Script

Primary Care

An eLearning programme for effective
and appropriate prescribing practice

A Guide for Primary Care
Healthcare Professionals

NHS

Health Education England

CONTENTS

1.0 BACKGROUND

Medication is the most common intervention in clinical practice. In 2017, community prescriptions cost the National Health Service (NHS) in England alone £9.17 billion, with over 1 billion prescription items dispensed[1]. 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"**[2]. In primary care, an estimated 46.9 million potentially clinically significant medication errors occur per year with approximately 22 million due to prescribing[3]. Medication errors are a cause of avoidable adverse drug reactions which in turn, are estimated to cost the NHS £98.5 million per year[3].

In 2010, the General Medical Council (GMC) commissioned a study to investigate the prevalence and nature of prescribing and monitoring errors in general practice. The PRACtICE study[4], examined 6,048 unique prescription items for 1,777 patients and found that 1 in 20 items were associated with either a prescribing or monitoring error, affecting 1 in 8 patients. Although the majority of these errors were judged to be either of mild or moderate severity, 1 in 550 of all prescription items contained an error considered severe. Many of the errors identified could have been prevented with better training and educational support.

The SCRIPT eLearning programme originated for Foundation trainee doctors with 47 prescribing and therapeutics focussed modules. It was created in 2011 by a team of pharmacists and clinical pharmacologists working in both education and healthcare at the University of Birmingham, together with eLearning experts from OCB Media Ltd. Originally used by West Midlands trainees, this resource known as Medicine and Surgery SCRIPT, is now available to every Foundation trainee in England, Wales and Northern Ireland. Over time, the demand for similar eLearning for other healthcare professionals has led to expansion of the SCRIPT programme. Initially portfolios of modules were developed for those working in dentistry and nursing. Then, in 2014, the Health Education England (HEE) West Midlands team commissioned GP SCRIPT (later renamed Primary Care SCRIPT). Primary Care SCRIPT has been devised for GPs, GP trainees and other prescribing healthcare professionals working in primary care. During the COVID-19 pandemic, all of the SCRIPT eLearning programme's portfolios have been made available free of charge to all healthcare professionals working in the NHS.

SCRIPT eLearning programme objectives:

- Develop modules across a wide range of therapeutic areas to reflect practice, managing medicines in the NHS and cost-effective prescribing.

- Create an eLearning platform that healthcare professionals can access easily for just-in-time learning and revalidation.

- Provide a resource to support continuing professional development (CPD) and encourage reflective practice.

- Help maintain and develop professional knowledge and competence related to medicines.

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1. NHS Digital (2017) Prescription Cost Analysis, England. Available online: https://digital.nhs.uk/data-and-information/publications/statistical/prescription-cost-analysis/prescription-cost-analysis-england-2017
2. Ferner RE, Aronson JK. (2006). Clarification of Terminology in Medication Errors: Definitions and Classification. Drug Safety. 29(11):1011-22.
3. Elliott RA, Camacho E, Campbell F, et al. Prevalence and Economic Burden of Medication Errors in the NHS in England. Policy Research Unit in Economic Evaluation of Health and Care Interventions. Sheffield, United Kingdom: University of Sheffield and University of York; 2018.
4. Avery AJ, Ghaleb M, Barber N. et al. (2013). The prevalence and nature of prescribing and monitoring errors in English general practice: a retrospective case note review. British Journal of General Practice. 63(613): e543-e553. Available online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3722831/

2.0   THE RESOURCE

Primary Care SCRIPT comprises a number of online eLearning modules relating to prescribing and therapeutics across a range of subjects (listed below). All modules have been authored by specialist healthcare professionals and peer reviewed to ensure accuracy and relevance to practice.

Modules are divided into four categories:

Principles of Prescribing

Adherence and Concordance
Managing the Medicines Process*
Managing the Risks of Prescribing*
Prescribing in Infection
Prescription Documentation and Shared Care
The Prescribing Landscape*
Utilising the BNF(C)

Therapeutic Groups

Paediatric Dermatology
Pain Management and End-of-Life Care*
Rheumatology

Prescribing in Medical Emergencies

Acute Coronary Syndrome
Anaphylaxis
Asthma and Croup
Hypoglycaemia
Meningococcal Disease
Seizures
Sepsis in Primary Care

*Modules currently in development

Prescribing in Special Circumstances

Dementia Friendly Prescribing
Developmental Pharmacology in Paediatrics
Older Adults
Practical Prescribing in Paediatrics
Pregnancy and Breastfeeding
Prescribing in Renal and Hepatic Dysfunction

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. The pre-test will automatically load when you enter the module. 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. This is followed by a brief overview of the module, recommendations for any background pre-module reading ('pre-requisites') and a list of learning outcomes.

