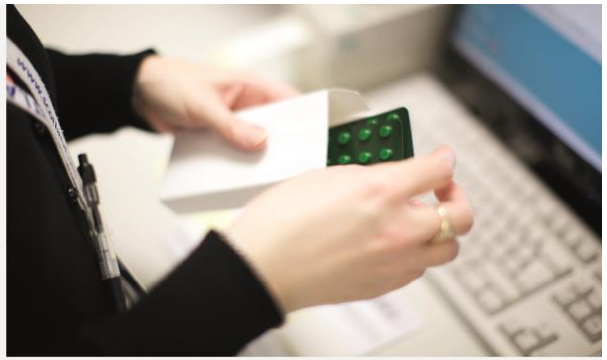
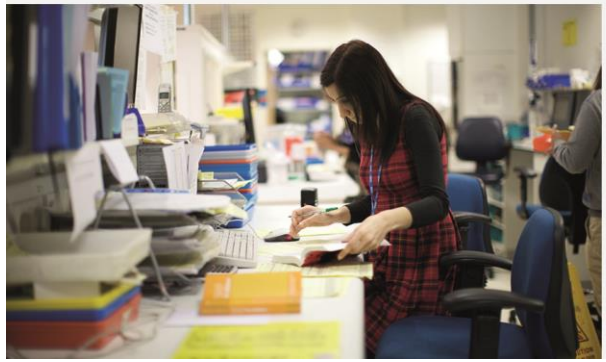
NHS
Health Education England

Antimicrobial resistance
A training resources guide

We work with partners to plan, recruit, educate and train the health workforce.

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Purpose of this guide

As part of our work (HEE 2016) we stated we would "explore developing a guide to learning materials for antimicrobial resistance and infection, that signposts prescribers and other staff to available educational sessions that will help support learning in the system".

The purpose of this guide is to promote available learning on the management of infective states, infection prevention and control, antimicrobial resistance and antimicrobial stewardship by:

1. Signposting educational materials available to health workers and students.

2. Providing a centralised resource portal to educators on supporting learners.

3. Supporting commissioning, regulatory and quality improvement teams (including infection prevention and control and antimicrobial management teams) by highlighting available educational resources to improve practice.

4. Encouraging learners to access available learning sessions to support their learning needs.

5. Highlighting learning sessions that can be embedded within clinical training pathways.

Online learning solutions to combat antimicrobial resistance and enhance stewardship have a positive role in supporting workforce education (Reyna et al. 2013 & Rocha-Pereira et al. 2013). A wide variety of e-learning sessions are freely available to all healthcare workers on the e-Learning for Healthcare (eLfH) platform[1] around infection prevention and control antimicrobial resistance, antimicrobial stewardship, and the management of specific infections. Free learning sessions have also been developed by a number of professional societies and royal colleges and have been included within this guide.

The sessions in this guide have been arranged by clinical topic rather than professional groups or care settings as all health professionals working in a variety of settings may find these sessions useful for their own practice and development. Some sessions may be targeted at specific groups or healthcare settings, however anybody from any professional background or healthcare setting can access these learning sessions to aid improvement in knowledge and support their professional development.

Each learning session is directly hyperlinked to its individual web address. However, if problems are encountered accessing these directly then users may wish to search for these learning session from the main webpage for individual websites for example eLfH.

[1] Using a pre-approved email domain i.e. nhs.uk; nhs.net; doctors.org.uk; doctors.net; hscni.net; dh.gsi.gov.uk; gov.im; mod.uk; nice.org.uk; ac.uk; gov.uk; phe.gov.uk; care.com; alliance.co.uk or by meeting the NICE criteria for access to OpenAthens (that covers charities and private organisations that deliver NHS commissioned care, primary care, prison healthcare services, social care, healthcare students and researchers etc.).

Introduction

The education of health workers on the appropriate use of antimicrobials and containment of antimicrobial resistance is critically important in view of the threats posed by antimicrobial resistance to the future of modern medicine (CMO 2013).

The Health and Social Care Act 2008 code of practice on the prevention and control of infections and related guidance (DH 2015) states that providers should ensure that:

- there is ongoing education for existing staff (including support staff, volunteers, agency/locum staff and staff employed by contractors), which should incorporate the principles and practice of prevention and control of infection;
- all prescribers receive induction and training in prudent antimicrobial use and are familiar with the antimicrobial resistance and stewardship competencies.

National recommendations state that there should be mandatory core training in prudent antibiotic use for doctors, pharmacists and nurses. In addition to undertaking introductory sessions in this area as part of induction programmes, it is recommended that this is repeated every three years, with particular emphasis on those antibiotics that provoke *Clostridium difficile* infection (CDI) (PHE & DH 2008; PHE 2011).

Background

Antimicrobial resistance is a global public health issue driven by the overuse of antimicrobials and inappropriate prescribing. The increase in resistance is making antimicrobial agents less effective and contributing to infections that are hard to treat (PHE 2013).

Improving professional education to improve clinical practice and promote wider understanding of the need for more sustainable use of antibiotics, is a key area for action as part of the UK Government's five year strategy for tackling antimicrobial resistance (DH 2013). The government aims to halve the number of healthcare associated Gram-negative bloodstream infections by 2020 and halve inappropriate antibiotic prescribing by the same date, with the aim of being a world leader in reducing antibiotic prescribing by 2020 (DH 2016).

Plans are therefore underway to improve training and information sharing so that NHS staff can learn from the best in cutting infection rates (DH 2016a). System wide engagement and action will be needed to reduce the threat posed by antimicrobial resistance, and the workforce needs to be adequately equipped to help tackle this threat.

Role of education

Antimicrobials are prescribed for a wide number of infective states, by a wide variety of clinical prescribers that includes both medical and non-medical. Antimicrobial resistance awareness and stewardship is therefore needed for a myriad of professionals, clinical situations, specialties and settings. All health workers responsible for prescribing, supply and administration, have an important role to play too in supporting the appropriate and judicious use of antimicrobials.

Cochrane has shown that interventions to reduce excessive antibiotic prescribing to hospital inpatients can reduce antimicrobial resistance or hospital-acquired infections, and interventions to increase effective prescribing including educational interventions can improve clinical outcomes (Davey et al. 2013). Education constitutes one element of a multitude of interventions to support safe and optimal outcomes for patients, and to reduce the emergence and spread of antimicrobial resistant organisms. Targeted multifaceted interventions can result in successful outcomes (NICE 2015 & GP online 2015), for example through the development of expert-led guidelines, prescribing policies, pathways, educational sessions and reference materials (for both physicians and patients), that showed a 6% improvement of guideline compliance in patients with pneumonia (PHE 2015).

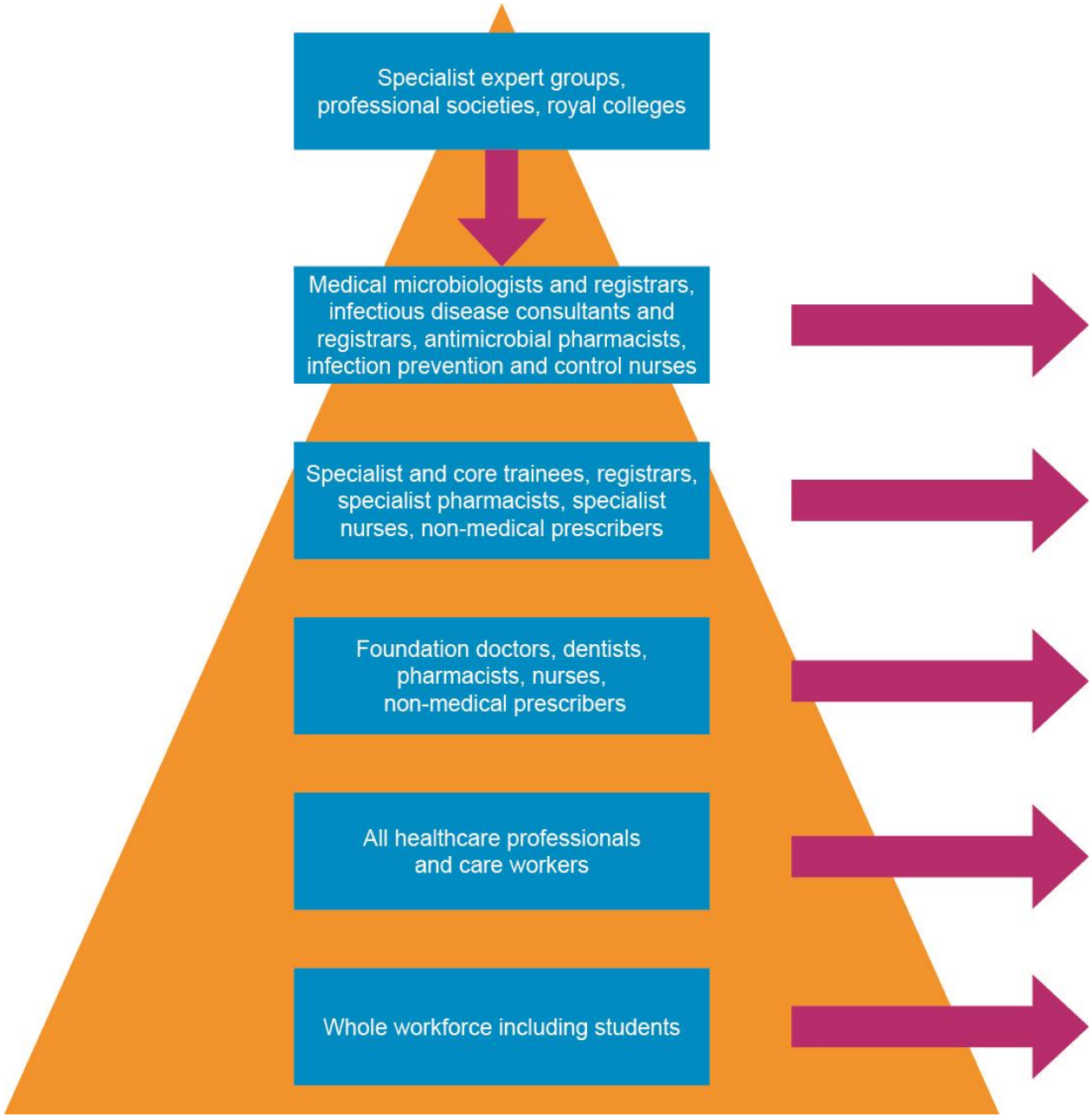
Evidence-based antimicrobial prescribing guidelines are perceived as necessary by prescribers, though the need for guidelines that are tailored for individual clinical situations has also been highlighted (PHE 2011). Supporting this with implementation and quality improvement interventions are also important and sustained with education (Elias C et al. 2017). One study has found that a high proportion of junior doctors prescribed antimicrobials without senior supervision, even during their first year of training post-qualification. A proportion of them self-reported low confidence in their ability to complete this task due to lack of knowledge. However they also suggest that they learn better through self-education and reading policies (Gharbi et al 2016). Linking available learning sessions within local antibiotic policies may therefore help support workforce education.

The content of education should be adapted to each health profession (Nathwani and Sneddon 2013) and include:

- basic knowledge of infection management;
- basic microbiology;
- importance of prudent prescribing in tackling antimicrobial resistance;
- best practices for prescribing to support safe and effective prescribing, administration and monitoring of antimicrobial therapy;
- non antimicrobial use of antibiotics;
- non-human health uses of antimicrobials.

The poor coverage of antimicrobial resistance and antimicrobial stewardship across postgraduate clinical training curricula has been highlighted too (Rawson et al. 2016). Linking individual clinical training curricula with available learning sessions on

management of infections may help enhance learning on the management of infective states, infection prevention and control, antimicrobial resistance and antimicrobial stewardship.



Specialist training and curricula

BSAC antimicrobial stewardship MOOC

Specialist training and curricula

Learning sessions on infective states

Principles of antibiotic use e-learning

Prudent use of antibiotics (part 1, part 2, part 3) e-learning

Mandatory infection prevention and control training (level 1 & level 2)

AMR introductory e-learning module session

Mandatory infection prevention and control training (level 1)

AMR introductory e-learning module session

Supporting organisations

Academy of Medical Royal Colleges
Allied Health Professions Federation Association for Nutrition
Allied Health Professions Federation
Association of Directors of Public Health
Association of Respiratory Nurse Specialists
British Association for Sexual Health and HIV
British Association of Dermatologists
British Association of Urological Surgeons
British Dental Association
British Infection Association
British Pharmacological Society
British Society for Antimicrobial Chemotherapy
British Society of Gastroenterology
Care Quality Commission
Centre for Pharmaceutical Postgraduate Education
College of Paramedics
Department of Health and Social Care
Faculty of General Dental Practice (UK)
Faculty of Dental Surgery
Faculty of Sexual and Reproductive Healthcare
Healthcare Improvement Scotland
Healthcare Infection Society
Infection Prevention Society
Joint Royal Colleges of Physicians Training Board
Microbiology Society
NHS Improvement
NHS RightCare
Public Health England
Public Health Wales
Royal College of Anaesthetists
Royal College of General Practitioners
Royal College of Pathologists
Royal College of Physicians
Royal College of Paediatrics and Child Health
The Royal College of Radiologists
Royal Pharmaceutical Society
Royal Society of Medicine
Scottish Antimicrobial Prescribing Group
The Society of Chiropodists and Podiatrists/The College of Podiatry
The Society and College of Radiographers
Skills for Health
United Kingdom Clinical Pharmacy Association
UK Sepsis Trust

Antimicrobial resistance, prescribing and stewardship

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Reducing Antimicrobial Resistance: An Introduction	This session discusses key facts about antimicrobial resistance and describes the important role everyone working in a health and care environment has in tackling it. It also discusses relevant aspects of the antimicrobial prescribing and stewardship competences.	- Discuss why there is such a concern about misuse of antibiotics and antimicrobial resistance. - List the key risks for development of antimicrobial resistance. - Identify your role in tackling antimicrobial resistance.
Principles of Antibiotic Use	This session discusses the definition, classification and mechanism of action of commonly used antibiotics. The principles of antibiotic use in a variety of clinical situations will be covered and the problem of antimicrobial resistance to antibiotics will also be discussed.	- Define antibiotics. - Describe how antibiotics may be classified according to their chemical group and mechanism of action. - Explain how to make a rational choice of antibiotic based on its spectrum of antimicrobial activity. - Describe the significance of resistance to antibiotics. Appreciate the problem of nosocomial infection, illustrated by Clostridium difficile infection. - Describe the importance of seeking expert advice from a microbiologist. - Describe non-antibiotic aspects of infection prevention and control.
Antimicrobial Agents	This session contains a series of short revision tutorials using multiple choice questions to assist candidates preparing for the Primary FRCA Examination.	- Define the classification of bacteria. - Describe the mechanism of action of antibacterials. - Be familiar with the major groups of antibacterials and the differences between them. - Describe which antibacterial would be chosen to treat typical infections.
Antimicrobial agents MCQs	This session will present you with a series of 10 MCQ questions	

Session	Description	Learning Outcomes
Antibiotic Policies	This session discusses the incidence, mechanisms and implications of antimicrobial resistance in hospital practice. Using this as the background, we will discuss the role played by appropriate antimicrobial prescribing and administration in reducing the spread of resistance. We will also look at the implications of Clostridium difficile infection, and review current best practice on endocarditis prophylaxis, along with approaches to empirical antimicrobial therapy.	- Describe the incidence and importance of antimicrobial resistance in hospital practice and the factors contributing to it. - Discuss the aetiology, diagnosis and therapy of *Clostridium difficile* associated diarrhoea. - Classify the use of antimicrobial agents based on the therapeutic aims. - Classify surgical procedures according to their risk of microbial contamination. - Discuss the appropriate use of perioperative (surgical) antibiotic prophylaxis. - Define the role of antibiotic policies in optimizing antibiotic therapy episodes and describe an appropriate empirical antibiotic approach to common infections.
Prudent Use of Antibiotics (Part 1)	This session promotes rational use of antibiotics in optimising treatment of patients with infections and reducing emergence of antibiotic resistance. It also highlights factors affecting the route of administration and duration of therapy. Monitoring of antibiotic serum drug levels will be explained.	- List the principles of rational, safe and effective use of anti-infective drugs. - Select the most appropriate route of administration of antibiotics. - Apply basic pharmacokinetic principles to monitoring of gentamicin and vancomycin serum drug levels.
Prudent Use of Antibiotics (Part 2)	This session promotes rational use of antibiotics in optimising treatment of patients with infections and reducing emergence of antibiotic resistance. Risks associated with antimicrobial use in patients who may have penicillin allergy will be explained.	- Recognise which antibiotics are contraindicated in patients known to be allergic to penicillin. - Take an accurate allergy history from a patient. - Identify antibiotics contraindicated in patients with penicillin allergy.
Prudent Use of Antibiotics (Part 3)	This session promotes rational use of antibiotics in optimising treatment of patients with infections and reducing emergence of antibiotic resistance. The risks of developing *Clostridium difficile* will be explained.	- Identify how to diagnose, treat and control *Clostridium difficile* infection
Antimicrobial Prophylaxis	This session defines surgical site infections (SSIs) and explains the principles of antibiotic prophylaxis,	- Describe the aim of surgical antibiotic prophylaxis. - Recognise the benefits and risks for surgical antibiotic prophylaxis.

Session	Description	Learning Outcomes
	including risks and benefits. It outlines alternatives available for those patients with penicillin allergy.	- Identify when and how to administer surgical antibiotic prophylaxis. - Explain which factors influence the choice of surgical antibiotic prophylaxis.
Post-operative Antibiotic Prescribing	This session defines, classifies, describes the consequences and outlines the principles of treatment of surgical site infections (SSIs). The principles of choosing which antibiotics to use for SSIs, the duration, route of administration and what to do in the event of treatment failure are additionally addressed.	- Describe the sequelae of surgical site infections. - Explain principles of empirical regimens based upon likely pathogen in antimicrobial therapy. - Identify principles for use of alternative antibiotics for antimicrobial therapy in case of penicillin allergy. - Identify principles of targeted antimicrobial therapy according to culture results. - Describe principles of duration and route of administration of antimicrobial therapy.

Two short introductory films about the risks associated with overusing antibiotics:

1) The first film, a guide for GPs on antimicrobial resistance, supports a range of educational materials for GPs and other primary-care prescribers called the TARGET toolkit.

2) A short informative but simple animation that can be used by GPs and other health professionals when speaking with patients about the risks of antibiotic resistance and misuse. The creation of the animation was influenced by the work of the Wellcome Trust in understanding how the public responds to information about antimicrobial resistance.

Additional material: HEE Prescriber Training Report.

Treat Antibiotics Responsibly, Guidance, Education, Tools (TARGET) – PHE and RCGP

Session	Objectives/Learning outcomes
TARGET Antibiotic Resistance in Primary Care online course	- Identify the need for optimised antibiotic prescribing, as well as providing tools for improving antibiotic prescribing. - Evidence showing the link between prescribing and resistance rates in GP patients is explored and useful resources to use in your surgery are included.

Session	Objectives/Learning outcomes
STAR: Stemming the Tide of Antibiotic Resistance	- This course focuses on two related topics: antibiotic resistance (and its link with practice prescribing) and secondly, practical techniques for improving consultations for common infections. The aim is to: - reinforcing the importance of resistance as a public health issue, - present evidence of the link between prescribing and resistance, - consider their current practice, - improve communication with patients about antibiotics, in order to reduce unnecessary prescribing of antibiotics and instigate behaviour change, - encourage reflection about the potential of communication styles to enhance confidence to succeed.
TARGET Group Presentation	- This presentation through clinical cases aims to provide up to date evidence to primary care clinicians about why optimising antibiotic prescribing is important and how this can be achieved. - The presentation lasts 60 minutes and includes slide notes and references. It can also be modified. It may be given by GPs, microbiologists or medicine managers with an interest in antibiotic use; It can be used by less experienced presenters or within a GP practice. - Presentation template and workshop self-assessment and evaluation form
Introductory case studies webinar	- Knowledge about, and the intention to use, information websites about antibiotic prescribing and resistance: Fingertips, PrescQIPP, Open prescribing. - Knowledge, ability, and interest to use data to explore their own antibiotic prescribing behaviour. - Understanding of the value of Read coding for symptoms and infections to facilitate antibiotic based audits in their clinical setting. - Intention to undertake an infection or antibiotic based audit in their clinical setting. - Ability to use data to discuss antibiotic prescribing with colleagues and improve the practice approach to management of infections. - Understanding of the importance of antibiotic guidance to help develop a more consistent practice approach to diagnosis and management of infections.
Assessing the need for antibiotics webinar	- Awareness of the need for antibiotic stewardship. - Awareness of the effect of their antibiotic prescribing in influencing antibiotic resistance in their clinical setting. - Knowledge about the effect of antibiotics on symptoms and complications in respiratory tract Infections in their clinical setting. - Knowledge of, and ability to use, the scoring systems to help improve antibiotic prescribing in acute sore throat. - Intention to undertake a sore throat audit in their clinical setting.
Managing patient expectations webinar	- Understanding that many patients do not want an antibiotic, even though some might expect to be prescribed one. - Understanding of the importance of eliciting patient's concerns, expectations, and whether they want an antibiotic.

