○ Authority to prescribe, supply and administer medicines. ○ The use of medicines that are controlled by the Misuse of Drugs Regulations 2001. ○ Storage, supply and destruction of medicines. • Define what a 'Patient Specific Direction' (PSD) is and why local guidance in the form of a Medicines Policy informs the use of medicines in hospitals.
Utilising the BNF(C)	<p>By the end of this module, you should be able to:</p> <ul style="list-style-type: none"> • 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 <i>General Guidance</i> 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.

Category	Managing the Risks
Module Title	Learning Outcomes
Adverse Drug Reactions	<p>By the end of this module, you should be able to:</p> <ul style="list-style-type: none"> • Define an ADR and say how ADRs are classified. • Identify susceptibility factors that place patients at increased risk of ADRs. • Discuss the concept of pharmacovigilance and its importance for public health. • Explain the role and function of the Yellow Card scheme. • Name sources of information on ADRs.
Medication Errors	<p>By the end of this module, you should be able to:</p> <ul style="list-style-type: none"> • Define medication errors, including subtypes. • Identify individual and system factors that can lead to error. • List examples of medication errors from all stages of the medication process, and use these to draw attention to the standards required throughout the process to ensure patient safety. • Discuss the importance of local and national reporting systems as a means to improve patient safety, and their responsibilities should they identify an error. • Explain the role of the Medicines and Healthcare Products Regulatory Agency (MHRA) and NHS England in providing information on both the use of medication and how the risk of errors can be minimised. • Describe the role of clinical governance in the monitoring and continuous improvement of healthcare to safeguard high standards of care. • Discuss the potential benefits of electronic prescribing and barcode technology in reducing medication errors, and the potential pitfalls of such systems (e.g. use of work arounds to avoid decision support).

Category	Managing the Risks
Module Title	Learning Outcomes
Drug Interactions	<p>By the end of this module, you should be able to:</p> <ul style="list-style-type: none"> • Define pharmacodynamic and pharmacokinetic mechanisms of drug interactions. • List the patient factors that may increase the risk of a drug interaction occurring. • Describe some common drug interactions in clinical practice and strategies for minimising their risk of occurrence. • Access reputable information on the risk of a drug interactions occurring and the potential effects. • Report all suspected drug interactions for new medicines (black triangle drugs) and serious reactions for all medicines to the Medicines and Healthcare Products Regulatory Agency (MHRA) Yellow Card Scheme.
Special Patient Groups	<p>By the end of this module, you should be able to:</p> <ul style="list-style-type: none"> • Discuss how impaired kidney and liver function can alter the way the body handles medicines (i.e. the pharmacokinetics of the medicine). • List some common medicines that are toxic to the kidney and liver. • Identify common medicines that need dose adjustment or increased monitoring in kidney and liver dysfunction. • Describe the physiological changes that occur with age and how this can alter the way in which the body handles medicines. • Describe how drug exposure to the fetus can be minimised to reduce the risk of harm during pregnancy. • Describe the factors that should be considered when administering medicines to a breastfeeding mother. • Know where to find reputable, reliable and up-to-date information
Sepsis	<p>By the end of this session, you should be able to:</p> <ul style="list-style-type: none"> • 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 be considered when initiating treatment for the patient with sepsis. • 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.

Category	Therapeutic Groups
Module Title	Learning Outcomes
Anticoagulation Part 1	<p>By the end of this module, you should be able to:</p> <ul style="list-style-type: none"> • 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 potential complications of therapy. • Describe the monitoring requirements. • Describe the common drug-drug and drug-food interactions. • Counsel patients prescribed a VKA so to minimise the risk of harm and to support adherence. • Describe the role of the anticoagulant clinic and the importance of communication at the transfer of care. • Discuss the national recommended standards for prescribing, dispensing and administration of anticoagulant therapy.
Anticoagulation Part 2	<p>By the end of this module, you should be able to:</p> <ul style="list-style-type: none"> • 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 so to minimise the risk of harm and to support adherence.
Respiratory Medicine	<p>By the end of this module, you should be able to:</p> <ul style="list-style-type: none"> • Administer oxygen safely in both the acute and long-term settings. • Counsel patients about the options available for smoking cessation and suggest appropriate Nicotine Replacement Therapy (NRT). • Describe the different devices available for delivering inhaled therapy, and demonstrate correct inhaler technique. • Manage patients with both acute and chronic asthma, and Chronic Obstructive Pulmonary Disease (COPD).

Category	Therapeutic Groups
Module Title	Learning Outcomes
Treatment of Infection	<p>By the end of this module, you should be able to:</p> <p><i>Background knowledge and principles</i></p> <ul style="list-style-type: none"> • Describe the different types and classes of antibacterials available and their spectrum of cover. • Discuss the basic principles of safe and effective treatment in the management of infection (correct drug, dose, route and duration of therapy). • Define empirical treatment and when this is appropriate. • Discuss the importance of adhering to both local and national guidelines and raising issues with the prescriber when treatment is not in-line with these. • Discuss the common healthcare associated infections and the role and importance of risk assessments in reducing their incidence. • List the infections that are notifiable to Public Health England (PHE). <p><i>Administration and monitoring</i></p> <ul style="list-style-type: none"> • Discuss the importance of timely administration of antimicrobials (first dose and ongoing doses). • Discuss the use and duration of parenteral management. • Discuss the importance of timely and regular patient monitoring in identifying the deteriorating patient. • Discuss the importance of communication with microbiologists, specialist microbiology nurses/pharmacists, and if necessary, infectious disease specialists. <p><i>Antibacterial use</i></p> <ul style="list-style-type: none"> • Discuss the aims of the <i>European Antibiotic Awareness</i> day and its campaigns. • Discuss the key information that should be communicated to patients when self-administering antibacterials (completing the course, managing adverse effects).

Category	Therapeutic Groups
Module Title	Learning Outcomes
Introduction to Pain Management	<p>By the end of this module, you should be able to:</p> <ul style="list-style-type: none"> • Discuss how pain can be classified according to its underlying pathology, speed of onset and the way it responds to analgesic treatment. • Describe some of the models and frameworks available to assess and measure pain. • Discuss the importance of shared decision-making in pain management, taking into account the priorities of the patient and their relatives and/or carers. • Describe the non-pharmacological options available for the management of pain. • Describe the importance of effective communication in the management of pain.
Pharmacological Pain Management	<p>By the end of this module, you should be able to:</p> <ul style="list-style-type: none"> • Describe how the WHO Pain ladder assists in the pharmacological management of both acute and chronic pain. • Discuss the risks associated with paracetamol and Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), and how these may be minimised. • List the weak opioid analgesics available for prescribing in the UK, and when they are appropriate for use. • List strong opioid analgesics, and understand how they are initiated and titrated. • List the medicines recommended for the management of neuropathic pain, and how these are initiated. • Describe the signs and symptoms of toxicity associated with the administration of local anaesthetics.
Advanced Pain Management	<p>By the end of this module, you should be able to:</p> <ul style="list-style-type: none"> • Describe the strong opioid analgesics used in the management of advanced disease. • Identify patients with complex analgesic requirements where input may be required from specialist teams. • Discuss the medicines that can be administered by subcutaneous infusion using a syringe driver, and where to find information about compatibilities. • Describe the indications and cautions of Patient Controlled Analgesia (PCA).