The learning generally starts with a case vignette, which introduces some of the key concepts covered in the module. You will then work through content pages interspersed with in-module activities to embed learning. At the end of the module, key points will be summarised and suggestions for further reading made. When all of the content has been viewed, a 10 question post-test is activated which automatically starts when you exit the module. The questions in the post-test will be the same or similar to those presented in the pre-test and asked in a random order. You will be provided with feedback for each question as you answer it and given a score out of 10 at the end of the test.

Each individual module is designed to take about 60 minutes in total to complete. For your convenience, modules can be completed in more than one sitting. You can exit a module part-way through and come back to it later. Your profile page will show your progress through the modules and allows you to rejoin a partially completed module where you left it.

2.2   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

You will be able to print the certificate or download it as proof of module completion. Once a module has been completed, the certificate will be available at any time from your user profile.

2.3   The pre/post-test score

The pre/post-tests are intended to help you determine your baseline knowledge on the module subject, and be a measure of knowledge acquisition. 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.

You can access information about your pre-test and post-test scores for all modules completed, at any time from your user profile.

3.0   TRAINING AND CONTINUING PROFESSIONAL DEVELOPMENT

3.1   Integration into training

Some regions or practices may choose to integrate SCRIPT modules into training. To do this they mandate specific modules for users, such as GP trainees. These modules will be determined locally, not by the SCRIPT team or Health Education England. 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, which can be accessed by named individuals to monitor the uptake of mandated modules. This function serves two purposes:

1. It can ensure that you are taking steps to develop your prescribing knowledge in postgraduate education

2. It can encourage discussion about prescribing during workplace education and in your appraisals

If modules are mandated, your trainer may have access to the following information about your progress:

- 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

Your progress will only be monitored if modules have been mandated as part of your training. Your trainer can re-set any mandatory modules if they think that you would benefit from working through the module again. Remember that they will have access to the data about how long you have spent on the learning and when you did it. The programme can identify completion of multiple modules simultaneously, fraudulent creation of module certificates and completion of modules in under 10 minutes. If you attempt to complete a module in under 10 minutes, the programme will not allow access to the post-test. Re-setting of modules is a local decision and one that your trainer should take in discussion with you. Should you wish to take the post-test again, modules can also be re-set by you from your user profile page.

3.2   Continuing professional development

All SCRIPT modules can be used as part of your commitment to continuing professional development (CPD). The content, case studies and activities included within the module are intended to prompt reflection on practice. Certificates provided at the end of the module can be downloaded to serve as evidence of module completion. Once completed, you may also want to re-visit modules at a later date to reflect on how your practice has changed as a result of completing the module. You can revisit modules as many times as you want from your profile page and should you wish to take a module's post-test again, you can re-set the module from your user profile page.

As the SCRIPT programme develops, we will be looking for opportunities to obtain official CPD accreditation for the modules. As and when this occurs, information about the accreditation will be added to the online environment.

4.0   REGISTRATION

To register for Primary Care SCRIPT:

1. Go to www.safeprescriber.org/

2. Scroll down the page and select 'Primary Care'

3. Select 'Sign up'

4. Primary Care SCRIPT is free to anyone with an NHS.uk or NHS.net email address. Select 'Sign up' again

5. During registration, you will be asked to provide the following information:

    i.   First Name
    ii.   Last Name
    iii.   Email address (it must be an NHS.uk or NHS.net email address to obtain free access)
    iv.   Telephone Number
    v.   Profession (you will be given options to choose from)
    vi.   Region (you will be given options to choose from)
    vii.   Password (must be more than eight characters)

6. Select 'Register' and you will be taken to your profile page.

From your profile page, you will be able to:

- Access all of the Primary Care SCRIPT modules
- Update your details
- Download certificates for completed modules
- Re-set completed modules to regain access to the pre/post-test
- Provide feedback to the SCRIPT team.

Terms and conditions and our privacy policy can be found online at www.safeprescriber.org/

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5.0 FREQUENTLY ASKED QUESTIONS

5.1 Technical problems

What do 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 top right hand corner of the homepage. The technical team will respond accordingly.