Session	Objectives/Learning outcomes
	- Understanding that most patients consulting with infections want a good assessment, reassurance, and information about their illness, including how long it is likely to last. - Intention to share their assessment, and the benefits and risks of antibiotics with patients. - Belief in the value of sharing information with patients. - Intention to share written information about usual illness duration, self-care, safety-netting and the value, or not, of antibiotics in acute respiratory tract infections. - Intention to reflect on their communication strategies for infection and use the TARGET antibiotic leaflets.
Back-up prescriptions webinar	- Knowledge of the medicalisation effect of antibiotics when used for acute uncomplicated infections. - Understanding that back-up / delayed antibiotic prescriptions have similar patient outcomes to immediate antibiotic use for acute uncomplicated respiratory infections. - Understanding of the effectiveness of back-up /delayed prescriptions for improving antibiotic use for infections. - Understanding of how back-up /delayed prescriptions can reduce re-consultations in the following month. - Intention to use back-up / delayed prescriptions in their clinical setting. - Intention to use printed materials like the “TARGET Treating Your Infection leaflet” to support them in prescribing back-up antibiotics.
Common practice approach webinar	- Understanding that a whole team approach can increase the effectiveness of antimicrobial stewardship strategies. - Intention to involve the whole team in optimising antibiotic prescribing in their clinical setting. - Intention to make optimising antimicrobial prescribing a priority in their clinical setting. - Intention to make antimicrobial guidance available to all members of staff, including locums. - Intention to identify an antibiotic champion from their team. - Intention to undertake an antibiotic or infection related audit in their clinical setting. - Intention to develop an antibiotic action plan within their clinical setting. - Intention to share advice about self-care of infections with patients. - Intention to share leaflets (such as the TARGET patient leaflets) about length of illness, self-care, safety netting, and value of antibiotics with patients.

Additional material: TARGET Antibiotics Toolkit

British Society of Antimicrobial Chemotherapy (BSAC)

Session	Objectives/Learning outcomes
Antimicrobial Stewardship:	- Antibiotic Resistance and its global impact - The relationship between antibiotic resistance and prescribing

Session	Objectives/Learning outcomes
Managing Antibiotic Resistance MOOC	- What antimicrobial stewardship is and how it can be implemented in a hospital setting - Why measurement is important in stewardship: how it can improve antibiotic prescribing - How novel diagnostics can help in clinical decision making for antibiotic prescribing - An understanding of the value of Behaviour Change Science to improve antibiotic prescribing - Examples of successful antibiotic stewardship from across the globe
Challenges in Antibiotic Resistance: Point Prevalence Surveys (PPS) MOOC	- Demonstrate an understanding of the importance of measuring antimicrobial consumption. - Demonstrate an understanding of how PPS work within the context of antimicrobial stewardship programmes. - Evaluate the data to collect and why. - Assess the training needed to undertake a PPS. - Identify the human resources required to undertake a PPS. - Demonstrate an understanding of data capture, analysis and presentation. - Evaluate the limitations of PPS. - Apply learning to drive improvements in antibiotic prescribing.
Challenges in Antibiotic Resistance: Gram Negative Bacteria MOOC	- The microbiology of Gram Negative Bacteria to enable diagnosis of infections. - The identification and classification of clinical infections associated with common Gram Negative Bacteria - The occurrence of resistance - epidemiology and basic mechanisms of resistance, locally and globally. - The key objectives and principles of treatment, including negative consequences. - The appropriateness of treatment agents. - The burden and impact of GNB infections on health and economic outcomes.

Additional material: Antimicrobial Stewardship: From Principles to Practice (eBook) & The Antimicrobial Resource Centre (ARC)

The Royal Pharmaceutical Society (RPS) and the United Kingdom Clinical Pharmacy Association (UKCPA)

Session	Objectives/Learning outcomes
RPS & UKCPA Back to Basics	The aim of this webinar is to provide an introduction to basic bacteriology & the principles for the use of commonly used antibiotics and will: - describe the four principal groups of pathogenic bacteria, - identify the bacteria groups likely to be associated with different sites of infection, - outline the spectrum of activity of the major antibiotic classes, - recommend appropriate antibiotic combinations to cover common infections.

Session	Objectives/Learning outcomes
RPS & UKCPA Antimicrobial stewardship for the non-specialist	The aim of this webinar is to provide an overview of antimicrobial stewardship, its importance in tackling healthcare associated infection and how pharmacists can contribute and will: - increase awareness of why antimicrobial resistance and HAI are currently a priority within healthcare, - why effective antimicrobial stewardship programmes are required, - describe the role of an antimicrobial pharmacist, - show how all pharmacists can contribute to antimicrobial stewardship within their own area of practice.
Antimicrobials and new local guidelines	The aim of this webinar is to engage with as many pharmacists as possible in the Surrey health economy so that there is a good understanding of the new antimicrobial guidelines. Delegates will learn about the guidelines and how they can help these to be implemented in practice.

Additional material: The AMS Portal and AMS Policy

Centre for Pharmacy Postgraduate Education (CPPE)

Session	Objectives/Learning outcomes
Antibacterial resistance - a global threat to public health: the role of the pharmacy team distance learning	- Explain why antimicrobial resistance is considered to be one of the greatest public health risks in the UK and globally. - Apply the principles of antimicrobial stewardship to your everyday practice, through the use of one of the national toolkits. - Advise prescribers on the appropriate and inappropriate use of antibacterial therapy and optimise prescribing practice. - Support public awareness campaigns on avoiding the use of antibacterials. - Design learning materials for your team and your customers on avoiding antibacterial resistance. - Develop a protocol to support the introduction of infection control to your workplace.
Reducing antimicrobial resistance e-learning	- Discuss why there is such a concern about misuse of antibiotics and antimicrobial resistance. - List the key risks for development of antimicrobial resistance. - Identify your role in tackling antimicrobial resistance.
Antibacterials - theLearningpharmacy.com e-learning	- Develop and run an effective health promotion campaign in your pharmacy. - Provide advice and signposting on self-care and public health. - Explain how to deal effectively with patient queries about long term conditions or medicines. - Support a person presenting with a new prescription.

Session	Objectives/Learning outcomes
	- Describe how to advise appropriately a patient requesting an OTC medicine. - Identify and meet the professional development needs of the pharmacy team. - Explain how you would work in partnership with other healthcare professionals to support patients.
Antimicrobial stewardship: focus on optimising antimicrobial prescribing	- Apply relevant local and national guidance on antimicrobial stewardship to your own area of practice. - Engage with and support the multidisciplinary team to optimise prescribing of antimicrobials. - Discuss how you will apply your learning to improve your practice and use this to contribute to your continuing professional development and revalidation.

Additional material: AMR gateway and EAAD learning campaign

NHS Education for Scotland (NES)

Session	Description	Learning Outcomes
Antimicrobial Stewardship Workbook	The resource will be beneficial to nurses and midwives who have a role in the administration, prescribing or education of antimicrobial therapy.	- Demonstrate an understanding of the contents and their implications for your practice. - Deliver – accept the role and identify opportunities for regular practice. - Discuss with colleagues current and expected antimicrobial stewardship practice in your clinical area. - Identify good practice and promote the sharing of this good practice. - Seek further opportunities to develop knowledge and skills in antimicrobial practice.

Other resources

'Interventions to improve antimicrobial prescribing of doctors in training: A realist review' – Report and Animation.

Public Health England: Antimicrobial prescribing and stewardship competencies

Antibiotic Guardian (includes examples of shared learning)

Antibiotic Review Kit (ARK) Programme Study.

Antibiotic-Action ‘True Life Stories: From Patients to Doctors’.

Antibiotic Awareness Resources (quizzes and crosswords, posters and leaflets, secondary care prescriber's checklist).

Antimicrobial resistance (AMR): applying All Our Health

BSAC workshops

Health matters: preventing infections and reducing antimicrobial resistance

European Antibiotic Awareness Day Resources (primary care and secondary care).

University of Manchester Antibiotic Resistance Minute Lecture

Knowlex Events

WHO ‘World Antibiotic Awareness Week’ materials

WHO Course ‘Antimicrobial Stewardship: A competency-based approach’

WHO: Competency framework for health workers’ education and training on antimicrobial resistance

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Infection prevention and control

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Infection Prevention and Control: Level 1	This session is for all staff including contractors, unpaid and voluntary. It has been designed to meet the relevant learning outcomes in the UK Core Skills Training Framework. The package is made up of 3 elements; a Presentation, a Workbook and an Assessment. The presentation covers the key points relating to the subject, while the workbook is more in-depth, providing further detail. You can choose to do any or all of the 3 elements dependent on your personal preference, learning style and existing knowledge. To complete the package you will need to pass the Assessment.	- How you can contribute to infection prevention and control. - Local policies and procedures for infection prevention and control. - Your responsibility to infection prevention and control and standard precautions, including: • Hand Hygiene • Personal Protective Equipment (PPE) • Management of Blood and Body Fluid Spillage • Management of Occupational Exposure including Sharps • Management of the Environment • Management of Care Equipment - How to recognise and act when your personal health and fitness may pose a risk of infection to others at work.
Infection Prevention and Control: Level 2	This session is for all healthcare staff groups involved in direct patient care or services. It has been designed to meet the relevant learning outcomes in the UK Core Skills Training Framework. The package is made up of 3 elements; a Presentation, a Workbook and an Assessment. The Presentation covers the key points and the Workbook is more in-depth, providing further detail relevant to the subject.	- Be able to describe the healthcare organisation's and their own responsibilities in terms of current infection prevention and control legislation. - Know how to obtain information about infection prevention and control within the organisation. - Understand what is meant by the term healthcare associated infections. - Understand the chain of infection and how this informs infection prevention and control practice. - Demonstrate an understanding of the routes of transmission of micro-organisms. - Understand individual roles and responsibilities for the three levels of decontamination. - Use single use items appropriately.

Session	Description	Learning Outcomes
		- Be able to conduct a risk assessment in respect of ensuring infection prevention and control. - Explain different alert organisms and conditions that pose an infection risk. - Describe how to safely manage patients with specific alert organisms.
Routes of Transmission of Infectious Disease	This session explores the different mechanisms of transmission that occur with different types of infectious diseases.	- Define the different routes of transmission for infectious disease. - Describe examples of disease transmission by each route.
Infection Prevention and Control	This session explores the issues associated with infection prevention and control, particularly those surrounding hand hygiene. Later sections identify the groups at greatest risk of harm and offer guidance on how to refer any concerns over poor practice.	- Explain why infection prevention and control is important. - Describe the principles of effective hand hygiene. - Identify those patient groups at greatest risk. - Describe how to refer any concerns over poor practice.
Infection Control Issues	This session discusses healthcare-associated infections (HCAIs) and the chain of infection that enables them to spread. It also looks at key infection control activities known as standard precautions and how to carry out a risk assessment.	- Describe the chain of infection. - Identify standard precautions. - Carry out a risk assessment.
Universal Precautions and Cross Infection	This session explains risk assessment and the precautions needed in all situations. Standard precautions should be used for all procedures involving body fluid. They are based on the principle that all body fluids are contaminated.	- Explain why standard precautions are required. - Describe how to assess the risk of a procedure. - Explain how to apply standard precautions. - Explain post-exposure procedures.
Needle Stick (Sharps) Injuries	This session will explore the tools needed to understand the risks associated with needle stick and other sharps injuries and the action needed to take to prevent these injuries or deal with them if they happen. We will review the settings in which these injuries most often occur, the prevalence of the common blood-borne viral infections and the risks of these infections being passed on after a	- Define a ‘significant exposure’ and describe the major blood-borne infectious hazards associated with it. - Describe the settings in which needle stick/sharps injuries are most likely to occur and the various factors that might contribute to this occurrence. - Discuss the action that you should take in the event that you sustain a sharps injury.

Session	Description	Learning Outcomes
	sharps injury. You will review the action you and others need to take if you suffer such an injury.	- Discuss the role played by vaccination and post-exposure prophylaxis in reducing the infectious risk of sharps injuries.
Sharps Safety	This session explores sharps safety, reinforcing and developing the learner's understanding of this important topic. It aims are to help prepare the MRCS candidate and also to provide information to ensure the safety of patients and workers in all settings where sharps may be used.	- Describe relevant legislation which applies to standard infection control precautions as applied to health workers in order to avoid sharps injuries. - Identify substances that should be potentially regarded as infectious. - List general precautions that should be taken for all clinical procedures. - Specify how sharps should be used and disposed of with particular reference to the operating theatre.
Sharps Injuries	This session explores the risks of occupational exposure to blood borne viruses (BBV) such as HIV, hepatitis B and hepatitis C, and the immediate management of such injuries. It focuses mostly on strategies and technologies designed to minimise exposures.	- Describe the epidemiology of sharps injuries in an occupational setting. - Describe the modes of transmission of infection with blood borne viruses and identify their relative risks. - Describe the individual components of 'universal precautions' and recognise how these measures can help to reduce risk of exposure. - Describe the immediate management of sharps and needlestick injuries. - Recognise examples of good and bad practice in relation to sharps injuries. - Recognise new technologies and devices that are designed specifically to avoid or minimise the risk of sharps injuries, and identify situations where they could be employed.
Management of Incontinence and Urinary Catheters	This session explores the issues surrounding the use of indwelling urinary catheter devices. Later sections investigate the complications that may arise and offer guidance on how to care for people who suffer from incontinence.	- Describe how an indwelling urinary catheter works. - Describe the principles of replacing a catheter bag. - Identify some of the complications associated with urinary catheterisation. - Describe how to care for people with incontinence.

Session	Description	Learning Outcomes
Promoting Best Practice in Catheter Care	This session has been developed as a generic training package suitable for staff working in all care environments. Staff should be aware that there may be challenges in their working environment (e.g. for Community Nurses working in a patient's home) that they will need to adapt to.	- Explain the risks of catheterisation. - Describe the appropriate clinical indications for catheterisation. - Select the appropriate catheter and accessories for your patient. - Describe the principles of good catheter maintenance. - Identify solutions to common problems with catheterisation. - Identify the risk factors for CAUTI and explain how to prevent these.
Continence and Catheter Care	This session comprises two sessions: Promoting best practice in continence care and Promoting best practice in catheter care aimed at nursing staff and health care assistants across all care settings, to improve knowledge and awareness of all aspects of continence and catheter care. The e-learning sessions should be used as an adjunct to face-to-face teaching sessions on catheterisation.	The programme includes discussion of the different types of incontinence and the therapies and treatments that can be offered to patients. Emphasis will be placed on avoiding catheterisation and on strategies for reducing the risk of catheter acquired urinary tract infection (CAUTI) in situations where catheterisation is unavoidable.
Hygiene and Infection Control	This session explores the hygiene procedures and precautions that need to be undertaken for the safe conduct of anaesthesia in austere environments.	- Describe the challenges of maintaining hygiene in the field. - Explain how to clean, disinfect and sterilize anaesthetic equipment. - Explain how to safely operate an autoclave. - Categorize equipment into critical, semi-critical and non-critical. - Describe the gold standards and possible alternatives for decontaminating anaesthetic equipment in austere environments. - List the components of universal precautions. - Describe the safe disposal of sharps and the use and disposal of ampoules.
Preparation of the Surgical Site	This session explores the steps that should be taken to prepare the surgical site and provides an	- Describe the steps taken to prepare the surgical site. - List the chemicals commonly used for skin preparation. - Explain the evidence base for each.

Session	Description	Learning Outcomes
	overview of the chemicals that are commonly used for skin preparation.	- Describe the advantages and disadvantages of each.
The Surveillance of Infectious Disease in the UK	This session provides an overview of the surveillance of infectious diseases, its principles and uses in the UK - including the most recent changes and their practical implications. It demonstrates, using practical examples, how surveillance informs public health policy and action.	- Describe the principles of surveillance systems in the UK. - Describe the major categories of surveillance systems currently used in the UK. - Describe the practical application of surveillance systems to support public health policy and infectious disease control measures in the UK. - Appraise the strengths and weaknesses of surveillance systems in the UK.
Impact of Immunity	This session describes the impact of immunity via the main available public health intervention of vaccination after a reminder of the different types of immunity and the dynamic transmission of infectious diseases. This includes the direct and indirect effects of vaccination, the rationale of various vaccination strategies, and the impact of vaccination induced immunity on disease epidemiology.	- Explain the different types of acquired immunity. - Understand the basic concept of dynamic transmission for infectious diseases. - Describe the aims and effects of vaccination. - Describe the main vaccination strategies and their rationale. - Describe the impact of vaccination.
Disease Notification	This session explores the rationale for notification and surveillance of infectious diseases. It outlines the importance of notification of certain infectious diseases and describes the implications for clinical practice.	- Describe steps that can be taken to break the chain of infection. - Explain reasons for the notification of communicable diseases. - Describe the surveillance process and its benefits. - List diseases which are notifiable in the UK.
Infection	This session aims to equip practitioners with information so that they can advise on infection-related public health issues and vaccination-related concerns in primary schools.	- Summarise relevant issues around hygiene in the primary school setting. - Review immunisation and effective interventions for immunisation in children of primary school age. - Manage both teacher and parental awareness of, and responses to, infectious disease. - Describe the management of cases/outbreaks of meningitis, diarrhoea and vomiting, conjunctivitis, impetigo and other diseases.

Session	Description	Learning Outcomes
		- Describe the social impact, transmission and management of lice and scabies.
Infection Control: Modes of Transmission	This session as part of the Foundation Programme discusses modes of transmission of infection and precautions to minimise risks of onward transmission, related to each mode.	- Explain principles and sources of cross infection. - Assess the risk of infection to your patient and yourself before undertaking patient contact. - Use personal protective equipment and standard precautions appropriately. - Use isolation facilities appropriately. - Explain to patients their infection status.
Infection Control: Early Management of Fever in an Inpatient	This session as part of the Foundation Programme discusses the initial management of a febrile illness developing in an inpatient. It provides the opportunity to practice your diagnostic skills and ability to assemble an appropriate management plan.	- Recognise likely sources of infection in an inpatient. - Use examination, pre-existing test results and new investigations to confirm the source of infection. - Obtain appropriate microbiological specimens in a timely fashion. - Select appropriate antimicrobial therapy in a timely fashion.
Infection Control: Further Management of Fever in an Inpatient	This session as part of the Foundation Programme discusses the complications of hospital-acquired infection. It continues the management of the case described in session 'Infection Control: Early Management of Fever in an Inpatient'.	- Recognise the complications of S. aureus/MRSA bacteraemia. - Identify the principles of good central venous catheter practice. - Recognise the principles of MRSA screening and isolation. - Discuss the principles of good dress code. - Identify the 5-point scheme for correct hand hygiene.
Infection Control: Air and Blood Borne Pathogens	This session as part of the Foundation Programme discusses the management of issues surrounding an inpatient with possible tuberculosis (TB). It provides the opportunity to think through the issues surrounding appropriate respiratory isolation.	- Describe different types of isolation facilities available Recognise the importance of personal protective equipment (PPE). - Discuss factors besides PPE that minimise personal infection risk. - Explain to patients how to minimise risk of transmission of infection. - Decide on appropriate microbiological specimens.

Session	Description	Learning Outcomes
Infection Control: Diarrhoea in an Inpatient	This session as part of the Foundation Programme discusses the management of diarrhoea developing in an inpatient. It gives you the opportunity to practice your diagnostic skills as well as to assemble an appropriate management plan.	- Formulate an appropriate differential diagnosis for diarrhoea in an inpatient. - Assess severity of a diarrhoeal illness. - Identify appropriate interventions for the management of diarrhoea, including hand hygiene and personal protective equipment. - Describe the modes of spread of diarrhoeal agents. - Explain local antibiotic guideline policies for diarrhoea management. - Select the appropriate antibiotics for diarrhoea management. - Discuss local surveillance for adverse outcomes from Clostridium difficile (C diff) infection.
Hospital acquired fever: What to do if MRSA positive	This session discusses the initial management of a febrile illness developing in an inpatient. It gives you the opportunity to practice your diagnostic skills and ability to assemble an appropriate management plan.	- Recognise likely sources of infection in an inpatient. - Use examination, pre-existing test results and new investigations to confirm the source of infection. - Obtain appropriate microbiological specimens in a timely fashion. - Select appropriate antimicrobial therapy in a timely fashion.
Hospital Acquired Fever: What to do Next	This session discusses the complications of hospital acquired fever when MRSA is present. It continues the management of the case described in session 'Hospital Acquired Fever: What to do if MRSA Positive'.	- Recognise the complications of S. aureus/MRSA bacteraemia. - Identify the principles of good central venous catheter practice. - Recognise the principles of MRSA screening and isolation. - Discuss the principles of good dress code. - Identify the 5-point scheme for correct hand hygiene.