5.2 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 top right hand corner of the homepage. The editorial team will review your query and respond accordingly.

5.3 Access to other SCRIPT portfolios

Can I get access to other SCRIPT portfolios (e.g. Medicine and Surgery SCRIPT)?

Yes, all of the SCRIPT portfolios are currently available, free of charge, to anyone with a NHS.uk or NHS.net email address. Some of the modules will be similar across the different portfolios so we would suggest that you only register for the portfolio(s) most closely aligned with your area of practice. You can register separately for each portfolio at www.safeprescriber.org

How long do the modules take to complete?

Each module takes approximately 60 minutes to complete.

Is there a pass mark for the post-test?

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. Where modules are mandated, however, progress through the modules may be monitored by your trainers, and low scores may lead to a discussion with your trainer about re-setting the module for the test to be re-taken.

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. This certificate will always be available on your profile to download.

6.0 APPENDICES

APPENDIX 1: Module titles and learning outcomes

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Category	Principles of Prescribing
Module Title	**Learning Outcomes**
Adherence and Concordance	At the end of this module, you should be able to: • 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 your patients' adherence to medicines. • Describe the interventions you can make to actively support adherence to medicines and treatment regimens. • Discuss the implications of non-adherence to both your patient and the National Health Service (NHS).
Managing the Medicines Process*	At the end of this module, you should be able to: • Discuss the importance of monitoring for both the beneficial and adverse effects of treatment. • Identify strategies to reduce the risk of error in the repeat prescribing and monitoring process. • Describe the role of the Summary Care Record and outline its use in primary and secondary care. • Identify the difficulties of interface working and strategies to reduce risk. • Discuss ways in which patients can be encouraged to raise concerns with about their medicines.
Managing the Risks of Prescribing*	At the end of this module, you should be able to: • Explain how Adverse Drug Reactions (ADRs) are classified ('DoTs') to help predict response, and therefore manage risk. • Discuss the concept of pharmacovigilance and how this is performed in the UK. • Describe patient factors that can increase susceptibility to ADRs. • Describe some of the common drug interactions seen in general practice, and how to identify hazardous drug interactions in the British National Formulary. • Describe the process of diagnosis and management for drug allergy in adults and children. • Discuss the impact of polypharmacy on ADRs and drug interactions. • Identify practical ways to approach the burden of polypharmacy. • Describe how electronic prescribing systems can help manage the risks of prescribing.

*Module currently in development and learning outcomes subject to change

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Category	Principles of Prescribing
Module Title	**Learning Outcomes**
Prescribing in Infection	At the end of this module, you should be able to: • Describe the importance of appropriate immunisation and prophylaxis to prevent disease. • Recognise the notifiable diseases and know how to inform the Health Protection Agency (HPA). • Describe how bacteria can develop resistance to antimicrobials. • Consult reputable sources of information to guide the appropriate selection of an antimicrobial treatment regimen for a patient and the indication. • Recognise circumstances where antimicrobials may be appropriate for infection prevention or self-management strategies. • Discuss the common interactions between antimicrobials and other medicines. • Discuss alternative treatment options when a contraindication exists, such as an allergy or renal dysfunction. • Discuss the importance of monitoring and timely review of treatment. • Explain Antimicrobial Stewardship and how this should be reflected in your prescribing and subsequent monitoring.
Prescription Documentation and Shared Care	At the end of this module, you should be able to: • Identify the different types of prescription documentation available to all medical and non-medical prescribers in primary care and the importance of securely managing prescription forms. • Describe the legal requirements for prescription writing, to include those for drugs subject to control under the Misuse of Drugs Regulations. • Explain what is meant by unlicensed and off-label prescribing. • Outline the key principles of good prescribing practice. • Describe the aims and advantages of prescribing from formularies, protocols and guidelines. • Discuss the concept of shared care and the use of Shared Care Agreements (SCAs) with reference to the responsibilities of all parties involved. • Recognise different types of prescribers and the restrictions on what they can prescribe.
The Prescribing Landscape*	At the end of this module, you should be able to: • Understand NHS expenditure on medicines across different healthcare sectors, and how individual practice can be adapted to help manage these costs. • Outline the financial burden of medicines waste, contributing factors and how these can be managed. • Describe the role of Area Prescribing Committees, and how this role promotes cost-effective prescribing and fairer access to medicines. • Know when and why medicines should be prescribed generically or by brands, and the potential implications of substitution on treatment outcomes. • Identify how patient demographics and population can influence prescribing patterns. • Understand the costs of unlicensed and specials medicines, and how these may be managed.
Utilising the BNF(C)	At the end of this module, you should be able to: • 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.