NHS Improvement

Preventing Healthcare Associated Gram-Negative Bacterial Bloodstream Infections toolkit

Public Health England

Infection Control In Care Homes films

Antimicrobial Resistance: resource handbook

Other resources

To Dip or Not To Dip Training Animation and E-learning

Oxford AHSN: Good hydration and urine infections (Part 1, 2, 3, 4, 5 & 6)

Future Learn: Using Infection Control to Combat Antimicrobial Resistance

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Central nervous system infections

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Brain Abscess, Epidural Abscess, Subdural Empyaema	This session discusses the imaging features of brain abscess, subdural and epidural infections.	- Recognise the imaging features of brain abscess, subdural and epidural infections. - Identify the common causes of these infections. - Describe the main clinical features of these conditions. - List the differential diagnosis for the imaging appearances of a brain abscess.
Brain Parenchymal Infections: Congenital, Bacterial, Tubercular, Fungal and Parasitic Infections	This session provides information on brain infections including congenital, bacterial, tubercular, fungal and parasitic.	- Detect and differentiate intracranial infection. - List the central nervous system (CNS) manifestations of bacterial, tubercular, fungal and parasitic infections. - Distinguish between abscess and tumour and to know that there are mimics between these entities. - Describe the features of congenital infection, particularly the TORCH group. - State the importance of contrast enhancement and complementary role of computed tomography (CT) and magnetic resonance imaging (MRI).
Brain Parenchymal Infections: Viral, Post-infectious Sequelae and Opportunistic Infections	This session explores viral infections - post infectious, sequelae and opportunistic infections.	- List the central nervous system (CNS) manifestations of viral infections, such as encephalitis, meningitis, leucoencephalitis, vasculitis and infarct. - Describe the imaging features on magnetic resonance imaging (MRI) of encephalitis caused by herpes simplex virus, arbo virus (japanese encephalitis), measles and cruedzfeldt-jakob disease. - Detect and differentiate the features of post infectious encephalitis and opportunistic infections. - Identify the radiological features of primary human immunodeficiency virus infection and opportunistic infections.

Session	Description	Learning Outcomes
Spinal Infection	This session provides an overview of the imaging of spinal infection. This rare condition needs rapid and tailored imaging. The session covers the different sites within the spinal canal in which the infection can be based.	- Recognise the need for early diagnosis. - List and describe the pathology and causative mechanisms. - Recognise clinical symptoms/signs to direct imaging appropriately. - Use imaging effectively to diagnose and evaluate the disease process and extent. - Identify imaging features of the more common infections.
Intracranial Infections	This session discusses Intracranial infections (also called central nervous system infections or CNS infections). These are relatively rare, but form a very important differential diagnosis in the unwell patient. It is essential to suspect and expedite treatment because consequences of a missed CNS infection are severe.	- Identify the major causes of CNS infection. - Distinguish between those seen in immunocompromised and non-immunocompromised patients, and highlight those of particular concern in people returning from travel abroad. - Explain how to differentiate, on clinical grounds, the relevant infections in the above groups. - Formulate a pragmatic approach to the investigations required to determine the cause. - Explain the current treatment recommendations for the most important causes of intracranial infection.
Meningitis in Children	This session describes the prevalence and impact of meningitis. You will learn to recognise the symptoms and how to conduct immediate management of a child with suspected meningococcal disease including administering intra-muscular penicillin.	- Recognise the symptoms and signs of meningitis in children. - Describe the role of the primary care practitioner in the immediate management of a child with suspected meningitis. - Identify common problems in the diagnosis of meningitis in children. - List the long-term implications of meningitis in children.
Viral Meningitis	This session explores viral meningitis, its clinical and laboratory diagnosis, prevention measures and antiviral treatment.	- Identify symptoms associated with meningitis. - Identify which viruses cause meningitis. - Identify how these virus infections can be diagnosed. - Identify which of these viruses can be treated with antiviral drugs.
Virus Encephalitis	This session explores viral encephalitis and examines in detail encephalitis caused by herpes	- List the symptoms associated with viral encephalitis.

Session	Description	Learning Outcomes
	simplex virus. It will deal with clinical and laboratory diagnosis, the risk of infection during foreign travel and prevention measures, and antiviral treatment.	- Identify how viral encephalitis can be diagnosed in the laboratory. - Identify which antiviral drugs can be used to treat HSV encephalitis. - Describe the risks of encephalitis from foreign travel.
Signs and Symptoms of Viral Encephalitis	This session describes the signs and symptoms that should alert the clinician to suspect a diagnosis of viral encephalitis.	- Recognise the symptoms and signs of viral encephalitis.
All About HSV Encephalitis	This session describes the pathogenesis, diagnosis and treatment of herpes simplex encephalitis.	- Describe the pathogenesis and epidemiology of herpes encephalitis. - Form a differential diagnosis of patients in whom you suspect a viral encephalitis. - Order and interpret clinical investigations to support your diagnosis. - Instigate a safe management plan.
Secondary Headache	This session describes the presentation and investigation of patients with a headache that has an underlying pathological cause.	- Differentiate between common types of secondary headache. - Identify possible causes for secondary headache. - Describe red flag signs for secondary headache. - Describe the investigations that are appropriate for secondary headache.

Meningitis Research Foundation

Session	Objectives/Learning outcomes
Lessons from research for doctors in training: recognition and early management of meningococcal disease in children and young people	- To use clinical examples to teach about the signs of sepsis and meningitis. - To clarify the important differences between meningococcal meningitis and sepsis. - To outline the basic management of meningococcal sepsis and meningitis in line with the algorithm '*Management of Meningococcal Disease in Children and Young People*'. - To describe the clinical pathophysiology of meningococcal disease. **Please see:** E-learning resource for the management of bacterial meningitis in infants under three months of age.

Session	Objectives/Learning outcomes
Clinician's Guide to Recognition and Early Management of Meningococcal Disease in Children e-learning tool	- This educational tool provides an opportunity to learn from real cases from the research study, using individual case histories as a basis for discussion and learning. The cases are presented in interactive question and answer format, linked to text, photos and audio. - The clinical management points are based on the good practice guide 'Early Management of Meningococcal Disease in Children', developed at the Department of Paediatrics, St Mary's Hospital, London and produced by Meningitis Research Foundation. - Learners will understand the background to the disease, pathophysiology, diagnosis and management using clinical case histories: questions and answers, discussions and learning points.
Management of bacterial meningitis in infants under three months of age e-learning	After completing this eTool, you should be aware of: - Risk factors and clinical indicators for infection in young infants. - Which investigations should be carried out. - Importance of giving appropriate antibiotics and when these should be given. - Prognosis and long-term effects of meningitis.

Further resources for all health professionals can be found on the Meningitis Research Foundation Resource Webpage.

Royal College of Emergency Medicine

Session	Objectives/Learning outcomes
Meningitis	- Recognise the clinical features of invasive meningococcal disease in children. - Provide acute resuscitation to children with suspected invasive meningococcal disease. - Differentiate between children presenting with meningococcal meningitis and meningococcal septicaemia. - Explain a rational system for the investigation of children with suspected invasive meningococcal disease. - Formulate an evidence based emergency department (ED) management plan for children with meningococcal meningitis and/or septicaemia.

Department of Health and Social Care Meningococcal Working Group report

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Ear, nose and throat infections

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Pathology and Symptoms: Eustachian Tube Dysfunction and Otitis Media	This session discusses the pathology and symptoms of Eustachian tube dysfunction and otitis media. Eustachian tube dysfunction can occur in adults or children. It can occur after a cold, flu, ear infection or can be idiopathic.	- Explain the normal function of the Eustachian tube. - Describe the pathology of Eustachian tube dysfunction. - Identify the symptoms of Eustachian tube dysfunction. - Describe the pathology of otitis media. - Identify the symptoms of otitis media.
Management of Eustachian Tube Dysfunction and Otitis Media	This session discusses how Eustachian tube dysfunction can progress to otitis media. It identifies the various classifications of otitis media and outlines treatments for otitis media.	- Describe the progression from Eustachian tube dysfunction to otitis media. - Identify management options for Eustachian tube dysfunction. - Identify management options for otitis media.
Examination of a 20-Year-Old with Acute Ear Pain	This session uses a video clip to demonstrate how to carry out a focused, problem-based physical examination on a patient presenting with acute ear pain in primary care.	- Describe an appropriate problem-based examination of a patient presenting with ear pain. - Carry out a careful examination of the ear to help exclude serious pathology. - Demonstrate the ability to use an auriscope correctly. - Explain the examination and findings to the patient.
Acute Sore Throat	This session explores the assessment, investigation and management of the patient who presents to the emergency department with a sore throat. It also covers the more serious conditions that can present in this way.	- Identify acute tonsillopharyngitis and differentiate it from other causes of sore throat. - Formulate a strategy for the appropriate administration of antibiotics to patients presenting with a sore throat. - Describe the suppurative and non-suppurative complications of group A β haemolytic streptococcal infection. - Recognise more serious causes of a sore throat such as epiglottitis and peritonsillar abscess, and institute appropriate treatment and referral.

Royal College of Emergency Medicine

Session	Objectives/Learning outcomes
Acute sore throat	- Understand definition, basic science and pathophysiology of acute sore throat presentations. - Describe the main causes including viruses, bacteria, pollutants and other causes. - Describe the role of clinical assessment, risk stratification, management and Medico Legal considerations. - Define related presentations such as scarlet fever, peritonsillar abscess, epiglottitis and retropharyngeal abscess.

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Eye infections

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
External Eye and Tear Duct Infections	This session discusses the assessment and management of infections affecting the external eye and the lacrimal apparatus.	- Identify the anatomical factors that contribute to the development and spread of infections of the eye lid and peri-orbital structures. - Describe the pathophysiology and clinical features of dacryoadenitis and dacryocystitis, and institute appropriate treatment. - Differentiate between a chalazion (meibomian cyst) and acute hordeolum of the eye and formulate management strategies for each condition. - Differentiate between preseptal and orbital cellulitis and formulate a management strategy for both conditions. - Recognise the serious complications of orbital infections and institute appropriate treatment and referral.
Management of Atraumatic Red Eye	This session discusses the initial assessment, differential diagnosis and management of a patient presenting to the emergency department with an atraumatic red eye.	- Identify the clinical features of the different types of conjunctivitis and describe appropriate investigation and management. - Differentiate clinically between inflammatory conditions of the anterior uveal tract and give examples of the aetiological associations. - Distinguish episcleritis from scleritis and formulate a management plan for both conditions. - Recognise the clinical features of acute open angle glaucoma and describe an initial management plan.
The Patient with a Red Eye	This session provides core information about the assessment, differential diagnosis and management of a patient presenting in primary care with an acutely red eye. It covers how to identify potentially serious cases that need urgent referral.	- Outline the common and serious causes of red eyes. - Describe a logical approach to assessing the patient with a red eye. - Distinguish between infective and allergic conjunctivitis, episcleritis and scleritis, iritis and uveitis and associated conditions.

Session	Description	Learning Outcomes
		- State the importance of the acute management of corneal ulcer, particularly for contact lens wearers. - Describe self-limiting conditions and those that require referral or treatment.

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Session	Objectives/Learning outcomes
Atraumatic red eye	- Understand a wide range of acute eye problems, from relatively minor conjunctivitis to potentially eyesight-threatening acute angle closure glaucoma. - Describe the context, definition, basic science and pathophysiology of atraumatic red eye. - Describe the role of clinical assessment, examination, investigations, and management. - Define when antibiotic treatment should be initiated. - Understand related presentations such as allergic conjunctivitis, non-traumatic subconjunctival haemorrhage, keratitis and keratoconjunctivitis, acute angle closure glaucoma, episcleritis, scleritis and anterior uveitis (iritis).
Corneal injuries	- Describe the context, basic science and pathophysiology of corneal injuries. - Describe the role of clinical assessment, investigations, and management of corneal injuries including the role of topical antibiotics.

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Oral and dental infections

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Management of Sore Mouth and Other Oral Problems	This session provides a framework for the assessment and management of a sore mouth and other oral problems. Oral problems can impact greatly on the quality of life of patients receiving end of life care.	- List the risk factors for common problems with mouth care in patients nearing the end of life. - Outline the core steps involved in assessing a sore mouth and other oral problems to reach a diagnosis and initiate a management plan. - Describe the main drug and non-drug approaches to the management of sore mouth and other common oral problems.
Full Mouth Approach To Therapy	This session describes the concept of full mouth, non-surgical periodontal therapy, looking at the history of the development of the concept and the evidence base relating to its use.	- Describe the concept of full mouth non-surgical periodontal therapy. - Evaluate the evidence relating to full mouth therapy. - Apply the principles of full mouth therapy in clinical practice.
Infection and Surgical Management	This session discusses the principles of surgical management of infections with particular application to the infections that a dental practitioner is likely to encounter in practice.	- List the basic principles of the surgical management of infections. - Appropriately manage common infections encountered in the dental practice. - Identify a Ludwig's angina. - Appropriately refer to the oral maxillofacial surgery (OMFS) team.
Dental Pain and Infections	This session discusses the presentation, assessment and management of dental infections in the emergency department.	- Describe the different types of dental infection and the pathophysiology of their development. - Differentiate between simple dental abscess and those infections in which admission is needed. - Prescribe an appropriate treatment regime for uncomplicated dental abscess. - Identify Ludwig's angina and Vincent's angina and initiate appropriate referral and treatment.

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Session	Objectives/Learning outcomes
Dental Emergencies	- Support those working in emergency departments to deliver optimal management of a dental infections. - Understand the anatomy and pathophysiology of dental infection. - Understand the role of clinical assessments including history taking and oral examinations. - Understand investigation strategies and management of dental infections and abscesses. - Recognise two uncommon but important diagnoses not to be missed in patients attending the emergency department i.e. Ludwigs and Vincents angina.
More Dental Emergencies	- Understand the context, definition and pathophysiology of dental trauma. - Understand the role of clinical assessment, risk stratification, investigations and management in dental trauma, pain and abscess. - Understand the context and definition of bleeding and dry sockets and it's pathophysiology, clinical assessment, risk stratification, investigations, management and pitfalls.

British Dental Association

Antibiotic prescribing toolkit

Faculty of Dental Surgery

Resources

Faculty of General Dental Practice (UK)

Antimicrobial prescribing

Public Health England

Dental antimicrobial stewardship: toolkit

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Cardiac infections

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Diagnosis of Endocarditis	This session reviews Duke criteria and exceptions.	Identify major and minor Duke criteria.
Infective Endocarditis (IE)	This session discusses the epidemiology, pathophysiology, radiology and management of infective endocarditis (IE).	- Recognise the groups of patients at risk of developing IE, and the presenting features of local and distant spread. - Differentiate between the available imaging modalities and be able to advise the appropriate investigation for each circumstance. - Describe the intra- and extracardiac imaging features of IE. - List complications that require surgical intervention.

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Session	Objectives/Learning outcomes
Endocarditis	- Describe the context, definition, aetiology and pathophysiology of endocarditis. - Describe the role of clinical assessment, examination, investigations, management, prognosis and follow-up strategies. - Define common bacteria isolated in endocarditis and the role of antibiotic treatment. - Identify major and minor Duke criteria.

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Respiratory tract infections

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Upper and Lower Respiratory Tract Infections	This session discusses the aetiology, diagnosis and management of upper and lower respiratory tract infections and explores their impact on the planning and conduct of anaesthesia.	- Describe the symptoms and signs frequently associated with respiratory infections. - List the common pathogens which cause respiratory tract infections. - Describe the necessary lab tests and investigations required if a patient is suspected of having a respiratory infection. - Describe the main consequences of respiratory tract infections on the practice of anaesthesia. - Outline management options to cope with these consequences.
Respiratory Tract Infection Part 1	This session discusses the transmission routes and the pathological detail of an influenza virus infection. Virus structure will be discussed and classification based on this structure will be highlighted.	- Describe the transmission, clinical features and pathogenesis of an influenza virus infection. - Identify the components of an influenza virion. - Relate virus structure to the classification of the virus. Describe the difference between antigenic shift and drift.
Community Acquired Pneumonia	This session explores information relating to Community Acquired Pneumonia (CAP) in adults that may be encountered during paramedic practice, in either an Emergency, Urgent or Primary care setting.	- The common presentations of a lower respiratory tract infection - What assessments are required when a patient presents CAP
Severity Assessment of Pneumonia Using the CURB-65 Criteria	This session discusses the severity assessment of patients with community-acquired pneumonia, including the CURB-65 score and its use in formulating an initial management plan.	- Determine the severity of a patient with pneumonia using the CURB-65 score and decide on an initial management plan.
Basic Radiographic Signs of Infection	This session explores at signs of infection as seen on plain radiographs and CT.	- Recognise typical features of infection on plain radiograph and CT. - Recognise characteristic HRCT for various infections.

Session	Description	Learning Outcomes
		- Discuss the indications for further imaging. - Describe the imaging findings with particular reference to specific features that may aid diagnosis.
Ventilator Associated Pneumonia	This session discusses the definition, causes, diagnosis, management and prevention of ventilator associated pneumonia.	- Define ventilator associated pneumonia (VAP). - Identify the likely aetiological bacteria involved with VAP. - Describe a diagnostic strategy for identifying VAP. - Describe a management strategy for treating VAP. - Recognize the difficulties associated with VAP. - Describe methods of prevention for VAP.
Chronic Pulmonary Obstructive Disease and Non-invasive Ventilation	This session provides an overview of all aspects of Chronic Obstructive Pulmonary Disease (COPD.) Particular mention will be given to management of respiratory failure due to exacerbations and the use of non-invasive ventilation (NIV).	- Describe COPD in terms of definition and classification. - Describe the typical symptom complex of COPD. - Describe the management strategies for both stable disease and exacerbations. - Describe the indications for the application of NIV.
Acute Asthma	This session discusses Acute asthma. Acute asthma is a common emergency condition affecting all age groups. Early recognition and management can save lives.	- Describe different types of acute asthma. - Describe the pathophysiology of asthma. - Describe the appropriate management of acute severe asthma. - Describe the basic principles and management of the ventilated patient with acute severe asthma.
Empyema	This session demonstrates the pathophysiology, diagnosis and treatment of empyemas. It offers a multimodality approach and provides an algorithm for management of empyemas.	- Diagnose an empyema. - Predict response to treatment. - Assess treatment for empyema. - Diagnose treatment complications for empyema.
Infection Control: Air and Blood Borne Pathogens	This session discusses the management of issues surrounding an inpatient with possible tuberculosis (TB). It provides the opportunity to think through the issues surrounding appropriate respiratory isolation.	- Describe different types of isolation facilities available Recognise the importance of personal protective equipment (PPE). - Discuss factors besides PPE that minimise personal infection risk. - Explain to patients how to minimise risk of transmission of infection. - Decide on appropriate microbiological specimens.

Session	Description	Learning Outcomes
Tuberculosis: Basic Patterns	This session describes the clinical and imaging features of thoracic mycobacterium tuberculosis infection.	- Recognise the various presentations of active and old tuberculosis (TB) on chest radiograph (CXR) and chest computed tomography (CT). - Identify CT and CXR signs that may distinguish old from active TB. - Describe the natural history and epidemiology of TB infection and how this affects radiologic interpretation.
Recurrent Chest Infections	The session explores recurrent chest infections in children and includes chest infections which are slow to resolve.	- Name important causes of recurrent chest infections in children. - Recognise signs of infection on chest radiographs. - Review serial chest radiographs. - Suggest further imaging.
Cystic Fibrosis	This session explores the various clinical and radiological manifestations of cystic fibrosis and the role of imaging.	- Describe the spectrum of radiological manifestations of cystic fibrosis. - Interpret radiographs and computed tomography (CT) of the chest in cystic fibrosis. - Describe the role of imaging in the management of cystic fibrosis.

Treat Antibiotics Responsibly, Guidance, Education, Tools (TARGET) – PHE and RCGP

Session	Objectives/Learning outcomes
Managing acute respiratory tract infections (MARTI) e-learning	- The MARTI series of training modules enables you to improve the care you provide to patients presenting with acute ear pain, acute sore throat, sinusitis and acute cough. - It explains why it is crucial to evaluate your everyday prescribing decisions and gives examples of methods you can use to do this, as an individual and within a practice, and encourages you to identify barriers to change. - It also reviews the clinical knowledge, communication skills and tools needed to assess and treat patients most effectively.

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Session	Objectives/Learning outcomes
Croup	- Define croup and understand the basic science and pathophysiology of stridor. - Describe the epidemiology of croup and understand it's clinical assessment, differential diagnosis, management, prognosis and follow up strategies. - Describe other causes of acute stridor in children and their management.
Community Acquired Pneumonia	- Define the context, basic science, pathophysiology and aetiology of community acquired pneumonia. - Consider the definition of community acquired pneumonia, it's relation to atypical pneumonia and its clinical assessment, investigations, management, prognosis and follow up strategies.
Chronic Obstructive Pulmonary Disease	- Describe the context, definition, pathophysiology and aetiology of COPD exacerbations. - Define the main causes including viruses, bacteria, pollutants and other causes. - Understand the role of clinical assessment, differential diagnosis, investigations, management, prognosis and follow up strategies. - Understand safety pearls, pitfalls, Medico Legal and other considerations associated with COPD. Also listen to: 'Myths in COPD' Podcast
Adult Cystic Fibrosis	- Define the context, basic science and pathophysiology of cystic fibrosis (CF). - Describe the most common infecting bacteria that results in bronchiectasis, abnormal lung function and respiratory failure. - Understand the impact of CF on other systems for example gastrointestinal and musculoskeletal. - Describe the role of clinical assessment, investigations, management, prognosis and follow up strategies.

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Gastrointestinal infections

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Infection Control: Diarrhoea in an Inpatient	This session explores the management of diarrhoea developing in an inpatient. It gives you the opportunity to practice your diagnostic skills as well as to assemble an appropriate management plan.	- Formulate an appropriate differential diagnosis for diarrhoea in an inpatient. - Assess severity of a diarrhoeal illness. - Identify appropriate interventions for the management of diarrhoea, including hand hygiene and personal protective equipment. - Describe the modes of spread of diarrhoeal agents. - Explain local antibiotic guideline policies for diarrhoea management. - Select the appropriate antibiotics for diarrhoea management. - Discuss local surveillance for adverse outcomes from Clostridium difficile (C diff) infection.
Investigation and Management of Diarrhoea	This session addresses the assessment, investigation and management of diarrhoea, with a particular focus on common conditions that present in the acute medical setting.	- Assess patients with acute and chronic diarrhoea. - Recall common conditions presenting with diarrhoea and distinguish between them. - Describe the management of some common disorders associated with malabsorption. - Outline how to manage patients with inflammatory bowel disease.
Appendicitis in a Patient with Right Iliac Fossa Pain	This session discusses the assessment and management of patients with appendicitis. The scope of the session includes initial approach and diagnosis, as well as predicting the likelihood of appendicitis based on clinical and laboratory findings, and surgical management of patients with appendicitis.	- Elicit the features on history and examination that suggest a diagnosis of appendicitis in a patient with right iliac fossa pain. - Order and interpret appropriate laboratory tests and imaging in patients with suspected appendicitis. - Institute appropriate emergency department management for patients with right iliac fossa pain. - Describe the on-going surgical management of appendicitis.

Session	Description	Learning Outcomes
Abdominal Pain Case 02	This session is an interactive scenario which describes one of a number of possible cases where a patient presents with abdominal pain. As you progress through the scenario you will have the opportunity to apply your knowledge and skills to diagnose and treat this patient. Once you have specified a treatment plan, a simulation of the patient's responses over a period of time enables you to evaluate its success.	- Assess your skill in diagnosing and creating a management plan for a patient presenting with abdominal pain by comparing your responses with those of an expert. - Determine any additional training needs in subject areas related to this case.
Acute Abdomen: Preparation	This session describes the main anaesthetic considerations when preparing a patient with an acute abdomen for theatre.	- Recognize investigations required prior to emergency surgery. - Assess circulating volume and acid-base status. - Describe how to resuscitate a patient needing a laparotomy. - Determine the optimum time to operate.
Pancreatitis	This session provides information on pancreatitis, including the diagnosis, basic science, assessment and management.	- Elicit the features on history and examination that suggest a diagnosis of pancreatitis in a patient with abdominal pain. - Describe the aetiology and pathophysiology of pancreatitis. - Perform a risk assessment in a patient presenting with suspected pancreatitis. - Order and interpret appropriate laboratory tests and imaging in patients with suspected pancreatitis. - Institute appropriate initial management and describe the ongoing care of a patient with pancreatitis.
Pancreas: Pancreatitis Diagnosis (Acute)	This session discusses the role of imaging in diagnosis and management of acute pancreatitis, along with complications and the role of interventional radiology management of the patient.	- Describe the role of imaging in the diagnosis and management of acute pancreatitis. - Identify the complications caused by this condition. - Define the role of interventional radiology in the management of this condition.
Gall Bladder Disease	This session discusses the assessment and management of gall bladder and gall stone disease.	- Elicit the features on history and examination that suggest a diagnosis of gall bladder disease in a patient with right upper quadrant pain.

Session	Description	Learning Outcomes
		- Describe the spectrum of pathologies seen in gall bladder disease. - Order and interpret appropriate laboratory tests and imaging in patients with suspected gall bladder disease. - Institute a management strategy in the emergency department for patients with suspected gall bladder disease and describe their on-going management.
Gallbladder and Biliary Tract: Inflammatory Conditions of the Biliary Tract	This session discusses acalculus and calculi-related inflammatory conditions of the biliary tract.	- Describe the different types of inflammatory conditions of the biliary tract. - Describe the pathophysiology and clinical manifestations of these conditions. - Identify common radiological investigations and features of these conditions.

Treat Antibiotics Responsibly, Guidance, Education, Tools (TARGET) – PHE and RCGP

Session	Objectives/Learning outcomes
Managing infectious diarrhoea e-learning	- This course uses case studies to illustrate various points in the clinical management of patients with infectious diarrhoea, as well as covering the public health issues involved. The wider differential diagnosis of diarrhoea is also discussed.

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Session	Objectives/Learning outcomes
Appendicitis	- Define appendicitis and understand its background and presentation. - Understand the clinical assessment, differential diagnosis, management, prognosis and follow up strategies. - Understand the role of clinical scoring tools and when to initiate antibiotics.
Upper gastrointestinal (GI) haemorrhage	- Describe the role clinical assessment, risk assessment, medical and non-medical management, prognosis and follow-up strategies. - Explore the role of antibiotic treatment in patients presenting with upper GI haemorrhage.
Peptic Ulcer Disease	- Describe the definition, basic science and pathophysiology that includes sites for PUD and causes.

Session	Objectives/Learning outcomes
	- Understand the role of clinical assessment, investigations, management, safety pearls and pitfalls for PUD. - Explore the role of treatment including antibiotic use in patients with PUD.

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PHILIPS

Surgical site infections

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Preparation of the Surgical Site	This session describes the steps that should be taken to prepare the surgical site and provides an overview of the chemicals that are commonly used for skin preparation.	- Describe the steps taken to prepare the surgical site. - List the chemicals commonly used for skin preparation. - Explain the evidence base for each. - Describe the advantages and disadvantages of each.
Antimicrobial Prophylaxis	This session defines surgical site infections (SSIs) and explains the principles of antibiotic prophylaxis, including risks and benefits. It outlines alternatives available for those patients with penicillin allergy.	- Describe the aim of surgical antibiotic prophylaxis. - Recognise the benefits and risks for surgical antibiotic prophylaxis. - Identify when and how to administer surgical antibiotic prophylaxis. - Explain which factors influence the choice of surgical antibiotic prophylaxis.
Post-operative Antibiotic Prescribing	This session defines, classifies, describes the consequences and outlines the principles of treatment of surgical site infections (SSIs). The principles of choosing which antibiotics to use for SSIs, the duration, route of administration and what to do in the event of treatment failure are additionally addressed.	- Describe the sequelae of surgical site infections. - Explain principles of empirical regimens based upon likely pathogen in antimicrobial therapy. - Identify principles for use of alternative antibiotics for antimicrobial therapy in case of penicillin allergy. - Identify principles of targeted antimicrobial therapy according to culture results. - Describe principles of duration and route of administration of antimicrobial therapy.
Acute Abdomen: Preparation	This session describes the main anaesthetic considerations when preparing a patient with an acute abdomen for theatre.	- Recognize investigations required prior to emergency surgery. - Assess circulating volume and acid-base status. - Describe how to resuscitate a patient needing a laparotomy. - Determine the optimum time to operate.

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Skin and soft tissue infections

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Acute Wound Infections	This session provides an overview of acute wound infections. It lists the causative micro-organisms and offers guidance on assessing and managing patients with acute wound infections.	- List the micro-organisms commonly associated with acute wound infections. - Describe the clinical and pathological features of acute wound infections. - Explain the principles of treatment of acute wound infections.
Chronic Wound Infections	This session describes the features of chronic wound infections, identifying the most common causative microorganisms and outlining the principles of chronic wound infection management.	- List the microorganisms commonly involved in chronic wound infections. - Describe the clinical and pathological features of chronic wound infection. - Explain the principles of treatment of chronic wound infection.
Assessment of Complex Wounds	This session provides a detailed description of the methods used to assess a complex wound and preserve the viable tissues.	- List Gillies and Millard's rules for the assessment of complex wounds. - Describe the steps taken when assessing a complex wound. - List the effects of poor tissue handling on wound healing. - Describe the steps taken during surgery to avoid additional damage while handling tissues.
Cellulitis and Other Skin Infections	This session explores the cause, clinical features, treatment and management of impetigo, cellulitis, erysipelas and necrotising fasciitis.	- Describe the clinical features that distinguish soft tissue infections. - Outline the management of these conditions. - Identify those infections that are life-threatening. - Describe which treatments should be provided to patients with life-threatening infections. - Describe the problem of drug resistant infections and how this changes management.

Session	Description	Learning Outcomes
Cellulitis of the Lower Limb	This session discusses the predisposing factors for cellulitis of the lower limb and identify the organisms that are commonly involved. Later sections will offer guidance on how to devise a treatment plan for patients with cellulitis of the lower limb.	- List the predisposing factors for cellulitis of the lower limb. - State the likely organisms. - Given a case history, devise a logical treatment plan.
Staphylococcal Related Skin Disorders	This session describes different types of skin disease caused by Staphylococcus aureus based on 4 case studies. Many of the conditions can also be associated with infection by Group A Streptococcus.	- Recognise and differentiate the different types of skin infection caused by Staphylococcus aureus. - Explain the treatment for staphylococcal skin infections.
Staphylococcal Scalded Skin Syndrome (SSSS)	This session explores Staphylococcal Scalded Skin Syndrome (SSSS). It describes the pathogenesis and aetiology, as well as the clinical features, investigations and appropriate management.	- Describe the pathogenesis and aetiology of Staphylococcal Scalded Skin Syndrome (SSSS). - Recognise the clinical features of SSSS. - List the differential diagnoses. - Investigate a suspected case appropriately. - Initiate the appropriate management.
Human and Animal Bites	This session describes the features of human and animal bites and outlines how to assess and manage such injuries.	- Describe the pathological features of bite injuries. - Explain how to assess a patient with a bite wound. - Describe the principles of managing bite injuries.
Management of Bites in the Upper Limb	This session provides a detailed description of the specific issues of dealing with bites in the upper limb.	- Explain the particular risks of bites in the upper limb. - Name the organisms commonly involved. - Describe how to treat bites in the upper limb.
Systemic Antibiotics in Wound Infections	This session discusses the systemic antibiotics commonly used in plastic surgery and provides an overview of their side effects.	- List the antibiotics commonly used in wound infections. - Explain the rationale and evidence behind their use. - Describe the side effects of the named agents.
Necrotising Fasciitis	This session provides an overview of the microbiology of necrotising fasciitis and includes a comprehensive review of the role of antibiotics and surgery.	- Describe the pathology of necrotising fasciitis. - List the microorganisms commonly associated with necrotising fasciitis. - Explain how to assess a patient with possible necrotising fasciitis. - Describe the principles of antibiotic therapy for necrotising fasciitis. - Describe the principles of surgery to excise areas of necrotising fasciitis.

Session	Description	Learning Outcomes
Management of Skin Lesions in Meningococcal Septicaemia	This session describes the pathological processes involved in skin necrosis secondary to meningococcal septicaemia and outlines the role of surgery in managing patients affected by this condition.	- Describe the pathological processes in meningococcal septicaemia that lead to skin necrosis. - Explain the role of surgery in the management of skin lesions.
Mechanisms and Patterns of Soft Tissue Injury of the Face	This session describes the different types of soft tissue injury of the face, explaining the mechanism for each type of injury, describing common patterns of injury and offering guidance on how to assess patients with soft tissue injuries of the face.	- Describe the different types of soft tissue injury of the face. - Explain the mechanisms of each. - Describe the common patterns of injury. - Explain how to assess soft tissue injuries of the face.
Repair of Skin Wounds of the Eyebrow and Eyelids	This session explores the types of wound that commonly occur around the eyebrow and eyelids and describes the steps that are necessary to explore and surgically repair such wounds.	- Describe the aetiology and pattern of injuries to the eyebrows and eyelids. - Describe the steps taken to explore wounds of the eyebrow and eyelids. - Describe the steps taken to repair wounds of the eyebrow and eyelids.
Leg Ulcers	This session outlines a structured approach to diagnosing the cause of lower leg ulceration, including the identification of aggravating factors and appropriate use of investigations.	- Recognise the key questions that help to identify the common causes of leg ulceration. - List the key examination findings associated with each of the common causes of leg ulceration. - List the key investigations necessary to initiate treatment safely.
Dermatitis in a Leg Ulcer Patient	This session describes a leg ulcer patient who presents with dermatitis. It illustrates the steps required to establish the diagnosis and then to institute appropriate management.	- Recognise causes of dermatitis in a leg ulcer patient. - Formulate a differential diagnosis. - Record an appropriate physical examination. - Recognise how to manage leg ulcer patients with dermatitis appropriately.
Hidradenitis Suppurativa	This session provides an overview of the diagnosis, medical and surgical management of hidradenitis suppurativa.	- Describe the diagnostic features of hidradenitis suppurativa. - Explain the medical management of hidradenitis suppurativa. -List the indications for surgery in hidradenitis suppurativa.

Session	Description	Learning Outcomes
		- Describe the principles of surgery for hidradenitis suppurativa.
Leprosy	This session explores clinical leprosy for dermatologists.	- Know how leprosy is acquired. - Recognise the cardinal signs of leprosy. - Recognise other clinical presentations of leprosy. - Know the different classifications of leprosy. - Know the anti-mycobacterial treatment of leprosy. - Recognise the clinical features of leprosy reactions. - Know the treatment of leprosy reactions. - Know the sequelae of nerve damage in leprosy. - Know the management of permanent nerve damage in leprosy. - Recognise the psychological problems associated with leprosy.
Lyme Disease	This session describes Lyme disease using a case history as the basis for a discussion covering the epidemiology, risk factors, clinical features and management of Lyme disease or Lyme borreliosis (LB).	- Identify risk factors for Lyme borreliosis transmission. - Recognise the classical dermatological and later systemic features of borreliosis. - Identify the appropriate management steps and the time course for intervention.
Subcutaneous Mycoses and Other Mycoses	This session describes subcutaneous and systemic mycoses. The clinical features, histopathology, differential diagnosis , prognosis and therapy will be explained.	- Recognise the features of subcutaneous and other deep mycoses. - Identify current concepts underlying aetiology and treatment of these conditions. - Recognise the diagnostic criteria associated with these conditions and how this relates to requesting appropriate investigations. - Identify the role of the dermatologist in the multi-disciplinary management of these complex patients.
Infectious Blisters	This session describes a patient with a blistering eruption. It illustrates the steps required to establish the diagnosis and describes the institution of an appropriate management plan.	- Propose a differential diagnosis for a patient with multiple small blisters. - List the appropriate investigations for such a patient. - Interpret the results of the investigations.

Session	Description	Learning Outcomes
		- Build a management plan for a patient with herpes simplex or varicella zoster virus infection. - Explain the benefits of multidisciplinary working at various stages of these conditions.
Cutaneous Leishmaniasis	This session discusses cutaneous leishmaniasis. The pathogenesis of the condition is explained and the variety of clinical manifestations are described. Methods of diagnosis are covered and treatment options discussed.	- Identify the causes of leishmaniasis and how it is transmitted. - Appreciate the variety of clinical presentations of leishmaniasis. - Demonstrate an awareness of the importance of infecting species and geographical location. - Demonstrate a knowledge of the various different cutaneous presentations. - Describe the treatment options available and determine which are most appropriate for individual cases.

Treat Antibiotics Responsibly, Guidance, Education, Tools (TARGET) – PHE and RCGP

Session	Objectives/Learning outcomes
Skin infections e-learning	- Skin infections are commonly seen in general practice. With ever increasing rates of antibiotic resistance, it is important for GPs to feel confident about making a diagnosis and to understand when antibiotic treatment is indicated. - This course describes common presentations of bacterial, viral and fungal skin infections and outlines their management.

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Session	Objectives/Learning outcomes
Cellulitis	- Describe the role of clinical assessment, investigations and management for conditions such as impetigo, cellulitis, erysipelas and necrotising fasciitis. - Describe the role of antibiotic therapy for each of the conditions mentioned above.

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Musculo-skeletal system, vascular and plastics

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Septic Arthritis	This session describes the symptoms and signs of septic arthritis in adults with brief mention of septic arthritis in children. Common causes and sites of septic arthritis will be given. Investigations used in diagnosis will be provided together with optimal diagnostic pathway. Features of the imaging investigations will be described and illustrated and finally a differential diagnosis will be given.	- Describe the pathogenesis, symptoms and signs of septic arthritis, imaging features of investigations used in the diagnosis and clinical management. - Identify the condition to correctly interpret and report imaging investigations used in this condition. - Interpret septic arthritis on plain radiographs, isotope bone scans and magnetic resonance imaging by the use of picture archiving and communications system lists and departmental cases. - Correctly interpret imaging examinations and provide appropriate differential diagnosis and a sensible investigation algorithm.
The Acutely Limping Child	This session explores conditions that will result in a child presenting with a limp. It discusses the value of each imaging modality in the evaluation of a limping child. It also highlights the importance of excluding septic arthritis in all cases.	- Recognise the limitations of each imaging modality in assessing the limping child. - Recall the importance of clinical examination when assessing the limping child. - Discuss the importance of recognising septic arthritis. - Differentiate between transient synovitis and septic arthritis. - Identify Perthes disease and slipped upper femoral epiphysis. - Define the appropriate approach to imaging of the limping child.
Acute Osteomyelitis	This session discusses the role of radiology in the diagnosis and management of acute osteomyelitis.	- List the ways that the pathogenesis of acute osteomyelitis relates to radiological findings. - Diagnose acute osteomyelitis on all imaging modalities in adults and children. - List the most common locations of acute osteomyelitis in all age groups.

Session	Description	Learning Outcomes
		- Define the differential diagnosis in equivocal cases.
Chronic Osteomyelitis	This session discusses the use of plain films, nuclear medicine, CT and MRI for the imaging of chronic osteomyelitis. The spectrum of relevant disease is reviewed and the efficacy of radiological techniques is also discussed.	- Describe the key plain radiographic features of chronic osteomyelitis. - Discuss the role of CT and MRI in imaging chronic osteomyelitis. - Describe the differential diagnoses of certain presentations of chronic osteomyelitis.
Chronic Osteomyelitis in the Lower Limb	This session describes the assessment and surgical management of chronic osteomyelitis in the lower limb, including the role of vascularised soft tissue transfer.	- Describe a systematic approach to the assessment of a patient with chronic osteomyelitis. - Describe how to debride infected tissues in chronic osteomyelitis. - Explain the role of vascularised soft tissue in the treatment of chronic osteomyelitis.
Hip Pain and Limp in the Child	This session explores the recognition of the major causes of hip pain in a child, their various clinical presentations, as well as the radiological manifestations thereof.	- Identify the various causes of hip pain in a child depending on clinical presentation and age group. - Interpret the appropriate investigation/s so as to assess the problem further. - Describe current management and treatment options for the various conditions.
Diabetic Foot	This session provides an introduction to the basic pathophysiology of midfoot pain in a diabetic. The imaging modalities required to evaluate these changes are described.	- Recognise pathology of the diabetic foot and its complications, including Charcot arthropathy. - List and identify the most appropriate methods to optimise diabetic foot imaging. - Recognise the imaging features of diabetic foot and its complications. - State current magnetic resonance imaging (MRI) techniques. - Identify four features of a Charcot arthropathy with plain film x-rays and MRI.
Initial Management of Open Fractures of the Lower Limb	This session describes how to assess patients with open fractures of the lower limb and offers guidance on the measures that should be taken to manage such wounds prior to first excision.	- Describe a systematic assessment of open fractures of the lower limb. - Explain how to manage the wound prior to first excision. - State the BAPRAS/BOA recommendations for antibiotics.

Session	Description	Learning Outcomes
MRSA in Plastic Surgery Patients	This session discusses the impact of new strains of MRSA on modern practice, identifying the groups at greatest risk from MRSA and the types of antibiotics that are active against MRSA.	- Identify individuals at greatest risk of MRSA colonisation. - Describe the potential consequences of MRSA infection. - Name the agents that should be prescribed for MRSA eradication. - List the antibiotic agents that are active against MRSA.