*Module currently in development and learning outcomes subject to change

Category	Therapeutic Groups
Module Title	**Learning Outcomes**
Paediatric Dermatology	At the end of this module, you should be able to: • Initiate therapy for the management of atopic eczema and step treatment up and down according to response and as recommended by NICE guidance. • Select and prescribe appropriate topical treatments for psoriasis. • List the systemic treatments available for psoriasis and explain their use to patients and their families. • Select and prescribe topical therapy and antibacterials for acne vulgaris, and list the indications for isotretinoin use. • Differentiate between common skin infections and select appropriate treatment. • Recognise when disease severity may warrant referral for systemic therapy (e.g. with immunosuppressants). • Recognise which haemangiomas need referral for treatment, and the therapeutic options available. • Treat and manage common causes of hair loss. • Describe the management of skin erythemas in the newborn. • Recognsise drug reactions and discuss the early management of the most severe, including Stevens-Johnson Syndrome (SJS), Toxic Epidermal Necrolysis (TEN) and DRESS syndrome (Drug Reaction with Eosinophilia and Systemic Symptoms).
Pain Management and End of Life Care*	At the end of this module, you should be able to: • Using the WHO Pain Ladder, describe the step-wise management of pain. • Discuss the pharmacological treatment options available for neuropathic pain, and the step-wise management recommended by NICE. • Discuss the adverse effects of both non-opioid and opioid analgesics, and how the risks of harm can be minimised to benefit patient care and improve adherence. • Describe the principles of palliative and end-of-life care. • Convert oral opioid analgesics to other delivery systems. • Commence morphine for a patient in chronic pain and make safe and effective dose alterations. • 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. • Describe the management of palliative care emergencies.

*Module currently in development and learning outcomes subject to change

Category	Therapeutic Groups
Module Title	**Learning Outcomes**
Rheumatology	At the end of this module, you should be able to: • Explain 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. • Distinguish between different clinical scenarios to choose an appropriate corticosteroid dose. • 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 shared care agreements and the requirements of the practitioner should responsibility be shared. • Counsel a patient on the key issues relating to the diagnosis, management and monitoring of treatment.

Category	Prescribing in Special Circumstances	
Module Title	**Learning Outcomes**	
Dementia Friendly Prescribing	At the end of this module, you should be able to: • Describe the common presentations and causes of dementia. • Describe how to assess a patient for suspected dementia, including 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 National Institute for Health and Care Excellence (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 harm and likelihood of benefit from antipsychotic agents.	
Developmental Pharmacology in Paediatrics	At the end of this module, you should be able to: • Describe how children and neonates handle medicines differently from adults and how this will influence prescribing. • Explain how the processes of drug metabolism differ in neonates and children compared to adults. • Discuss why paediatric patients are at particular risk of drug-drug and drug-food interactions. • Describe which Adverse Drug Reactions (ADRs) should be reported in children and adolescents under the age of 18-years-old.	
Older Adults	At the end of this module, you should be able to: • Describe the processes of absorption, distribution, metabolism and excretion in the older patient. • Explain how age-related physiological and pathological processes affect how the body reacts to drugs. • Explain how physical, cognitive and social aspects may affect an older patient's ability to adhere to treatment. • Discuss the factors that make older adults more at risk of developing Adverse Drug Reactions (ADRs). • Develop strategies to reduce problems with medication in the elderly population.	
Practical Prescribing in Paediatrics	At the end of this module, you should be able to: • Discuss why children are more vulnerable to medication errors, and how to avoid them. • Demonstrate the different ways a dose may need to be calculated, including those based on age and body weight. • Calculate oral rehydration fluid requirements for children of all weights and ages. • Explain what is meant by unlicensed and off-label prescribing, and provide example of this in paediatrics. • Recognise that age appropriate medicines are not always readily available for children, and understand how this is managed in practice.	