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Urinary tract infections

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Infections of the Kidneys	This session discusses the various types of urinary tract infections (UTIs), common causes and presentations of renal infections related to their imaging findings. It also discusses evaluation and management based on the severity of the infection.	- List the various types of UTIs and describe their imaging findings. - Recognise the common causes and presentations of renal infections related to their imaging findings. - Evaluate the severity of the infection based on radiological appearances. - Advise the next most appropriate investigation or treatment.
Investigation and Management of UTI Causing Delirium	This session discusses the investigation and management of delirium precipitated by urinary tract infection (UTI), including risk factors and specialist clinical assessment.	- Describe the pathophysiology of delirium. - Recognise the risk factors for the development of delirium. - Outline the principles of management.
Urinary Tract Infections	This session discusses the urinary tract infections that are encountered in the emergency department. It discusses their diagnosis, complications and treatment.	- Explain the usefulness of urine dipsticks as a diagnostic test for UTI. - Investigate the patient with UTI and pyelonephritis. - Describe the common pathogens & antibiotic sensitivities.
Urinary Tract Infections	This session discusses the investigation and management of urinary tract infections (UTIs) in men and women at a level suitable for an enhanced practitioner. Management of recurrent UTIs is also discussed.	- List the classification of UTIs. - Recognise the symptoms and signs of UTIs. - Describe the role and interpretation of urine culture results. - Select appropriate treatment for UTIs and explain the rationale behind it. - Decide which patients need further investigations. - Outline options for patients with recurrent UTIs.
Urinary Incontinence in Women	This session takes you through the diagnosis and treatment of urinary incontinence. Urinary incontinence is a very common problem for women, often presenting to a primary care professional.	- Identify factors in the history which will enable you to advise and refer the woman appropriately. - Describe how to perform an initial assessment including pelvic examination. - Recommend lifestyle changes.

Session	Description	Learning Outcomes
	Therefore, this session will enable you to better help your patients.	- Discuss and describe when to carry out referral to appropriate primary or secondary care providers.
Urinary Tract Infections in Children	This session explores the diagnosis and treatment of urinary tract infections in children, as well as who needs further investigation.	- Identify the indications for obtaining urine specimens from children. - Interpret the results of investigations and determine appropriate follow up and investigation. - Describe the procedures used to obtain urine samples at different ages and the limitations and strengths of each. - Demonstrate knowledge of the appropriate first line management of UTIs in children.
Urinary Tract Infection (Children)	This session discusses the rationale for the current practice guidelines regarding the imaging of paediatric urinary tract infections (UTIs). Guidelines from the National Institute for Health and Care Excellence (NICE) are compared with those from the American Academy of Pediatrics (AAP) and a range of imaging modalities are discussed.	- Identify appropriate investigation procedures in given cases of UTI in accordance with NICE recommendations for UK practice. - Select appropriate imaging modalities in given cases of UTI in accordance with NICE recommendations for UK practice. - Make appropriate decisions in complex cases that are outside the remit of the NICE guidelines Describe the modalities available for the imaging of paediatric UTIs. - Recognise normal and abnormal imaging appearances. - Make correct diagnoses in given cases based on history and images.
Urinary Tract Calculi in Children	This session discusses the main causes of urinary tract calculous disease in children, and the imaging techniques used to detect it.	- List the common causes of urinary tract calculi in children. - Describe the ultrasound characteristics of urinary calculi in children. - Describe the usual imaging approach to calculi in young patients.
Management of Incontinence and Urinary Catheters	This session explores the issues surrounding the use of indwelling urinary catheter devices. Later sections investigate the complications that may arise and offer guidance on how to care for people who suffer from incontinence.	- Describe how an indwelling urinary catheter works. - Describe the principles of replacing a catheter bag. - Identify some of the complications associated with urinary catheterisation. - Describe how to care for people with incontinence.

Session	Description	Learning Outcomes
Promoting Best Practice in Catheter Care	This session has been developed as a generic training package suitable for staff working in all care environments. Staff should be aware that there may be challenges in their working environment (e.g. for Community Nurses working in a patient's home) that they will need to adapt to.	- Explain the risks of catheterisation. - Describe the appropriate clinical indications for catheterisation. - Select the appropriate catheter and accessories for your patient. - Describe the principles of good catheter maintenance. - Identify solutions to common problems with catheterisation. - Identify the risk factors for CAUTI and explain how to prevent these.
Continence and Catheter Care	This session comprises two sessions: Promoting best practice in continence care and Promoting best practice in catheter care aimed at nursing staff and health care assistants across all care settings, to improve knowledge and awareness of all aspects of continence and catheter care. The e-learning sessions should be used as an adjunct to face-to-face teaching sessions on catheterisation.	The programme includes discussion of the different types of incontinence and the therapies and treatments that can be offered to patients. Emphasis will be placed on avoiding catheterisation and on strategies for reducing the risk of catheter acquired urinary tract infection (CAUTI) in situations where catheterisation is unavoidable.
Acute Urinary Retention	This session explores the common presentations of urinary retention and its management in the emergency department. It also covers the common problems that can occur in patients who have in-dwelling catheters.	- Diagnose urinary retention. - Explain why a full clinical and rectal examination should always be conducted. - Describe investigations that are necessary in a patient with retention and how to evaluate them. - Identify the complications of urethral catheterisation and be able to respond to them whilst awaiting specialist urological input. - Summarise the evidence base relevant to the further management of a patient in acute urinary retention.
AKI - Urinary Obstruction	This session discusses Urinary obstruction. Urinary obstruction is a treatable cause of acute kidney injury. This session describes the key issues in history taking, examination, investigation, and management that are important to ensure cases of	- Diagnose the presence of urinary obstruction as a cause of acute kidney injury. - Describe the different causes of urinary obstruction that can cause acute kidney injury.

Session	Description	Learning Outcomes
	obstructive acute kidney injury are not missed, and are appropriately managed when discovered.	- Detail an appropriate strategy for investigation and management of a patient presenting with acute kidney injury due to urinary obstruction.
Infections of the Bladder, Prostate and Urethra	This session describes the imaging features of infection in the bladder, prostate and urethra.	- List the various types of lower urinary tract infections. - Recognise the common causes and presentations of cystitis, prostatitis and urethritis. - Evaluate the severity of the infection based on radiological appearances. - Advise the next most appropriate investigation or treatment.

Treat Antibiotics Responsibly, Guidance, Education, Tools (TARGET) – PHE and RCGP

Session	Objectives/Learning outcomes
Urinary tract infections e-learning	- Urinary tract infections are frequently seen in primary care. What may seem initially a simple diagnosis, on closer inspection and reflection can be quite complex. - This course explains the importance and appropriateness of diagnostics and offers advice on how to assess and treat patients with a range of urinary symptoms. It encourages reflection on how to minimise antibiotic resistance and offers 'real-life' cases.
Prescribing in UTI webinar	- Understanding that many patients with urinary symptoms do not have a proven UTI, so may not need antibiotics - Understanding that antibiotic resistance to first line UTI antibiotics such as trimethoprim is increasing. - Intention to carefully assess women's urinary symptoms to determine the likelihood of UTI. - Intention to use nitrofurantoin first line for most women with acute uncomplicated UTI. - Knowledge of the value of Pivmecillinam for the treatment of UTI, especially in the elderly. - Intention to encourage self-care in the management of women with urinary symptoms.

Other resources

Oxford AHSN: Good hydration and urine infections (Part 1, 2, 3, 4, 5 & 6) and To Dip or Not To Dip Training Animation and E-learning.

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Genitourinary and gynaecological infections

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Acute and Chronic Non-specific Urethritis: Specialist Management	This session covers a more specialist approach to the management of non-specific urethritis where chlamydia and gonococcal tests are negative or first-line therapy has failed.	- Investigate chlamydia-negative non-gonococcal urethritis. - Describe the pathogenesis of urethritis, including non-infective causes. - Give appropriate information to patients who are diagnosed with non-gonococcal urethritis. - Prescribe antibiotics appropriately for recurrent urethritis. - Manage chronic healthcare-seeking behaviour, avoid dependency and increase patient self-efficacy.
Male Urethritis: Diagnosis and Management	This session covers the investigation and management of male urethritis at a level suitable for enhanced practitioners. Appropriate use of microscopy is discussed.	- Describe how to appropriately manage the initial presentation of symptomatic male urethritis. - Explain the appropriate use of near patient microscopy. - List the information required for patients diagnosed with urethritis regarding treatment, partner notification and sexual abstinence.
Vaginal Discharge	This session cover the common and/or important causes of vaginal discharge, as well as other symptoms and signs. Diagnostic techniques needed to identify the cause, and when empirical treatment is appropriate will also be covered.	- Describe the common and/or important causes of vaginal discharge in adults. - Recognise other symptoms and signs associated with vaginal discharge. - Outline when use of empirical treatment is appropriate. - List the preferred diagnostic tests for identifying the various infective causes of vaginal discharge. - Identify the infective causes that require management of the sexual partner(s).
Trichomonas Vaginalis	This session covers the natural history, clinical presentation and management of trichomonal infection in adults, excluding infection refractory to treatment.	- Describe the presentation of trichomoniasis in adults. - Describe the recognised complications of trichomoniasis. - Describe the performance of diagnostic tests for trichomoniasis.

Session	Description	Learning Outcomes
		- Identify treatment regimens for the effective management of Trichomonas vaginalis. - Describe the management of sexual partner(s) of infected individuals.
Bacterial Vaginosis	This session covers the natural history, clinical presentation and management of bacterial vaginosis (BV) in adults, excluding infection refractory to treatment.	- Describe the predisposing factors for, and the presentation of bacterial vaginosis in adults. - Explain the recognised complications of bacterial vaginosis. - List the preferred diagnostic tests for bacterial vaginosis. - Identify treatment regimens for the effective management of bacterial vaginosis. - Describe any management of sexual partners.
Vaginal Candida Albicans and Other Yeast Infections	This session explores Vulvovaginal candidiasis (VVC), otherwise called 'candida'. It discusses the predisposing factors, presentation, testing and treatment of candida, including that of non-albicans species. It also describes other yeast infections in adult women.	- Describe the predisposing factors for, and the presentation of candida and other yeast infections in adult women. - Describe the recognised complications of Candida albicans and other yeast infections. - List the preferred diagnostic tests for Candida albicans and other yeast infections. - Identify treatment regimens for the effective management of vaginal Candida albicans and other yeast infections. - Describe any management of sexual partners.
Recurrent BV, Candida and TV	This session covers the aetiology, natural history, predisposing factors, clinical presentation and management of recurrent bacterial vaginosis, candidiasis, and trichomoniasis infection in women.	- Describe the frequency and presentation of recurrent bacterial vaginosis, candidiasis, and trichomoniasis in women. - Identify the predisposing factors for recurrent infections. - List the preferred diagnostic tests for recurrent bacterial vaginosis, candidiasis, and trichomoniasis. - Identify treatment regimens for the effective management of recurrent bacterial vaginosis, candidiasis, and trichomoniasis. - Describe the management of sexual partners.
Infective Causes of Vulvitis	This session covers the common and/or important infective causes of vulvitis and their management,	- Describe the common and/or important causes of infective vulvitis in adults.

Session	Description	Learning Outcomes
	other symptoms and signs associated with infective vulvitis, diagnostic techniques needed to identify the cause, and when empirical treatment is appropriate.	- Describe other symptoms and signs associated with infective vulvitis. - List the preferred diagnostic tests for identifying the various infective causes of vulvitis. - Identify treatment regimens for the effective management of infective vulvitis. - Describe when use of empirical treatment is appropriate. - Identify the infective causes that require management of the sexual partner(s).
Infective Causes of Balanitis	This session covers the common and important infective causes of balanitis and their management, other symptoms and signs associated with infective balanitis, diagnostic techniques needed to identify the cause, and when empirical treatment is appropriate	- Describe the common and/or important causes of infective balanitis in adults. - Describe other symptoms and signs associated with infective balanitis. - List the preferred diagnostic tests for identifying the various infective causes of balanitis. - Identify treatment regimens for the effective management of infective balanitis. - Describe when use of empirical treatment is appropriate. - Identify the infective causes that require management of the sexual partner(s).
Genital Lumps	This session explains the clinical approach to genital lumps and lists the key differential diagnoses.	- State elements of history taking required to assess a patient with a genital lump or lumps. - Describe necessary examination elements and possible findings in a patient with a genital lump. - List the differential diagnosis of genital lumps. - Recognise indications for, and understand how to perform a skin biopsy. - Identify situations in which consultant advice or specialist referral is appropriate.
Pelvic Inflammatory Disease	This session provides an overview of pelvic inflammatory disease (PID), describing presentation and how it differs from other pelvic and gynaecological conditions. It explains how to	- Describe bacterial causes of PID, and prevalence in various communities.

Session	Description	Learning Outcomes
	investigate PID in patients, what tests are appropriate and how to identify when patients require further referral. The treatment and management options are discussed.	- Identify key presenting features of pelvic inflammatory disease and how to distinguish this clinically from other pelvic and gynaecological conditions. - List clinical investigations and laboratory tests to perform in suspected PID. - Recognise when a patient requires referral for specialist in-patient management. - Select appropriate initial antimicrobial therapy giving reasons for therapy choice. - Give appropriate information to patients diagnosed with PID regarding treatment, partner notification and sexual abstinence, and deal with questions about fertility concerns.
Acute Pelvic Pain and Sepsis	This session covers the approach to specialist management of severe acute pelvic inflammatory disease (PID) and intra-abdominal sepsis. It includes in-patient investigations and laparoscopic findings.	- Recognise severe acute PID and list criteria for in-patient admission. - Exclude other causes of acute abdominal pain in women by history, examination and appropriate investigations. - Describe basic resuscitation and support measures for a patient with intra-abdominal sepsis pending admission. - Explain the role of laparoscopy in diagnosis. - Recommend appropriate parenteral anti-microbial regimens.
Chronic Pelvic Pain in Women	This session covers the specialist approach to chronic pelvic pain (CPP) in women, including suspected chronic pelvic infection and endometriosis.	- Identify differential diagnoses of chronic pelvic pain. - Explain the role and interpretation of imaging and laparoscopy in investigation. - Initiate management in your setting for suitable patients. - Refer on those that require specialist consultation.
Prostatitis and Male Pelvic Pain	This session describes the presentation of acute bacterial prostatitis, chronic bacterial prostatitis and chronic pelvic pain syndrome.	- Recognise, investigate and advise on the management of acute bacterial prostatitis. - Recognise, investigate and manage chronic bacterial prostatitis, differentiating this from other genitourinary conditions. - Diagnose and manage chronic pelvic pain syndrome (CPPS) in males.

Session	Description	Learning Outcomes
		- Describe the complex potential aetiology of CPPS. - Specify how to administer the National Institutes of Health (NIH) prostatitis symptom index, and state its place in management. - Differentiate CPPS from other genitourinary conditions. - Recognise when to refer a patient to the urology service and/or pain clinic.

Royal College of Emergency Medicine

Session	Objectives/Learning outcomes
Acute Bacterial Prostatitis Podcast	- Understand the presentation of acute bacterial prostatitis. - Describe the causes, examinations, investigations and treatments. - Describe the common bacterial pathogens and associated antibiotic treatments encountered.

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Sexually transmitted infections

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Gonorrhoea: Natural History and Management	This session discusses the key aspects of gonorrhoea, its presentation and management.	- Describe the clinical presentation of gonorrhoea Undertake appropriate investigations. - Manage uncomplicated gonorrhoea. - Describe factors affecting gonorrhoea prevalence and antibiotic resistance.
Disseminated Gonorrhoea	This session covers recognition, diagnosis and management of disseminated gonorrhoea (DGI) at a specialist level. Current knowledge about pathogenesis of gonococcal infection, including host defence and virulence factors, is discussed.	- Recognise the limitations in our understanding of the pathogenesis of DGI. - Recognise the greater frequency of DGI in certain sections of the community. - Recall the epidemiology and varied presentation of DGI. - Recognise the consequences of involvement of organs other than skin and joints. - Select appropriate methods for diagnosis and exclusion of DGI. - Advise on appropriate antibiotic regimens for disseminated gonorrhoea.
Chlamydia Trachomatis: Natural History and Management	This session covers the pathogenesis and management of uncomplicated genital chlamydia, including antibiotic choice and appropriate advice and partner notification. The level is suitable for enhanced practitioners.	- Describe the pathogenesis of infections by Chlamydia trachomatis, including life-cycle, virulence and host-defence mechanisms. - List uncomplicated presentation of chlamydia genital tract infection. - Manage chlamydia genital tract infection by identifying appropriate choice of antibiotics for the condition. - Give appropriate information to patients diagnosed with chlamydia regarding treatment, partner notification and sexual abstinence.
Epididymitis	This session covers the approach to epididymitis with a suspected sexually transmitted infection	- Describe the full range of causes of epididymal pain and swelling, including non-sexual infections.

Session	Description	Learning Outcomes
	(STI) cause, at a level suitable for enhanced practitioners.	- List the important differential diagnoses. - Recognise when urgent urological referral to exclude torsion or tumour is indicated. - Select appropriate investigations for STIs. - Select an appropriate first line antimicrobial regimen and give other management advice. - Give appropriate information to patients diagnosed with sexually-related epididymitis regarding treatment, partner notification and sexual abstinence.
STIs in the Pharynx and Oral-genital STI Transmission	This session covers the specialist investigation and management of sexually-transmitted oral and pharyngeal infections. Pathogenesis and oral transmission risks of key STI pathogens are discussed.	- Know the prevalence of selected STIs in the pharynx in different populations. - Select appropriate laboratory tests for use at the pharyngeal site, demonstrating awareness of commensal organisms. - Select appropriate anti-microbial therapy for pharyngeal STIs, understanding why this may differ from infection at other sites. - Advise patients about risk of transmission of STIs by the oral-genital route.
Ano-rectal STIs	This session covers the specialist investigation and management of ano-rectal and enteric sexually transmitted infections, including the selection of an appropriate range of tests. Appropriate surgical and medical referral criteria will also be covered.	- Recall the prevalence of selected STIs in the rectum in different populations. - Select appropriate laboratory tests for ano-rectal investigation, particularly in acute proctitis. - Specify when to use blind sampling and when and how to use a proctoscope. - Select appropriate anti-microbial therapy for rectal STIs, understanding why this may differ from infection at other sites. Investigate and manage sexually-associated enteric infections Advise patients about the risk of transmission of STIs from anal sex

Session	Description	Learning Outcomes
		Advise appropriate follow-up testing for associated blood-borne viruses
Sexually-acquired Reactive Arthritis	This session covers the aetiology, clinical presentation and management of sexually-acquired reactive arthritis (SARA). The session offers recommendations on initial treatment regimens, onward referral and likely outcomes.	- Describe the clinical presentations of SARA as part of the spectrum of the reactive arthropathies. - State causative organisms. - Recognise the different organ systems involved. - Describe appropriate investigations. - Outline appropriate initial management. - Report the likely outcomes of the condition.
STIs in Pregnancy	This session describes the sexually transmitted and other genital infections that can affect pregnancy. It also explains the diagnosis and where it may differ between pregnant and non-pregnant patients, complications, treatment and management considering the relevance of the trimester and risk to the foetus and mother.	- Describe the antenatal screening programme for STI in pregnancy. - Summarise the immunological and physiological changes in pregnancy that influence the response to STIs. - Describe special considerations for management of STIs in pregnancy. - Describe the approach to the pregnant woman with symptoms. - List the STI and other genital infections that can affect pregnancy. - Discuss interpretation of results for specific infections and their implication for management. - Describe the complications to the mother and impact on the foetus of specific infections.
Antenatal Screening for Syphilis	This session describes the antenatal screening program for syphilis that exists in the UK and the rationale for having such a program. We shall also highlight some of the challenges that face clinicians in administering such a program in the UK and globally.	- Describe the epidemiology of syphilis in pregnancy and its burden in the UK and globally. - Describe the antenatal syphilis screening programme in the UK. - List the treatment options for syphilis in pregnancy. - Recognise the consequences of untreated syphilis in pregnancy. - Explain the follow-up of pregnant women treated for syphilis.

Session	Description	Learning Outcomes
STIs in the Newborn	This session covers which sexually transmitted pathogens can affect the newborn and how they can be diagnosed and treated. It also discusses the consequences on the parents and the follow-up and management.	- List the sexually transmitted bacterial, viral and protozoal infections that can affect the newborn and identify which are notifiable. - For each infection describe aetiology, transmission risk, mode of transmission, presentation and how to diagnose these infections including how investigations in neonates differ from adults. - Describe management (excluding detail about antibiotics). - Describe any complications. - Decide what follow-up is required.
STIs in Prepubertal Children	This session discusses specific issues related to the presentation, diagnosis and management of sexually transmitted infections (STIs) in pre-pubertal children. It also examines factors which place children at risk of STIs.	- Recognise the presentations of STIs in prepubertal children. - Describe the routes of acquisition of STIs in children. - Describe appropriate investigations and management of a child with a possible STI. - Recognise your personal limitations in advising on the significance of STIs in children and the need for further advice.
STIs in Postpubertal Children and Adolescents	This session discusses specific adolescent issues related to the management of sexually transmitted infections (STIs) in postpubertal children and young people. It reviews recent STI trends in young people, identification of factors which place young people at high risk of STIs, and sexual health promotion.	- Identify factors which place young people at high risk of acquiring STIs. - Recognise the epidemiology of sexually transmitted infections (STIs) in young people. - Identify specific adolescent issues relating to the presentation, diagnosis and management of STIs. - State how using health promotion strategies such as one to one behavioural modification techniques can reduce STIs and pregnancy risk in young people.
Prescribing for STI Treatment for Pregnant Women, Women who are Breastfeeding and Children	This session covers the generic principles which apply when prescribing for pregnant women, women who are breastfeeding and in children. Prophylactic medication, where applicable, and treatment for specific STIs are considered. All doses stated in this session are from the BNF and	- Describe the generic principles which apply when prescribing for pregnant women, women who are breastfeeding and children. - Describe the potential risks in prescribing for the mother and fetus and how to limit them.