Category	Prescribing in Special Circumstances
Module Title	**Learning Outcomes**
Pregnancy and Breastfeeding	At the end of this module, you should be able to: • Explain how the physiological changes during pregnancy can alter the pharmacokinetics of a drug, and the need for adjustment of dose regimens as a result. • Discuss the risks and benefits of prescribing in pregnancy and how this risk changes depending on the trimester. • Describe how to minimise the risk of harm to the foetus when prescribing in pregnancy. • Describe the key drugs (or drug groups) that should be avoided during pregnancy and why. • Describe how to minimise risk of complications 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. • Describe both 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 how fetal exposure to drug therapy via breast milk may be minimised. • List the drugs known to suppress lactation and describe how they may be used therapeutically. • Identify the sources of advice available to guide your decision-making when prescribing for this group of patients.
Prescribing in Renal and Hepatic Dysfunction	At the end of this module, you should be able to: • Identify common hepatotoxic drugs • Discuss the impact of cytochrome P450 interactions on prescribing. • List the common drugs may cause acute kidney injury. • Identify the common drugs that may need dose adjustment and/or increased monitoring in hepatic and renal dysfunction. • Locate reputable, evidence-based information to guide prescribing in patients with renal and hepatic dysfunction.

Category	Prescribing in Medical Emergencies
Module Title	**Learning Outcomes**
Acute Coronary Syndrome	At the end of this module, you should be able to: • Identify the steps to manage a presentation of Acute Coronary Syndrome (ACS). • Know the protocol for management of an adult cardiac arrest. • Know the reversible causes of cardiac arrest, and which long term prescriptions increase their risk. • Know the appropriate post-resuscitation care needed. • Know the modifications needed when performing resuscitation on pregnant women and children.
Anaphylaxis	At the end of this module, you should be able to: • List the signs and symptoms of anaphylaxis. • Distinguish allergic reactions from other adverse drug reactions. • Describe the stepwise pharmacological management of anaphylaxis in the general practice setting. • Counsel patients and their relatives/carers on the administration of adrenaline auto-injectors. • Arrange appropriate follow up for patients who have experienced anaphylaxis.
Asthma and croup	At the end of this module, you should be able to: • Determine the severity of an acute asthma exacerbation. • Describe the emergency treatment of a patient with an acute exacerbation of asthma. • Manage an acute exacerbation of asthma in different patient groups. • Recall the symptoms of croup and assess symptom severity. • Distinguish between episodes of croup that can be managed in primary care and those that require transfer to hospital. • Arrange appropriate follow-up for patients who have experienced and acute exacerbation of asthma or episode of croup.

Category	Prescribing in Medical Emergencies	
Module Title	**Learning Outcomes**	
Hypoglycaemia	At the end of this module, you should be able to: • Identify the steps to manage a presentation of Acute Coronary Syndrome (ACS). • Know the protocol for management of an adult cardiac arrest. • Know the reversible causes of cardiac arrest, and which long term prescriptions increase their risk. • Know the appropriate post-resuscitation care needed. • Know the modifications needed when performing resuscitation on pregnant women and children.	
Meningococcal Disease	At the end of this module, you should be able to: • List the signs and symptoms of anaphylaxis. • Distinguish allergic reactions from other adverse drug reactions. • Describe the stepwise pharmacological management of anaphylaxis in the general practice setting. • Counsel patients and their relatives/carers on the administration of adrenaline auto-injectors. • Arrange appropriate follow up for patients who have experienced anaphylaxis.	
Seizures	At the end of this module, you should be able to: • Describe the step-wise management of a patient developing a seizure and status epilepticus. • Describe the requirements of post-seizure management. • Identify some of the common drug-drug interactions in patients on antiepileptic medicines. • Discuss the role of therapeutic drug monitoring (TDM) for antiepileptic drug (AED) treatment.	
Sepsis in Primary Care	At the end of this module, you should be able to: • Discuss the spectrum of infection and continuum of sepsis. • Identify the groups of people that are more susceptible to sepsis. • Recognise the signs and use evidence-based, reputable action tools for the correct patient group, to stratify the risk of sepsis. • Discuss the immediate management of a patient with 'suspected sepsis' in primary care. • Discuss the pathway of care for patients with moderate to high-risk suspected sepsis. • Recognise the importance of prompt referral and clear communication of 'suspected sepsis' to emergency care. • Recognise the six elements of the Sepsis Six® Care bundle and the timeframe in which these should be administered (usually in secondary care settings). • Identify the support resources available for sepsis survivors. • Understand the importance and role of sepsis aware communities.	