Session	Description	Learning Outcomes
	BASHH. Please be aware that all the information in this session was correct at the time of publishing and that new data/evidence mean that some information provided could change. As this is a rapidly changing field, always refer to the most up-to-date references which can be found in the Resources listed in this session.	- Detail the prophylactic regimes for the sexually transmitted infections (STIs), including post exposure prophylaxis (PEP) for HIV, that can affect pregnant women, women who are breastfeeding and children. - List the treatments for the STIs that can affect pregnant women, women who are breastfeeding and children. - Recognise the limitations in evidence for STI treatments in pregnant women, women who are breastfeeding and children.

Other resources

British Association for Sexual Health and HIV: STI / HIV course

RCGP Sexually Transmitted Infections in Primary Care

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Sometimes,
mother's care is
est medicine.
C·A·USE
CDC

Sepsis

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Assessment and Differential Diagnosis of Sepsis	This session covers how to assess a patient with suspected sepsis in terms of history, clinical examination and investigations and recognize the differential diagnoses in suspected sepsis both in hospital.	- Describe the initial assessment of a patient. - Explain how to assess a patient with suspected sepsis. - Describe the initial investigation of a patient with suspected sepsis.
Management of the Septic Patient	This session covers the sepsis resuscitation care bundle and summarises the evidence regarding specific management strategies.	- Identify patients with sepsis and septic shock. - State how to conduct prompt resuscitation of the septic patient. - List the tasks that comprise the 'Sepsis Six' bundle. - Explain when intensive care unit support is required.
Managing Sepsis	This session explores the presentation and immediate management of the patient with sepsis.	- Recognise the disease continuum of sepsis in adults. - State the patient groups most at risk from sepsis. - Recognise the importance of haemodynamic assessment in the early detection of acute illness. - Explain the physiology of intravascular volume depletion in sepsis. - Identify the first line management of sepsis and the time frame for implementation of the sepsis care bundle. - Recognise a failure to respond to treatment and the need for urgent escalation to a senior and to critical care.
Neutropenic Sepsis with Oral Ulceration	This session provides the definition, investigation and management of neutropenic sepsis and associated oral ulceration.	- Define neutropenic sepsis. - Describe the management strategy of treating a neutropenic sepsis patient. - Describe the causes and management of oral ulceration.
Overview of Sepsis	This session is aimed at all out of hospital clinicians, GPs, Nurses, Pharmacists, Paramedics, Community Midwives and those providing urgent or unscheduled care. It will	- Describe the differences between infection, sepsis and septic shock. - Recognise the scale and impact of sepsis within the UK.

Session	Description	Learning Outcomes
	provide an introduction to key facts about sepsis and outlines the size of the problem, common community presentations and key actions that influence outcomes.	- Recall the frequency of community and hospital derived sepsis. - Identify key features that should alert the clinician to the possibility of sepsis in a patient with infection. - List potential strategies that can influence sepsis admissions and deaths. - Describe the urgency of treatment to influence mortality particularly within the septic shock sub-group.
Adult Sepsis	This session covers non pregnant adults and children aged 12 years and over. It is aimed at all out of hospital clinicians, GPs, Nurses, Paramedics, Community Midwives and those providing urgent or unscheduled care. It will cover the subtle ways in which sepsis may present and highlight the history, examination and the management of the patient with sepsis.	- Describe various ways patients with sepsis may present and what to cover in the history. - List the structured set of observations to support clinical decision making and to help stratify risk. - Recall common pitfalls in diagnosis. - Identify which patients with sepsis are highest priority for urgent admission and know about the early management of the patient with sepsis.
Childhood Sepsis	This session covers children aged 11 years and under. For children aged 12 years and over refer to the adult session. The session is aimed at all out of hospital clinicians, GPs, Nurses, Paramedics, Community Midwives and those providing urgent or unscheduled care. It will provide an introduction to key facts about childhood sepsis. It outlines the community presentations and key actions that influence outcomes.	- Describe sepsis in the context of childhood. - Recognise the difference between infection, sepsis and septic shock. - Recall the prevalence of childhood sepsis. - Describe the physiological changes in children with sepsis. - Identify key features that should alert clinicians to the possibility of sepsis in a child with infection - Recognise the urgency of treatment for children with a high risk of serious illness. - List the presentations, ranges of normal physiological signs, and outcomes at different ages. - Describe preventative strategies, including vaccination.
Complex Sepsis Issues and Future Development	This session is aimed at all out of hospital clinicians, GPs, Nurses, Pharmacists, Paramedics, Community Midwives and those providing urgent or unscheduled care. It will explore neutropenic sepsis and sepsis in	- Recognise the importance of neutropenic sepsis. - Describe the relevance of sepsis in maternity cases. - Identify potential ways of reducing sepsis cases. - Recall the role of near patient testing in the confirmation of sepsis.

Session	Description	Learning Outcomes
	maternity, potential opportunities for prevention and some of the recent changes and innovation relevant to sepsis.	- Discuss the role of physiological scoring systems in the definitions and management of sepsis.
Sepsis, Care Homes and the Frail Elderly	This session is aimed at all out of hospital clinicians, GPs, Nurses, Pharmacists, Paramedics, Community Midwives and those providing urgent or unscheduled care. It will provide an introduction to key facts about sepsis and outlines the size of the problem, common community presentations and key actions that influence outcomes.	- Recognise sepsis presentation in the elderly. - List preventative strategies, including vaccination. - Describe effective treatment whilst being mindful of antimicrobial stewardship. - Recall the complexities of managing sepsis at the end of life. - Describe a holistic approach to sepsis in the elderly.
Paediatric sepsis	This session is a case based guide aimed at supporting clinicians in the recognition and treatment of sepsis in children and involves the stories of three children, their assessment, experiences and treatment.	Includes the general principles for the safe assessment of a sick child, components of the consultation and assessment, specific factors to be considered in primary and secondary care settings and interpretation of investigations amongst others.

Meningitis Research Foundation

Session	Objectives/Learning outcomes
Lessons from research for doctors in training: recognition and early management of meningococcal disease in children and young people	- To use clinical examples to teach about the signs of sepsis and meningitis. - To clarify the important differences between meningococcal meningitis and sepsis. - To outline the basic management of meningococcal sepsis and meningitis in line with the algorithm '*Management of Meningococcal Disease in Children and Young People*'. - To describe the clinical pathophysiology of meningococcal disease. **Please see:** E-learning resource for the management of bacterial meningitis in infants under three months of age.

Further resources for all health professionals can be found on the Meningitis Research Foundation Resource Webpage.

Royal College of Emergency Medicine

Session	Objectives/Learning outcomes
Paediatric sepsis blog	Understand how to recognise paediatric sepsis by appreciating: - What is different about recognising sepsis in children? - What has been shown to be unhelpful in screening for sepsis in children? - What has been shown to be valid in an Emergency Department setting? - What are the high risk patient groups or situations I might encounter? - What do experienced clinicians believe to be of value when making the decision to discharge or treat?
Sepsis Guidelines Podcast	- Describe the NICE definitions of sepsis. - Describe the identification of risk factors, risk stratification and in-hospital care. - Understand the role of fluid administration and vasopressors in patients with sepsis.
Sepsis in the ED Podcast	- Describe the recognition and management of patients presenting with sepsis in the emergency department (ED).
Maternal sepsis: be aware and beware!	- Describe the management of maternal sepsis in the emergency department.

Other resources

UK Sepsis Trust (UKST) resources for health professionals

NHS RightCare Scenario: sepsis

RCGP sepsis clinical toolkit

National Early Warning Scores (NEWS 2) e-learning and film.

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NHS

Paediatrics

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Infection	This session aims to equip practitioners with information so that they can advise on infection-related public health issues and vaccination-related concerns in primary schools.	- Summarise relevant issues around hygiene in the primary school setting. - Review immunisation and effective interventions for immunisation in children of primary school age. - Manage both teacher and parental awareness of, and responses to, infectious disease. - Describe the management of cases/outbreaks of meningitis, diarrhoea and vomiting, conjunctivitis, impetigo and other diseases (including the social impact, transmission and management of lice and scabies).
Meningitis in Children	This session describes the prevalence and impact of meningitis. You will learn to recognise the symptoms and how to conduct immediate management of a child with suspected meningococcal disease including administering intra-muscular penicillin.	- Recognise the symptoms and signs of meningitis in children. - Describe the role of the primary care practitioner in the immediate management of a child with suspected meningitis. - Identify common problems in the diagnosis of meningitis in children. - List the long-term implications of meningitis in children.
Recurrent Chest Infections	The session covers recurrent chest infections in children and includes chest infections which are slow to resolve.	- Name important causes of recurrent chest infections in children. - Recognise signs of infection on chest radiographs. - Review serial chest radiographs. - Suggest further imaging.
Septic Arthritis	This session describes the symptoms and signs of septic arthritis in adults with brief mention of septic arthritis in children. Common causes and sites of septic arthritis will be given. Investigations used in diagnosis will be provided together with	- Describe the pathogenesis, symptoms and signs of septic arthritis, imaging features of investigations used in the diagnosis and clinical management. - Identify the condition to correctly interpret and report imaging investigations used in this condition.

Session	Description	Learning Outcomes
	optimal diagnostic pathway. Features of the imaging investigations will be described and illustrated and finally a differential diagnosis will be given.	- Interpret septic arthritis on plain radiographs, isotope bone scans and magnetic resonance imaging by the use of picture archiving and communications system lists and departmental cases. - Correctly interpret imaging examinations and provide appropriate differential diagnosis and a sensible investigation algorithm.
The Acutely Limping Child	This session covers those conditions that will result in a child presenting with a limp. It discusses the value of each imaging modality in the evaluation of a limping child. It also highlights the importance of excluding septic arthritis in all cases.	- Recognise the limitations of each imaging modality in assessing the limping child. - Recall the importance of clinical examination when assessing the limping child. - Discuss the importance of recognising septic arthritis. - Differentiate between transient synovitis and septic arthritis. - Identify Perthes disease and slipped upper femoral epiphysis. - Define the appropriate approach to imaging of the limping child.
Urinary Tract Infections in Children	This session explores the diagnosis and treatment of urinary tract infections in children, as well as who needs further investigation.	- Identify the indications for obtaining urine specimens from children. - Interpret the results of investigations and determine appropriate follow up and investigation. - Describe the procedures used to obtain urine samples at different ages and the limitations and strengths of each. - Demonstrate knowledge of the appropriate first line management of UTIs in children.
Urinary Tract Infection (Children)	This session discusses the rationale for the current practice guidelines regarding the imaging of paediatric urinary tract infections (UTIs). Guidelines from the National Institute for Health and Care Excellence (NICE) are compared with those from the American Academy of Pediatrics	- Identify appropriate investigation procedures in given cases of UTI in accordance with NICE recommendations for UK practice. - Select appropriate imaging modalities in given cases of UTI in accordance with NICE recommendations for UK practice.

Session	Description	Learning Outcomes
	(AAP) and a range of imaging modalities are discussed.	- Make appropriate decisions in complex cases that are outside the remit of the NICE guidelines Describe the modalities available for the imaging of paediatric UTIs. - Recognise normal and abnormal imaging appearances. - Make correct diagnoses in given cases based on history and images.
Urinary Tract Calculi in Children	This session covers the main causes of urinary tract calculous disease in children, and the imaging techniques used to detect it.	- List the common causes of urinary tract calculi in children. - Describe the ultrasound characteristics of urinary calculi in children. - Describe the usual imaging approach to calculi in young patients.
STIs in the Newborn	This session explores which sexually transmitted pathogens can affect the newborn and how they can be diagnosed and treated. It also discusses the consequences on the parents and the follow-up and management.	- List the sexually transmitted bacterial, viral and protozoal infections that can affect the newborn and identify which are notifiable. - For each infection describe aetiology, transmission risk, mode of transmission, presentation and how to diagnose these infections including how investigations in neonates differ from adults. - Describe management (excluding detail about antibiotics). - Describe any complications. - Decide what follow-up is required.
STIs in Prepubertal Children	This session discusses specific issues related to the presentation, diagnosis and management of sexually transmitted infections (STIs) in pre-pubertal children. It also examines factors which place children at risk of STIs.	- Recognise the presentations of STIs in prepubertal children. - Describe the routes of acquisition of STIs in children. - Describe appropriate investigations and management of a child with a possible STI. - Recognise your personal limitations in advising on the significance of STIs in children and the need for further advice.
STIs in Postpubertal Children and Adolescents	This session discusses specific adolescent issues related to the management of sexually transmitted infections (STIs) in postpubertal	- Identify factors which place young people at high risk of acquiring STIs.

Session	Description	Learning Outcomes
	children and young people. It reviews recent STI trends in young people, identification of factors which place young people at high risk of STIs, and sexual health promotion.	- Recognise the epidemiology of sexually transmitted infections (STIs) in young people. - Identify specific adolescent issues relating to the presentation, diagnosis and management of STIs. - State how using health promotion strategies such as one to one behavioural modification techniques can reduce STIs and pregnancy risk in young people.
Prescribing for STI Treatment for Pregnant Women, Women who are Breastfeeding and Children	This session covers the generic principles which apply when prescribing for pregnant women, women who are breastfeeding and in children. Prophylactic medication, where applicable, and treatment for specific STIs are considered. All doses stated in this session are from the BNF and BASHH. Please be aware that all the information in this session was correct at the time of publishing and that new data/evidence mean that some information provided could change. As this is a rapidly changing field, always refer to the most up-to-date references which can be found in the Resources listed in this session.	- Describe the generic principles which apply when prescribing for pregnant women, women who are breastfeeding and children. - Describe the potential risks in prescribing for the mother and fetus and how to limit them. - Detail the prophylactic regimes for the sexually transmitted infections (STIs), including post exposure prophylaxis (PEP) for HIV, that can affect pregnant women, women who are breastfeeding and children. - List the treatments for the STIs that can affect pregnant women, women who are breastfeeding and children. - Recognise the limitations in evidence for STI treatments in pregnant women, women who are breastfeeding and children.
Paediatric sepsis	This session is a case based guide aimed at supporting clinicians in the recognition and treatment of sepsis in children and involves the stories of three children, their assessment, experiences and treatment.	Includes the general principles for the safe assessment of a sick child, components of the consultation and assessment, specific factors to be considered in primary and secondary care settings and interpretation of investigations amongst others.

Treat Antibiotics Responsibly, Guidance, Education, Tools (TARGET) – PHE and RCGP

Session	Objectives/Learning outcomes
Antibiotics For Children Webinar	- Understanding that most parents are seeking reassurance and advice about their children, not necessarily antibiotics. - Understanding that clinical uncertainty and fear of 'missing the sick child' leads to inappropriate antibiotic prescribing. - Understanding that the absolute risk to any individual child of having an invasive bacterial infection is very low. - Intention to elicit and address parents' real concerns, and expectations. - Intention to share written materials such as the "When Should I worry booklet "and the child-cough TARGET leaflet to support better communication with parents. - Intention to reflect on your communication strategies with parents. - Intention to use the STARWAVe tool to inform children's risk of hospitalisation.

Meningitis Research Foundation

Session	Objectives/Learning outcomes
Lessons from research for doctors in training: recognition and early management of meningococcal disease in children and young people	- To use clinical examples to teach about the signs of sepsis and meningitis. - To clarify the important differences between meningococcal meningitis and sepsis. - To outline the basic management of meningococcal sepsis and meningitis in line with the algorithm '*Management of Meningococcal Disease in Children and Young People*'. - To describe the clinical pathophysiology of meningococcal disease. **Please see:** E-learning resource for the management of bacterial meningitis in infants under three months of age.
Clinician's Guide to Recognition and Early Management of Meningococcal Disease in Children e-learning tool	- This educational tool provides an opportunity to learn from real cases from the research study, using individual case histories as a basis for discussion and learning. The cases are presented in interactive question and answer format, linked to text, photos and audio. - The clinical management points are based on the good practice guide 'Early Management of Meningococcal Disease in Children', developed at the Department of Paediatrics, St Mary's Hospital, London and produced by Meningitis Research Foundation. - Learners will understand the background to the disease, pathophysiology, diagnosis and management using clinical case histories: questions and answers, discussions and learning points.

Session	Objectives/Learning outcomes
Management of bacterial meningitis in infants under three months of age e-learning	This course is for clinicians who want to improve their ability to assess and manage young infants (up to 3 months chronological age) who present with possible bacterial meningitis. After completing this eTool, you should be aware of: - Risk factors and clinical indicators for infection in young infants. - Which investigations should be carried out. - Importance of giving appropriate antibiotics, and when these should be given. - Prognosis and long-term effects of meningitis.

Further resources for all health professionals can be found on the Meningitis Research Foundation Resource Webpage.

Royal College of Emergency Medicine

Session	Objectives/Learning outcomes
Croup	- Define croup and understand the basic science and pathophysiology of stridor. - Describe the epidemiology of croup and understand it's clinical assessment, differential diagnosis, management, prognosis and follow up strategies. - Describe other causes of acute stridor in children and their management.
Common Childhood Exanthems	- Describe commonly presenting symptoms for children with febrile illness and a rash of bacterial, viral or other origins. - Define the role of clinical assessment, investigations, management, prognosis, follow up strategies, safety issues and pitfalls in commonly presenting childhood illnesses.
Fever Podcast (27:12min onwards)	- Discussion on 'can we manage low risk infants with fever as outpatients without antibiotics'?
Paediatric sepsis blog	Understand how to recognise paediatric sepsis by appreciating: - What is different about recognising sepsis in children? - What has been shown to be unhelpful in screening for sepsis in children? - What has been shown to be valid in an Emergency Department setting? - What are the high risk patient groups or situations I might encounter? - What do experienced clinicians believe to be of value when making the decision to discharge or treat?
Prolonged neonatal jaundice blog	- Understand the role of history taking, examination, investigations and management for children presenting with prolonged jaundice.

Session	Objectives/Learning outcomes
Chloramphenicol treatment in children podcast	“Paper Number 3” Chloramphenicol treatment for acute infective conjunctivitis in children in primary care.

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Viral Infections

Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Genetics and Taxonomy of Major Viral Agents: 3D Structure	This session covers the shape of viruses and how subunits of the capsid produce different structures. Components of the internal structure of viruses are identified along with major families of viruses that infect humans.	- List the variety of shapes and sizes of some of the viruses that cause disease in humans. - Identify the terminology required to describe the components of viruses (including envelope, virion, capsid, nucleocapsid and capsomers). - Recognise icosahedral, helical and complex symmetry. - Recognise the 3D structure of some major virus families
Pathogenicity of Infectious Diseases	This session explores how the immune response contributes to the pathogenesis of viral disease: immunopathology. You will be introduced to the different immune mechanisms that lead to immunopathology and examples of virus-induced immunopathology.	- Define pathogenesis and immunopathogenesis. - Describe viral pathogenesis. - Explain how the immune response contributes to pathogenesis. - List viruses which can cause immunopathogenesis.
Prevention of HBV Transmission in Healthcare Settings	This session covers issues related to hepatitis B infection in healthcare practice. It is assumed that readers already have knowledge of the natural history of hepatitis B and are able to interpret the relevant diagnostic tests. The focus of this session will be on the importance of preventing hepatitis B transmission in healthcare settings and how to protect both healthcare workers and patients. Specific policies laid down by the United Kingdom authorities will be covered.	- Discuss the importance of prevention of hepatitis B transmission in healthcare settings. - List ways of preventing hepatitis B infection in healthcare workers. - Identify strategies that could be used if the initial course of vaccination failed to produce a satisfactory response. - Recognise that the direction of transmission of hepatitis B could be from healthcare workers to patients.

Session	Description	Learning Outcomes
		- Discuss approaches to help healthcare workers who are infected to stay in career.
HIV and Hepatitis B and C in Context	This session discusses HIV and Hepatitis B and C in context. As an anaesthetist, it is important to understand the blood borne viruses (BBV), such as the human immunodeficiency virus (HIV) and hepatitis B and C viruses, in a wider context. This will enable you to make informed decisions regarding the application of standard precautions. This session also challenges you to consider the implications of these viruses and to think beyond procedures and policies that are in place today.	- Explain the prevalence of hepatitis and HIV, and geographical variation. - Describe the clinical manifestations of hepatitis B and C and HIV. - Specify the preventative measures including vaccination schedules for hepatitis B and C and HIV. - Identify high-risk patients.
HCV Genotyping	This session explores hepatitis C virus (HCV) genotyping. The genotypes of HCV are listed and the reason genomic structure helps treatment of HCV explained. This session covers molecular techniques of determining HCV genotypes and the limitations of these methods.	- Identify the distribution of HCV genotypes around the world. - Recognise the importance of determining the HCV genotype in a patient. - List three molecular methods for determining HCV genotype. - List at least six of the limitations in the molecular methods for determining HCV genotyping.
Cytomegalovirus	This session covers the clinical features, natural history, diagnostics and treatment of Cytomegalovirus (CMV) infection.	- List the risk factors for CMV acquisition and clinical disease. - Identify the clinical features associated with CMV viraemia and end-organ disease (including retinitis, encephalitis and enteritis). - List the general and specific diagnostics available for CMV infection. - Describe the specific therapies available for CMV and their main side-effects and contraindications.
Cryptosporidiosis and Microsporidiosis	This session covers the aetiology, clinical features, natural history, diagnostics and treatment of cryptosporidiosis and microsporidiosis.	- Define the aetiological agents of cryptosporidiosis and microsporidiosis.

Session	Description	Learning Outcomes
		- List the common presentations and clinical features of cryptosporidiosis and microsporidiosis. - Establish the diagnostics available for these infections. - List the specific agents used to treat these infections and the prognosis of cryptosporidiosis and microsporidiosis.
Herpes Infections	This session covers the pathophysiology, clinical features, diagnostics and treatment of Herpes simplex and zoster infections in the setting of HIV.	- Describe the various clinical presentations, clinical findings and complications of Herpes simplex virus (HSV) and Varicella-zoster virus (VZV) infections in the setting of HIV. - Detail the specific laboratory diagnostics of HSV and VZV infections. - List first and second line treatment regimens for HSV and VZV infections. - Detail the indications for the use of secondary prophylaxis in HSV infection. - Discuss the indications for hyperimmune globulin and vaccination in VZV infection.
Herpes Virus Infections in the Immuno-compromised	This session discusses the most important virus infections in solid organ transplant recipients, the sources of infection, their diagnosis, prevention and treatment.	- Describe which viruses cause the most severe infections. - Detail which viruses can be transmitted via the donated organ(s). - Describe how these infections can be diagnosed. - Describe how infection can be prevented or made less severe. - Describe how these infections can be treated.
Dengue	The session discusses dengue virus, its virology and mode of transmission. The clinical presentation of primary versus secondary dengue infection will be described together with the	- Describe the basic virology and mode of transmission of dengue virus.

Session	Description	Learning Outcomes
	differential diagnosis of each syndrome. The key influences on changing global epidemiology of dengue will be discussed, highlighting the importance of international vector control.	- Recognise the clinical presentation and relevance of infection in the returning traveller. - Identify key influences on changing global dengue epidemiology. - Distinguish between primary and secondary infection in respect of clinical and laboratory findings. - List the important differential diagnoses of: i) Dengue fever syndrome and ii) Dengue haemorrhagic fever. - Identify methods of vector control.
Rubella and B19 in Pregnancy	This session describes the main consequences of rubella and parvovirus infection during pregnancy, discussing the relevant investigation and management after infection with these viruses.	- Recognise the consequences of infection in different gestational stages of pregnancy for both rubella and parvovirus B19. - Investigate and treat maternal infection. - Investigate and treat the at-risk or infected foetus or neonate.
EBV Infection: Virology, Transmission and Disease in the Immunocompetent Host I	This session describes the classification of Epstein Barr virus (EBV) within the herpesvirus family. It describes how EBV is transmitted, replication within the host cell and pathophysiology of the disease.	- Define the structure of EBV. - Describe the processes involved in EBV replication. - Describe how EBV infection is transmitted. - Describe the pathophysiology of EBV infection.
EBV Infection: Virology, Transmission and Disease in the Immunocompetent Host II	This session covers primary Epstein Barr virus (EBV) infection: epidemiology, clinical presentation and diagnosis.	- Define the epidemiology for Epstein Barr virus infection. - Describe disease manifestations of primary Epstein Barr virus infection in the immunocompetent host. - Interpret important laboratory findings in primary Epstein Barr virus infection.

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Human Immunodeficiency Virus (HIV) and related infections

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Transmission Routes (HIV)	This session describes the classification of Human Immunodeficiency Virus (HIV) and its worldwide distribution. It outlines how HIV infection may be acquired by describing the transmission routes of the virus. It will highlight the relative risk of acquiring HIV infection via the different routes and stages of HIV infection, and its effect on the worldwide epidemiology of HIV.	- Classify HIV groups and sub-groups. - Describe how HIV infection is transmitted. - Define the at risk groups for HIV infection. - Calculate the risk assessment for acquisition of HIV infection after potential exposure. - Define the relative risk of HIV infection in various parts of the world.
HIV Prevention	This session describes how transmission of HIV infection may be interrupted or prevented. The session provides preventive strategies at individual, national and/or global level for vertical, sexual and parenteral routes of transmission.	- Define preventive strategies describing interventions for individual patient and public health programmes, and global/national initiatives in place to prevent sexual, vertical and parenteral transmission of HIV. - Describe the role of chemoprophylaxis (post-exposure prophylaxis - PEP) and vaccines in HIV prevention. - Discuss the cultural and socio-economic factors that may impact on these interventions.
HIV in Women	This session explores the additional issues to consider over and above standard HIV care when managing HIV positive women.	- Identify factors associated with increased risk of HIV acquisition in women. - Recognise how vaginal flora has implications for HIV transmission. - Recognise the outcome and toxicity of ARVs in women. - Identify gender differences in pharmacokinetics. - Recognise the social factors which affect the outcome of women with HIV. - Identify how cervical screening affects women with HIV. - Recognise how contraception has implications for women with HIV.

Session	Description	Learning Outcomes
HIV and Reproductive Health or Fertility	This session focusses on preconception and conception issues for couples affected by HIV, how to assess fertility in HIV patients and when to refer for further investigation and management. HIV is now a chronic treatable condition with a near normal life expectancy. HIV positive individuals are increasingly hopeful about having children. There are many factors, both HIV related and unrelated, which may affect an individual's ability to parent a child.	- Describe the prevalence, aetiology, screening investigations and treatment of subfertility in HIV patients. - Describe the issues relevant to discordant couples planning a pregnancy, including spermwashing and Pre Exposure Prophylaxis (PrEP). - Explain how antiretroviral therapy has influenced the approach to conception in HIV concordant and discordant couples.
HIV in Pregnancy	This session provides a comprehensive overview of HIV in pregnancy. It looks at mother-to-child transmission (MTCT) rates, with or without interventions, maternal antiretroviral therapy, the infant testing schedule and the epidemiology of HIV positive pregnant women in the UK.	- Identify mother-to-child transmission (MTCT) rates with and without interventions. - Recognise when to start, what to start and how to monitor maternal antiretroviral therapy. - Define the infant testing schedule. - Recognise the epidemiology of HIV positive pregnant women in the UK.
ARVs in Pregnancy	This session discusses the role and toxicities of antiretroviral drugs for mother and child during pregnancy.	- Identify which antiretroviral drugs to use in pregnancy and when to start. - Recognise how to manage an HIV positive woman on treatment who is planning a pregnancy or who presents pregnant. - Describe the use of antiretroviral drugs in a women presenting in labour or late in pregnancy. - Demonstrate an understanding of the antiretroviral drugs an infant born to an HIV positive mother will require.
Adolescent HIV	This session discusses the major issues of an HIV positive adolescent, including management of antiretroviral therapy, sexual and other risk taking behaviours.	- Describe the epidemiology of horizontal and vertically acquired HIV in the UK for adolescents. - State the principles and models of transitional care. - Define the medical issues facing adolescents with HIV. - Recognise the social and psychological difficulties that can affect adolescents with HIV. - Explain how to maximise adherence to antiretrovirals.

Session	Description	Learning Outcomes
		- State the importance of sexual and reproductive health in this very specialised group of patients.
HIV in Men who have Sex with Men	This session provides a comprehensive overview of STIs HIV in men who have sex with men (MSM).	- Describe the epidemiology of HIV and STIs in MSM in the UK. - Identify the risk factors associated with HIV transmission in MSM. - Identify the risk factors associated with STI acquisition in HIV infected MSM. - Describe the aetiology and management of Proctitis in HIV infected MSM. - Identify prevention strategies against HIV transmission and STIs in HIV infected MSM.
HIV AIDS in the Thorax	This session discusses thoracic complications of human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) in adults and illustrate the radiological features in a series of HIV/AIDS-related cases.	- Describe four thoracic complications of HIV/AIDS. - Recognise and describe the appearances of these complications on chest x-ray (CXR) and computed tomography (CT). - Appreciate the role of CT in guiding diagnostic procedures and monitoring therapy.
Pneumococcal Infections in HIV	This session covers the epidemiology and risk factors for pneumococcal infection, describes the varying clinical presentations and features, elaborates on the different diagnostics available, and discusses the general and specific management indicated and available prevention strategies.	- List the risk factors for pneumococcal infections. - Describe the various clinical presentations and features of pneumococcal infections in HIV (including pneumonia, meningitis and septicaemia). - Define the general and specific laboratory diagnostics of pneumococcal infections. - Describe the therapies indicated for pneumococcal infections, and debate the use of corticosteroids in meningeal disease. - Discuss the use of vaccination to prevent pneumococcal infection in HIV.
Tuberculosis	This session covers the aetiology, natural history, clinical presentation, investigation and management of tuberculosis infection in HIV.	- State the modes of transmission, the differing clinical stages and the various clinical presentations and features of tuberculosis in individuals with HIV infection (including pulmonary, meningeal and other non-pulmonary disease).

Session	Description	Learning Outcomes
		- Describe the general and specific laboratory diagnostics for tuberculosis. - List standard first line treatment regimens for presumed or known drug sensitive tuberculosis, identify second and third-line anti-tuberculous drugs and the indications for corticosteroids, and appreciate the usual clinical response to anti-tuberculous regimens. - Identify risk factors for drug resistance and how to prevent its development. - Identify potential drug interactions of anti-tuberculous medications and antiretrovirals/other commonly utilised drugs. - Describe the diagnosis of latent tuberculosis.
HIV and Hepatitis B and C in Context	This session discusses HIV and Hepatitis B and C in context. As an anaesthetist, it is important to understand the blood borne viruses (BBV), such as the human immunodeficiency virus (HIV) and hepatitis B and C viruses, in a wider context. This will enable you to make informed decisions regarding the application of standard precautions. This session also challenges you to consider the implications of these viruses and to think beyond procedures and policies that are in place today.	- Explain the prevalence of hepatitis and HIV, and geographical variation. - Describe the clinical manifestations of hepatitis B and C and HIV. - Specify the preventative measures including vaccination schedules for hepatitis B and C and HIV. - Identify high-risk patients.

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Foundation programme learning support

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Hospital acquired fever: What to do if MRSA positive	This session discusses the initial management of a febrile illness developing in an inpatient. It gives you the opportunity to practice your diagnostic skills and ability to assemble an appropriate management plan.	- Recognise likely sources of infection in an inpatient. - Use examination, pre-existing test results and new investigations to confirm the source of infection. - Obtain appropriate microbiological specimens in a timely fashion. - Select appropriate antimicrobial therapy in a timely fashion.
Hospital Acquired Fever: What to do Next	This session discusses the complications of hospital acquired fever when MRSA is present. It continues the management of the case described in session 'Hospital Acquired Fever: What to do if MRSA Positive'.	- Recognise the complications of S. aureus/MRSA bacteraemia. - Identify the principles of good central venous catheter practice. - Recognise the principles of MRSA screening and isolation. - Discuss the principles of good dress code. - Identify the 5-point scheme for correct hand hygiene.
Quality and Safety in the NHS	This session stresses that the drive for quality in the NHS has patient safety at its heart. It will introduce you to a broader concept of patient safety within patient pathways. Openness is discussed as the key feature required for patient safety.	- Define the three dimensions of quality. - Describe how quality is monitored in the NHS. - Recognise the importance of openness for patient safety. - Describe how the NHS Commissioning Board has continued the work of the National Patient Safety Agency (NPSA) in supporting patient safety. - Define 'Never Events' and their importance.
Raising Concerns about Patient Safety	This session explores the issues that arise in identifying and raising concerns about patient safety. It covers the importance of challenging unsafe practice and questioning the evidence behind practice. The session explores factors that enable this and those that hinder this, including	- Identify high quality care and situations in need of improvement. - Demonstrate understanding of the importance of raising concerns about quality improvement and patient safety. - Reflect on the challenges in raising concerns. - Explore your reactions to challenge to your own practice.

Session	Description	Learning Outcomes
	the culture which exists, and questions about whistleblowing.	- Identify appropriate behaviours that enable colleagues to challenge your practice.
Team Working and Patient Safety	This session will demonstrate how effective teamwork is a determining factor in patient safety, and will enable you to ensure that any team you work with is effective and therefore able to provide safer care for the patient.	- Define what is and is not a team. - List what makes a multi-disciplinary team effective. - Describe research evidence of how these factors contribute to patient safety. - Use a checklist with any team as a basis to discuss its effectiveness. - Create a plan, in conjunction with the team concerned, to build on the team's strengths and improve its effectiveness.
Competency in Practice	This session defines competency and relates it to the practice of medicine.	- Define competency. - Identify how to gain competence in medicine. - Recognise how competence relates to your practice.
Senior Advice – Who, When and Why?	This session enables you to recognise the need to sometimes call for help and where you might access that help.	- Recognise the boundaries of your competency as a foundation doctor. - Recognise the importance of prioritising actions, investigations and treatments based on the level of your training and competences. - Select when and where to get help in your clinical work. - Identify the need for team working for unwell patients.
Senior Advice: When to Stop for Help	This session includes an interactive case study that describes an unwell patient presenting via their GP to your Emergency Department. As you progress through the case study you will have the opportunity to diagnose and treat this patient and then to evaluate the success of your managment plan.	- Recognise some of the boundaries of your competency as a foundation doctor. - Recognise the importance of prioritising actions, investigations and treatments based on the level of your training and competence. - Select when and where to get help in your clinical work. - Identify the need for team working for unwell patients.
Outcomes and Patient Experience	This session looks at the tools and processes for assuring quality. Assessing the quality of care from the patient’s viewpoint is important as it may give a different, or additional, perspective on the overall performance.	- Reflect on what makes you improve your performance. - Recognise the importance of measuring outcomes in improving quality. - Recognise the importance of listening to the patient experience in improving quality.

Session	Description	Learning Outcomes
Good Handover Practice	This session explores the significance of good clinical handover practice in relation to the following main areas: patient safety, patient and doctor satisfaction. It also deals with the methods and implications of good clinical handover practice and gives you a related self assessment opportunity.	- Describe the benefits of good clinical handover practice and the implications of substandard handovers. - Recognise that clinical handover entails a multifactorial approach. - Recognise that clinical handover may overlap into interprofessional communities of practice, for overall continuity of care. - Discuss barriers and enablers to good handover practice. - Assess novel clinical handover techniques. - Identify the implications of good/bad clinical handover practice through case studies.
Effective Referrals to Other Clinical Teams	This session covers what to think about before referring to other clinical teams and how to make effective referrals.	- Identify and discuss factors involved in making the decision to refer a patient. - Identify and describe important issues in the referral process such as mode of referral, destination and timing. - Gather appropriate information and identify the most important points to include in your referral. - Write a succinct and effective referral letter. - Make a concise verbal referral. - Analyse and discuss post-referral communication between clinical teams and the importance of timely discharge summaries.
Team Dynamics	This session examines team dynamics. This includes what constitutes a good team in healthcare, the team's development, your contributions to a successful team, and how to intervene in and improve a dysfunctional team. It also gives you the foundations for successfully contributing to leading a team in a clinical setting.	- Define a team and explain the differences between groups and teams. - Explain what constitutes an effective team and its development. - Recognise your personal contribution to effective team working and the skills required for leading a team. - State the interventions required for teams that are not functioning well. - Demonstrate your contribution to leadership through identifying actions to support effective functioning of teams.

Session	Description	Learning Outcomes
Effective Team Working	This session examines how working within and across multidisciplinary teams to deliver and improve services can bring benefits to patients. This session contributes to the development of leadership in clinical settings.	- Describe the range of teams and team structures that are found in healthcare settings, including those of which you are a part. - List the advantages of working across networks to deliver and improve services. - Identify the characteristics and benefits of multidisciplinary teams (MDTs) as well as any associated difficulties. - Demonstrate your contribution to leadership by identifying action to improve the way clinical teams function.
Clinical Governance	This session describes clinical governance and consider how its various components assure delivery of high quality care. The session will encourage you to consider your role in clinical governance as a foundation doctor and throughout your future career.	- Define clinical governance. - Know the seven activities (pillars) that support clinical governance. - Describe how clinical effectiveness, learning effectiveness and risk management underpin clinical governance.
Audit	This session provides an introduction to the concept of audit. It will outline the importance of audit and the audit cycle in good medical practice and clinical governance. Examples of appropriate topics and data sources will be presented. The features of effective audit and some of the pitfalls of the audit process will be identified. Suggested further reading will be given at the end of the session.	- Describe the concept of audit and how it fits into quality improvement. - Explain the importance of audit in good medical practice. - Describe the audit cycle. - List different topics and data sources for audit. - Describe the features of a good audit. - Identify potential pitfalls in the audit process.
Explaining Evidence/ Guidelines/Protocols to Patients	This session provides guidance on communicating and explaining clinical evidence, guidelines and protocols to patients in both community and hospital settings.	- Select best practice in presenting clinical evidence to patients. - Prioritise issues when discussing clinical guidelines and protocols with patients. - Identify the most appropriate information when explaining guidelines to patients. - Indicate limitations of current evidence and the best way to communicate these to patients.

Session	Description	Learning Outcomes
Guidelines in Clinical Practice	This session provides an introduction to accessing guidelines and their role in the clinical decision making process.	- Define the term clinical guideline. - Discuss where to access national guidelines for common disorders. - Identify advantages and limitations of clinical guidelines. - Prioritise decision making processes when working within local, national and other guidelines. - Apply available evidence base in clinical care, with appropriate use of guidelines.
Human Factors and Analysis of Adverse Events	This session discusses the importance of reporting a clinical incident. You will learn what to do if you are involved in a clinical incident and how these reports are used.	- Submit a clinical incident report. - Describe what to do if you are involved in a clinical incident. - Recognise how clinical incidents are investigated by and are of value to the organisation for which you work.
Medical Error: When Things Go Wrong	This session discusses how things can go wrong in medical practice and uses a case study of a drug error to address the principal steps to take when dealing with a medical error.	- Define medical error and associated terms. - List the common causes of medical errors. - List the principal steps to take when dealing with a medical error. - Discuss the use of clear explanation and apology in medical errors. - Describe the common reactions of patients and staff to a medical error. - Identify the value of reflection on a medical error.
Errors and Experiences in Healthcare	This session describes the types of error encountered in healthcare settings, ways of identifying errors, and how to prevent errors occurring. It also supports the development of leadership in clinical settings.	- Explain what is meant by patient safety and clinical errors. - Categorise the types of clinical error that can occur, identifying those most likely within your own area of work. - Describe local and national processes for managing safer care. - Identify where the clinician can play a lead role in promoting safer care (using a case study). - Identify learning which may arise from clinical errors (whether by self or others). - Identify how, through demonstrating leadership, you will address issues in the future.

Session	Description	Learning Outcomes
Minimising Risk in Healthcare Organisations	This session defines risk and via the presentation of various clinical situations, discusses approaches to the management of risk. This session contributes to the development of leadership in a clinical setting.	- Define risk management generally and explain how it applies within the clinical context and to the concept of leadership. - Identify and critique current policies and protocols used locally to manage risk. - Describe and categorise potential sources of risk within your area of work. - Describe commonly used tools and techniques for managing risk. - Through consideration of a case study, demonstrate your contribution to leadership by identifying how risk can be systematically managed.
An Underperforming Colleague: What To Do?	This session discusses the complex and often challenging issues of underperformance in doctors across the training grades, and practical advice to identify, manage and support trainees in difficulty.	- Differentiate between underperformance and misconduct (personal and professional misconduct) in medical practice. - Identify the underlying reasons for underperformance in medical practice. - Detect the 'early' signs of underperformance. - Recognise ways in which problems related to poor medical performance may present. - Use a practical and systematic framework to identify, manage and support an underperforming doctor.

Further learning sessions can be found on the eLfH Foundation e-learning programme webpage.

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Clinical leadership learning support

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Introduction to Leadership and LeAD	This session explores the concepts of leadership in the clinical setting. It also introduces you to the e-learning support for the development of clinical leadership (LeAD) and its relationship with the Medical/Clinical Leadership Competency Framework (MLCF/CLCF).	- Recognise the importance of leadership skills for clinicians. - Explore the key concepts of leadership. - Identify the purpose and outcome of leadership in healthcare. - Describe how LeAD e-learning works to support the MLCF/CLCF. - Identify clinical situations that can support the development of clinical leadership further.
Introduction to the Medical/Clinical Leadership Competency Framework	This session provides an overview of the Medical/Clinical Leadership Competency Framework (MLCF/CLCF). It explains how it has been constructed and how it can be used.	- Explain the rationale behind the development of the Medical/Clinical Leadership Competency Framework (MLCF/CLCF). - Describe the structure of the framework. - Explain shared leadership and how it relates to the framework. - Explain how the framework is being used to influence clinical education, training and development.
Introduction to CLCF: Demonstrating Personal Qualities	This session introduces the Medical/Clinical Leadership Competency Framework domain - Demonstrating Personal Qualities. It examines the elements of competence within the domain and the application of leadership to clinical practice.	- Identify the four competence elements within this domain. - Explain why these elements are important for clinicians. - Examine the competence descriptors for each element and identify examples of how these are relevant to you and the application of leadership to clinical practice. - Demonstrate your contribution to leadership in clinical settings by identifying what you will do to develop competence in demonstrating personal qualities.
Values and Attitudes in Practice	This session explores values, beliefs, prejudice and stereotyping. It encourages reflection on how these issues might affect your working practice	- Define values, beliefs and prejudice. - Explain and reflect on how individual and institutional beliefs are developed.

Session	Description	Learning Outcomes
	and considers how you can uphold the beliefs and values of your workplace. The session supports the development of leadership in clinical settings.	- Make the link between values, beliefs and behaviour. - Understand how effective reflection on difficult situations can be used to change behaviour. - Consider the effect of prejudice and stereotyping on your professional practice. - Consider your role in upholding the values and beliefs of the profession and/or organisation. - Identify how you demonstrate leadership by acting to minimise the negative impact of assumptions and prejudices on patients and other staff.
Team Roles and Personality	This session examines how an individual's personality, consequent behaviours and preferred styles and approaches can impact on others. It encourages reflection on personal behaviour as well as on the behaviour of colleagues. This session supports the development of leadership in a clinical setting.	- Describe the most common approach to identifying aspects of personality and behaviour of individuals in the workplace. - Explain the influence of personality type on behaviour and consider circumstances where preferred behaviours may or may not be appropriate. - Determine the consequences of individuals with different preferences and approaches working together within teams. - Demonstrate your contribution to leadership by identifying the steps you will take to increase team effectiveness.
Feedback for Personal Development	This session considers methods of obtaining feedback from others in order to increase self-awareness and assist with personal development planning. This session supports the development of leadership in clinical settings.	- Detail the principal methods of obtaining feedback from others about personal impact and performance. - Identify and critically evaluate different feedback methods. - List means of using information from such feedback and securing appropriate support. - Describe the link to the Medical/Clinical Leadership Competency Framework. - Demonstrate your contribution to leadership by identifying how to develop your own skills at giving feedback.
Errors and Experiences in Healthcare	This session describes the types of error encountered in healthcare settings, ways of identifying errors, and how to prevent errors	- Explain what is meant by patient safety and clinical errors. - Categorise the types of clinical error that can occur, identifying those most likely within your own area of work.

Session	Description	Learning Outcomes
	occurring. It also supports the development of leadership in clinical settings.	- Describe local and national processes for managing safer care. - Identify where the clinician can play a lead role in promoting safer care (using a case study). - Identify learning which may arise from clinical errors (whether by self or others). - Identify how, through demonstrating leadership, you will address issues in the future.
Managing Personal and Professional Development	This session considers the necessity for clinicians to continuously develop in the various roles that make up their professional practice, including leadership. It explores the link between individual practice and that of the organisation. This session supports the development of leadership in clinical settings.	- State the requirements for clinicians to demonstrate a consistently high standard in all aspects of their work. - Understand how individual performance impacts on the wider healthcare system. - Identify the range and means of identifying personal and professional development needs. - Describe the link to the Medical/Clinical Leadership Competency Framework. - Identify any areas for future personal development arising from this module and any appropriate training opportunities available locally. - Demonstrate your contribution to leadership by identifying steps to show improvement in your own practice and leadership.
Using Best Practice	This session considers the features of best practice and how it can help improve personal practice and clinical services by increasing transparency, facilitating accountability, ensuring equity of provision and improving outcomes.	- Describe what is meant by best practice in the context of a clinical service and consider how to source relevant examples of best practice. - List the advantages and disadvantages of using consistent approaches. - List the benefits of clear common processes and approaches shared across the healthcare system. - Describe the reasons behind equity of provision and outcome for the population. - Describe the link to the Medical/Clinical Leadership Competency Framework.

Session	Description	Learning Outcomes
		- Demonstrate your contribution to leadership in the clinical setting by recommending improvements to clinical guidelines.
Using Policy and Guidance to Ensure Effective Healthcare	This session examines the range of policies and guidance that ensure effective practice within our healthcare organisations. The session encourages clinicians to appreciate the importance of these influences on themselves and on the wider organisations in which they work. Understanding how these frameworks are used and learning how to influence them are key factors in the development of leadership.	- List the principal frameworks (professional, legal and ethical) which have a role in ensuring the delivery of effective healthcare. - Identify the role of team members in adhering to and promoting the principles behind relevant frameworks, for the benefit of patients and the wider service. - Consider situations where non-adherence to governing frameworks has impacted on the service and the wider healthcare system. - Demonstrate your contribution to developing your leadership capabilities through reflection and awareness of the influence of these frameworks on your work.
The Challenge of Probity	This session gives practical scenarios where probity and conflicts of interest occur and examples of the expectations by professional regulators and organisations. Effective leadership requires individuals to continually demonstrate their integrity and sense of probity, especially when engaged in public service.	- Explore and define probity. - Identify how your professional body defines probity and what is required of you. - Discuss and critically evaluate the relationship between probity and effective leadership in healthcare. - Demonstrate your contribution to leadership in your clinical setting by elaborating on the ways in which the challenges of probity may occur and what steps you personally could take to address these.
Introduction to CLCF: Working with Others	This session introduces the Medical/Clinical Leadership Competency Framework domain - Working with Others. It examines the elements of competence within the domain and the application of leadership to clinical practice.	- Identify the four competency elements within this domain. - Explain why these elements are important for clinicians. - Examine the competence descriptors for each element and identify examples of how these are relevant to you and the application of leadership to clinical practice. - Demonstrate your contribution to leadership in clinical settings by identifying what you will do to develop competence in working with others.

Session	Description	Learning Outcomes
Leadership Styles	This session examines what is meant by leadership style, explores the different types of leadership style, and considers which style is likely to be the most effective in different situations. This session supports the development of leadership in clinical settings.	- Examine the key definitions and models of leadership and leadership style. - Describe current predominant thinking around leadership. - Explain how leadership style can be driven by different situations. - State the most likely outcome of adopting the various leadership styles. - Analyse and critique your personal leadership styles and those of others. - Demonstrate your contribution to leadership by identifying leadership approaches to improving the experience of healthcare for patients.
Team Dynamics	This session examines team dynamics. This includes what constitutes a good team in healthcare, the team's development, your contributions to a successful team, and how to intervene in and improve a dysfunctional team. It also gives you the foundations for successfully contributing to leading a team in a clinical setting.	- Define a team and explain the differences between groups and teams. - Explain what constitutes an effective team and its development. - Recognise your personal contribution to effective team working and the skills required for leading a team. - State the interventions required for teams that are not functioning well. - Demonstrate your contribution to leadership through identifying actions to support effective functioning of teams.
Effective Team Working	This session examines how working within and across multidisciplinary teams to deliver and improve services can bring benefits to patients. This session contributes to the development of leadership in clinical settings.	- Describe the range of teams and team structures that are found in healthcare settings, including those of which you are a part. - List the advantages of working across networks to deliver and improve services. - Identify the characteristics and benefits of multidisciplinary teams (MDTs) as well as any associated difficulties. - Demonstrate your contribution to leadership by identifying action to improve the way clinical teams function.
Working in a Group	The session discusses what can make working groups successful, and what you can do to	- Explain how working groups function.

Session	Description	Learning Outcomes
	contribute towards achieving the group goals, whether you are the designated chair, or a member of the group.	- Consider ways in which you can contribute to the effectiveness of a group. - Demonstrate leadership in your field of practice by reflecting on your contribution to a working group.
Coaching for Practice	This session explores values, beliefs, prejudice and stereotyping. It encourages reflection on how these issues might affect your working practice and considers how you can uphold the beliefs and values of your workplace. The session supports the development of leadership in clinical settings.	- Describe the main features of a coaching approach. - Discuss how to create an effective coaching alliance. - Understand key techniques and approaches. - Discover how to motivate yourself and others. - Demonstrate your contribution to leadership by reflecting on coaching in a context relevant to your field of practice.
Introduction to CLCF: Managing Services	This session introduces the Medical/Clinical Leadership Competence Framework domain - Managing Services. It examines the elements of competence within the domain and the application of leadership to clinical practice.	- Identify the four competence elements within this domain. - Explain why these elements are important for clinicians. - Examine the competence descriptors for each element, and identify examples of how these are relevant to you and the application of leadership to clinical practice. - Demonstrate your contribution to leadership in clinical settings by identifying what you will do to develop competence in managing services.
Ensuring Development and Learning	This session examines the formal and informal means of reviewing and managing the individual performance of other people. It describes key aspects around educational supervision, performance review, mentoring and coaching. The session supports the development of leadership in clinical settings.	- Define performance management in the context of the individual. - Relate performance management to the formal systems of individual performance review, educational supervision and appraisal. - Identify the skills and techniques associated with conducting effective individual performance review. - Explain the role of mentoring, coaching and counselling in supporting development and improved performance. - Identify where poor performance or inappropriate behaviour calls for the use of formal measures to deal with the situation. - Identify how managing performance relates to clinical leadership.

Session	Description	Learning Outcomes
Organisational Performance	This session examines the sort of information used by healthcare organisations to assess their performance and considers how this information can be used to improve performance. This session supports leadership development in the clinical setting.	- Describe the range of information that can be helpful in indicating performance. - Explain the formal mechanisms and approaches to organisational performance management in the NHS. - Analyse the information provided in a case study to identify key performance issues for a service and decide what actions may be necessary. - Consider how information about performance can be used to inform future plans. - Explore how performance is measured and managed in your own service. - Demonstrate your contribution to leadership by identifying appropriate performance indicators in your service.
Introduction to CLCF: Improving Services	This session introduces the Medical/Clinical Leadership Competency Framework domain - Improving Services and examines the elements of competence within the domain and the application of leadership to clinical practice.	- Identify the four competence elements within this domain. - Explain why these elements are important for clinicians. - Examine the competence descriptors for each element, and identify examples of how these are relevant to you and the application of leadership to clinical practice. - Demonstrate your contribution to leadership in clinical settings by identifying what you will do to develop competence in improving services.
Introduction to Quality Improvement	This session introduces quality improvement in healthcare, in particular the role of the clinician, the discipline of improvement, the people and leadership skills involved, and the main approaches and tools. This session supports the development of leadership in clinical settings.	- Define the term quality improvement. - Explain your role as a clinician involved in quality improvement to others. - List the elements that make up a quality improvement approach, in particular the discipline of improvement. - Identify the key tools and approaches for each of the elements in the discipline of improvement. - Demonstrate your contribution to leadership in your clinical setting by identifying areas for improvement in your own service.
Quality Improvement and Patient Safety	This session explores the importance of patient safety and provide some practical tools for	- Explain the link between quality improvement and safer patient care.

Session	Description	Learning Outcomes
	improvement. This session supports the development of leadership in clinical settings.	- Describe the methods needed to undertake improvements to ensure patient safety and confidence. - Identify how and when process mapping can be used to analyse services. - Explain how patient and carer input can be obtained and used in service improvement. - State means of evaluating improvement and measuring the impact of changes. - Explain how quality improvement processes relate to the broader system. - Demonstrate your contribution to leadership by identifying changes in the way care is delivered in order to improve patient safety.
Minimising Risk in Healthcare Organisations	This session defines risk and via the presentation of various clinical situations, discusses approaches to the management of risk. This session contributes to the development of leadership in a clinical setting.	- Define risk management generally and explain how it applies within the clinical context and to the concept of leadership. - Identify and critique current policies and protocols used locally to manage risk. - Describe and categorise potential sources of risk within your area of work. - Describe commonly used tools and techniques for managing risk. - Through consideration of a case study, demonstrate your contribution to leadership by identifying how risk can be systematically managed.
Clinical Governance	This session outlines the principles of clinical governance, including how clinical governance works for individual clinicians, and how clinical governance is applied to whole organisations to assure and improve quality. This session supports the development of leadership in clinical settings.	- Explain how individual clinicians can use governance principles to improve the quality of their care. - Describe the essential components of a structured governance plan within a hospital directorate or GP practice. - Evaluate regional and national factors that impinge on local governance requirements.

Session	Description	Learning Outcomes
		- Demonstrate how you contribute to the development of leadership by identifying how you would assure the quality of service for patients.
Monitoring Systems of Care	This session explains the term outcomes, the methods commonly used to assess quality, and the contribution of monitoring to ensuring standards are met and that there is equity of provision and outcome. This session supports the development of leadership in the clinical setting.	- Describe the meaning of outcomes in the context of system wide clinical services. - State the mechanisms used to assess quality and outcomes. - Identify opportunities where systems of care might benefit from assessing the quality of provision and service. - Explain the steps that would be necessary to bring a more systematic approach to monitor the outcome of provision. - Develop your leadership by recommending appropriate outcome measures for your service.
Introduction to CLCF: Setting Direction	This session introduces the Medical/Clinical Leadership Competency Framework domain, Setting Direction. It examines the elements of competence within the domain and the application of leadership to clinical practice.	- Identify the four competence elements within this domain. - Explain why these elements are important for clinicians. - Examine the competence descriptors for each element and identify examples of how these are relevant to you and the application of leadership to clinical practice. - Demonstrate your contribution to leadership in clinical settings by identifying what you will do to develop competence in setting direction.
Successful Patient Outcomes	This session examines how patient outcome measures contribute to national and local programmes looking at effectiveness and safety in healthcare, and are used to inform service plans nationally and locally. This session supports the development of leadership in clinical settings.	- Identify how national programmes relate to local services. - Examine the type of data and information needed to measure patient outcomes. - Consider the use of patient outcomes information in planning practice and services. - Describe how results from national programmes on patient outcomes can be used constructively to influence individual practice. - Demonstrate your contribution to the development of leadership in your area of practice by identifying relevant national patent outcome measures.

More learning sessions can be found on the eLfH Leadership for Clinicians e-learning programme webpage.

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Management learning support

e-Learning for Healthcare (eLfH) and HEE

Session	Description	Learning Outcomes
Working with Others: Developing Networks	This session aims to increase your knowledge in the importance of developing networks and how your role as a registered practitioner can impact on patient care and the service which you provide. Multi-professional working and learning is essential for any healthcare practitioner. Networking gives you the opportunity to not only work alongside colleagues and other professionals, but also to understand different perspectives in care delivery (including patients and carers).	- Identify opportunities where working with patients and colleagues in the clinical setting can bring added benefits. - Create opportunities to bring individuals and groups together to achieve goals. - Promote the sharing of information and resources. - Actively seek the views of others.
Working with Others: Building and Maintaining Relationships	This session aims to enhance your knowledge and appreciation of the importance of building and maintaining relationships as a newly qualified, or new to role healthcare professional, including the positive impact relationships can have on the quality of patient care and safety.	- Listen to others and recognise different perspectives. - Empathise and take into account the needs and feelings of others. - Communicate effectively with individuals and groups, and act as a positive role model. - Gain and maintain the trust and support of colleagues.
Working with Others: Working within Teams	This session will support you in your team to deliver and improve services.	- Have a clear sense of your role, responsibilities and purpose within the team. - Adopt a team approach, acknowledging and appreciating efforts, contributions and compromises. - Recognise the common purpose of the team and respect team decisions. - Lead a team, involving the right people at the right time.
Managing Services: Managing Performance	This session discusses why measuring performance is a key part of delivering high quality, effective and safe services. It will help you	- Analyse information from a range of sources about performance. - Take action to improve performance. - Take responsibility for tackling difficult issues.

Session	Description	Learning Outcomes
	consider how to improve performance and give some ideas for how to take this forward.	- Build learning from experience into future plans.
Improving Services: Ensuring Patient Safety	This session provides information about minimising the risk to patient safety through deliverance of evidence based practice within the healthcare environment. It will discuss how this can improve the quality of care given to patients through root cause analysis, risk assessment and will also consider how healthcare professionals can reflect on lessons learnt following patient safety incidents.	- Identify and quantify the risk to patients using information from a range of sources. - Use evidence, both positive and negative, to identify options. - Use systematic ways of assessing and minimising risk. - Monitor the effects and outcomes of change.
Improving Services: Encouraging Improvement and Innovation	This session explores ways to support the creation of a climate of continuous service improvement.	- Question the status quo. - Act as a positive role model for innovation. - Encourage dialogue and debate with a wide range of people. - Develop creative solutions to transform services and care.
Improving Services: Facilitating Transformation	This session covers actively contributing to change processes that lead to improving healthcare.	- Model the expected change. - Articulate the need for change and its impact on people and services. - Promote changes leading to systems redesign. - Motivate and focus a group to accomplish change.
Setting Direction: Identifying the Contexts for Change	This session explores how to be aware of the range of factors to be taken into account when identifying the contexts for change.	- Demonstrate awareness of the political, social, technical, economic, organisational and professional environment. - Understand and interpret relevant legislation and accountability frameworks. - Anticipate and prepare for the future by scanning for ideas, best practice and emerging trends that will have an impact on health outcomes. - Develop and communicate aspirations.
Assertiveness in the Workplace	This session aims to provide you the confidence to apply the skills of assertive behaviour in the workplace so benefiting yourself and your team. Assertiveness is getting the attention and the	- Identify the difference between passive, aggressive and assertive behaviour. - Understand how assertive behaviour can get your desired outcome.

Session	Description	Learning Outcomes
	respect you deserve while at the same time, respecting the views of the person you are talking to. It's a two way process consisting of adult, professional and constructive dialogue.	- Understand the principles of being assertive. - Identify the importance of giving and receiving honest feedback. - Identify how to apply the skills of assertive behaviour in the workplace.
Coaching Skills	This session aims to enable you to identify and understand some of the principles of successful coaching, and is your first step on the path to becoming a successful coach to help people find their focus and be the best they can be.	- Identify and understand the principles of coaching. - Understand how coaching can be used in the work context. - Be able to apply a simple model for coaching – GROW. - Know when and how to use coaching skills. - Be clear about the coach/coachee relationship.
Coaching to Support Change	This session covers how coaching can be applied as a means of developing specific areas of knowledge and skill to allow a person to perform to the best of their abilities in their job role - particularly when experiencing times of change.	- Understand how coaching can support staff through times of change. - Define workplace coaching and how it differs from other types of coaching. - Understand how workplace coaching will benefit the individual, the manager and the organisation. - Understand the process and benefits of three-way contracting.
Dealing with Difficult People	This session uses a number of scenarios to introduce how you can deal more effectively with difficult people. Dealing with difficult people is something we will all have to do at some time and no workplace is without them.	- Recognise the common behaviours of a 'difficult' person. - Understand the reasons why dealing with difficult people should not be avoided. - Understand the LEAD model and how this can be a useful tool when dealing with difficult people. - Understand how dealing with difficult people professionally and appropriately can have a positive outcome for all concerned.
Empowering the Manager – Managing Upwards	This session covers three specific skills of influence, negotiation and delegation to help with the process of managing upwards. Managing upwards involves a range of skills in order to get what we need from our manager, whilst keeping them happy too. Sometimes it's necessary to say	- Identify a range of common work styles and understand how to deal with them. - Be able to receive delegated work more clearly, with explicit measures of time and quality expectations. - Identify skills you already have that can be utilised in managing upwards. - Plan to say 'no' without upsetting the boss.

Session	Description	Learning Outcomes
	no to our manager and we must do so assertively without causing any ill-feeling.	- Self-awareness – what can you do differently to change the results you get with your manager.
Performance Management	This session introduces the concept of performance management as a way of effectively managing and supporting the individuals within your team so effectively increasing your overall team performance and contribution to the organisation.	- Identify personal barriers to dealing with performance problems. - Set clear goals for yourself and your team members. - Be more effective in giving reward and encouragement for a job well done. - Identify and differentiate between performance and behaviour issues within the workplace.
The Situational Leader	This session will introduce theories and concepts you can use to help you become a more effective leader and manager.	- Recognise how different situations will require different management styles. - Understand why consistent leadership does not necessarily mean treating All staff exactly the same. - Recognise different leadership styles and how a combination of these styles is more effective than just choosing one.

More learning sessions can be found on the eLfH Leadership Foundations e-learning programme webpage.

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